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QUESTION 1

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

Answer: D

Explanation:

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 2

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 in 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 in 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

Answer: D

Explanation:

This virtual IP address is in the same subnet as the interface IP address, but it is a different IP address. The router then automatically creates the virtual MAC address. All the cooperating HSRP routers know these virtual addresses, but only the HSRP active router uses these addresses at any one point in time.

The virtual router is responsible for host communications such as an ARP request for the host's default gateway. Technically, this is served by the active router since it is hosting the virtual router. However, it is the virtual router's IP address and MAC address that are used for outgoing packets.

QUESTION 3

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

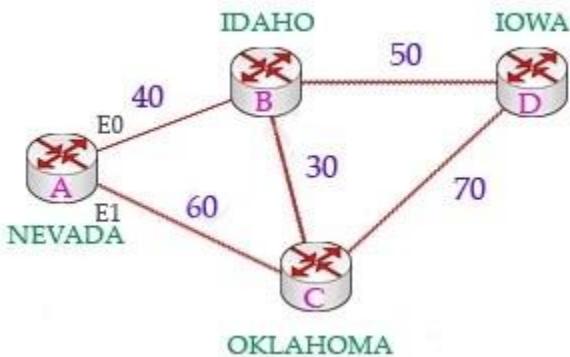
- A. The router calculates the reported distance by multiplying the delay on the exiting Interface by 256.
- B. The router calculates the best backup path to the destination route and assigns it as the feasible successor.
- C. The router calculates the feasible distance of all paths to the destination 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

Answer: BC

Explanation:

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 ($K_1 = 1$, $K_2 = 0$, $K_3 = 1$, $K_4 = 0$, $K_5 = 0$), the metric is calculated as follows:

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

-> 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 4

Which two capabilities of Cisco DNA Center make it more extensible as compared to traditional campus device management? (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

Answer: BD

Explanation:

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.
- Reference: <https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/dna-center/nb-06-dna-cent-platt-aag-cte-en.html>

QUESTION 5

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

R1# show ip interface brief						
Interface	IP-Address	OK?	Method	Status	Protocol	
FastEthernet0/0	unassigned	YES	NVRAM	administratively down	down	
GigabitEthernet1/0	192.168.10.1	YES	NVRAM	up	up	
GigabitEthernet2/0	10.10.1.10	YES	manual	up	up	
GigabitEthernet3/0	10.10.10.20	YES	manual	up	up	
GigabitEthernet4/0	unassigned	YES	NVRAM	administratively down	down	
Loopback0	172.16.15.10	YES	manual			

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

Answer: C

Explanation:

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 6

Which 802.11 frame type is association response?

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

Answer: A

Explanation:

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.

QUESTION 7

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

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

Answer: D

Explanation:

overlay: the virtual network
underlay: the physical network
northbound: interacts with the server

QUESTION 8

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

Answer: B

QUESTION 9

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

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

Answer: C

Explanation:

NAT uses 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 10

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

Answer: B

Explanation:

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 11

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

Answer: C

Explanation:

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 12

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

Answer: DE

QUESTION 13

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

Answer: AC

QUESTION 14

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

Answer: B

Explanation:

enable password <string> - Sets the enable password, and stores that password in plaintext in the config.

enable secret <string> - Sets the enable password, and stores that password as an md5 hash in the config.

service password-encryption - For any passwords in the config that are stored in plaintext, this command changes them to be stored as hashed values instead.

QUESTION 15

Drag and Drop Question

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

Answer Area

fundamental configuration elements are stored in a manifest

uses TCP port 10002 for configuration push jobs

uses Ruby for fundamental configuration elements

uses SSH for remote device communication

uses TCP 8140 for communication

uses YAML for fundamental configuration elements

Ansible

[Redacted]

[Redacted]

Chef

[Redacted]

[Redacted]

Puppet

[Redacted]

[Redacted]

Answer:

Answer Area

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uses YAML for fundamental configuration elements

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uses TCP port 10002 for configuration push jobs

uses Ruby for fundamental configuration elements

Puppet

fundamental configuration elements are stored in a manifest

uses TCP 8140 for communication

Explanation:

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.

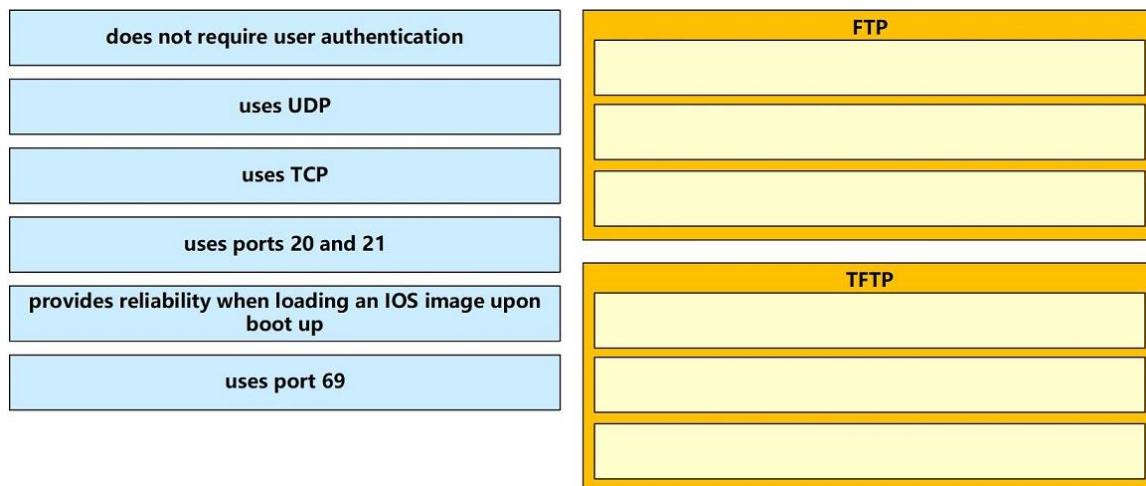
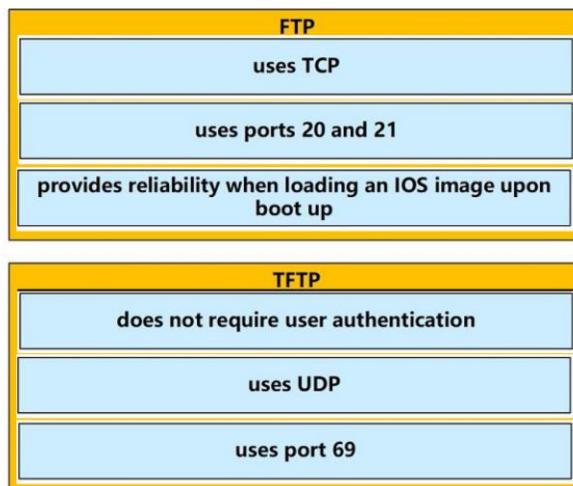
Puppet is an open-source configuration management solution, which is built with Ruby and offers custom Domain Specific Language (DSL) and Embedded Ruby (ERB) templates to create custom Puppet language files, offering a declarative-paradigm programming approach.

A Puppet piece of code is called a manifest, and is a file with .pp extension.

QUESTION 16

Drag and Drop Question

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


Answer:


QUESTION 17

Drag and Drop Question

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

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

Answer:

access port
wireless LAN controller
virtual interface
dynamic interface
service port

Explanation:

The service port can be used for 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.

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

QUESTION 18

Drag and Drop Question

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

mitigate on the right.

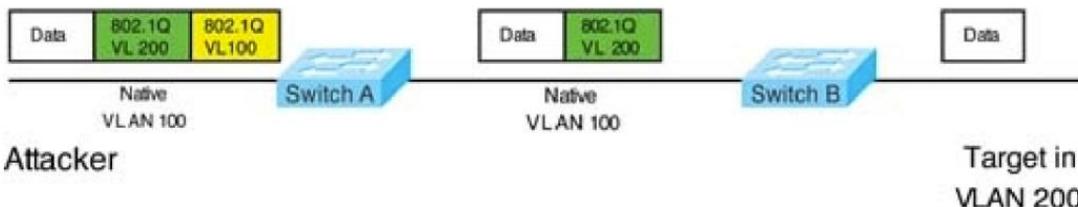
Configure VACL	802.1q double tagging
Configure dynamic ARP inspection	ARP spoofing
Configure BPDU guard	unwanted superior BPDUs
Configure root guard	unwanted BPDUs on PortFast-enabled interfaces

Answer:

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

Explanation:

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 a 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.

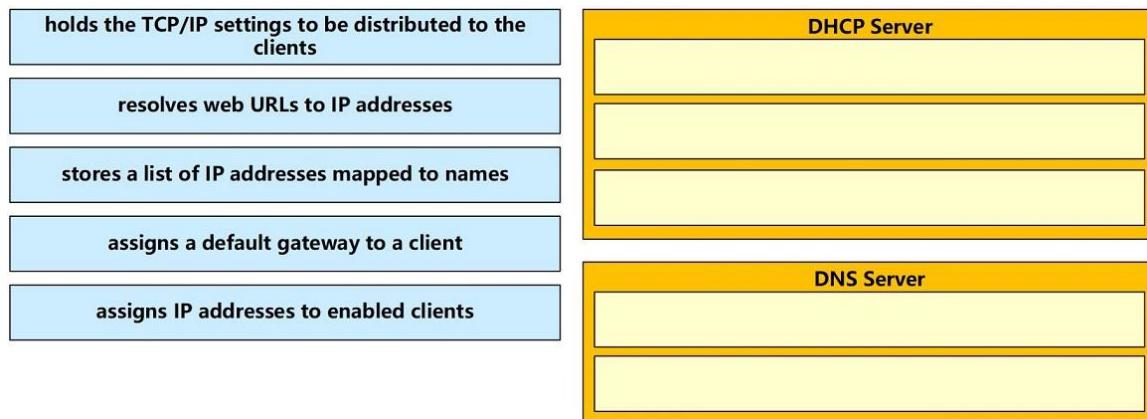
ARP attack (like ARP poisoning/spoofing) is a type of attack in which a malicious actor sends falsified ARP messages over a local area network as ARP allows a gratuitous reply from a host even if an ARP request was not received. This results in the linking of an attacker's MAC address with the IP address 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.

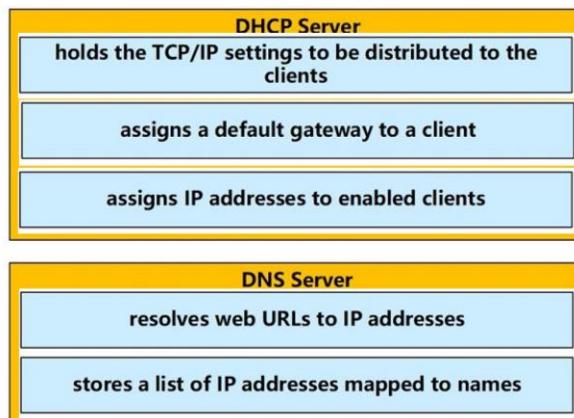
QUESTION 19

Drag and Drop Question

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



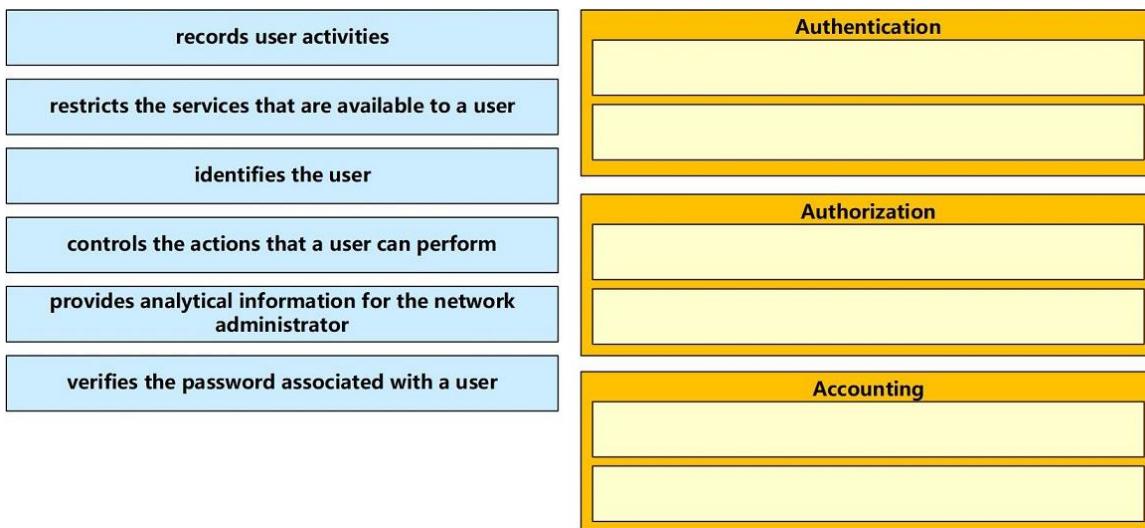
Answer:



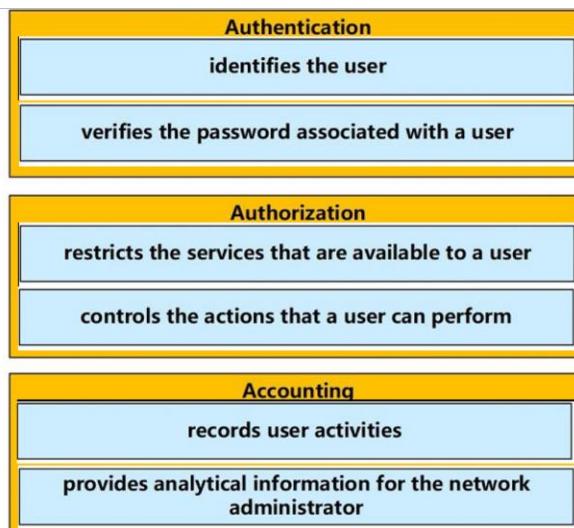
QUESTION 20

Drag and Drop Question

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



Answer:



QUESTION 21

Drag and Drop Question

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

Answer Area

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

Answer:
Answer Area

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

Explanation:

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 $172.28.(228 + \text{the increment number}).0$ or $172.28.230.0$ then reduce 1 bit $\rightarrow 172.28.229.255$ is the broadcast address of our subnet. Therefore the last usable host is $172.28.229.254$.

QUESTION 22

Drag and Drop Question

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



Answer:



Explanation:

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: <https://www.cisco.com/c/en/us/support/docs/wireless/4400-series-wireless-lan-controllers/106082-wlc-compatibility-matrix.html>

QUESTION 23

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

Answer: D

Explanation:

A wireless LAN (or WLAN) controller is used in combination with the Lightweight Access Point Protocol (LWAPP) to "manage light-weight access points in large quantities" by the network administrator or network operations center.

QUESTION 24

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

- A. 1729.0.0/16
- B. 172.28.0.0/16
- C. 192.0.0.0/8
- D. 209.165.201.0/24

Answer: B

Explanation:

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 25

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.

Answer: A

Explanation:

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 26

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

Answer: AE

Explanation:

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/9800/config/>

guide/b_wl_16_10_cg/multi-preshared-key.pdf

QUESTION 27

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 downstate.
- B. The link is in an error disables state
- C. The link becomes an access port.
- D. The link becomes a trunkport.

Answer: D

Explanation:

Dynamic Auto - Makes the Ethernet port willing to convert the link to a trunk link. The port becomes a trunk port if the neighboring port is set to trunk or dynamic desirable mode. This is the default mode for some switchports.

Dynamic Desirable - Makes the port actively attempt to convert the link to a trunk link. The port becomes a trunk port if the neighboring Ethernet port is set to trunk, dynamic desirable or dynamic auto mode.

QUESTION 28

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

Answer: DE

Explanation:

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).

QUESTION 29

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

Answer: A

Explanation:

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

QUESTION 30

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

Answer: D

Explanation:

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.

Reference: <https://www.cisco.com/c/en/us/products/collateral/switches/nexus-9000-series-switches/guide-c07-733228.html>

QUESTION 31

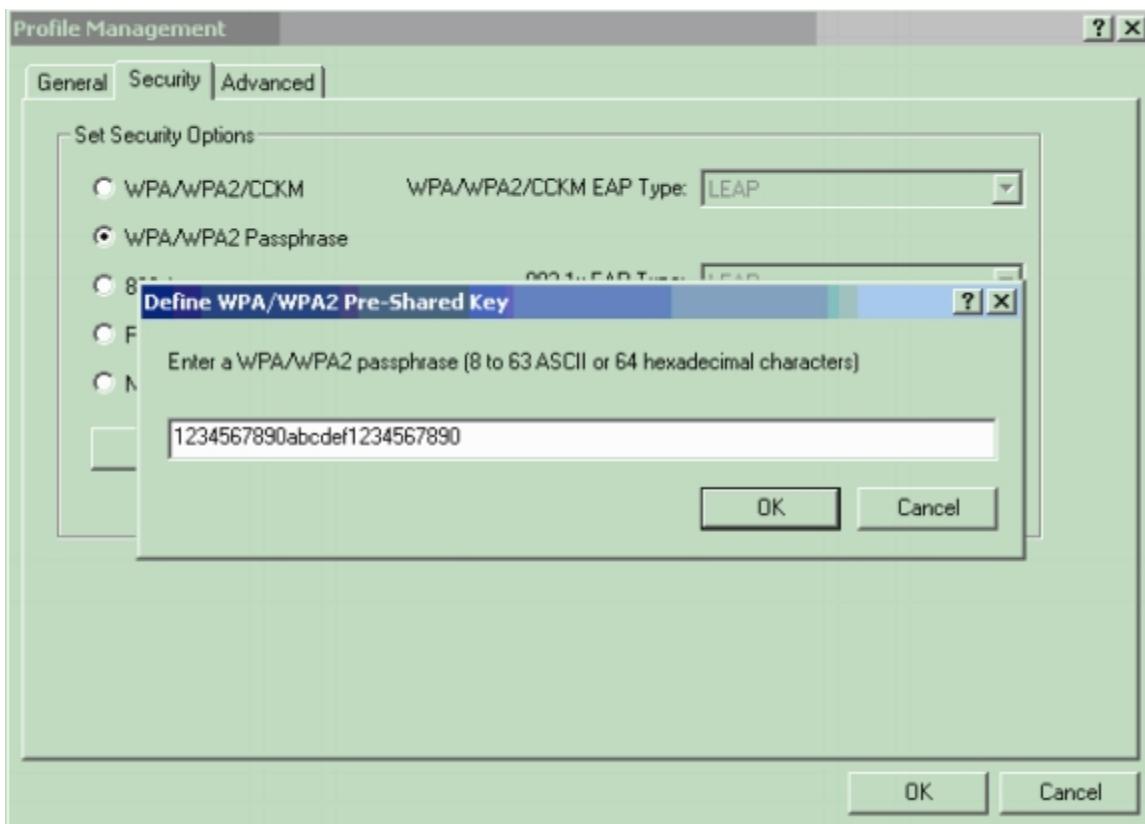
Which type of wireless encryption is used for WPA2 in pre-shared key mode?

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

Answer: D

Explanation:

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 32

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 green field deployment.
- B. Its 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

Answer: C

Explanation:

Automation: Using controllers and open APIs, Cisco DNA simplifies network management through abstraction and centralized policy enforcement that allows IT to focus on business intent and consistently apply configurations to improve service and keep operations consistently secure from the core to the edge.

<https://www.cisco.com/c/en/us/solutions/collateral/enterprise-networks/digital-network-architecture/nb-06-digital-nw-architect-faq-cte-en.html>

QUESTION 33

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

Answer: AD

Explanation:

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).

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_conavd/configuration/15-mt/qos-conavd-15-mt-book/qos-conavd-cfg-wred.html

QUESTION 34

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

Answer: B

Explanation:

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.

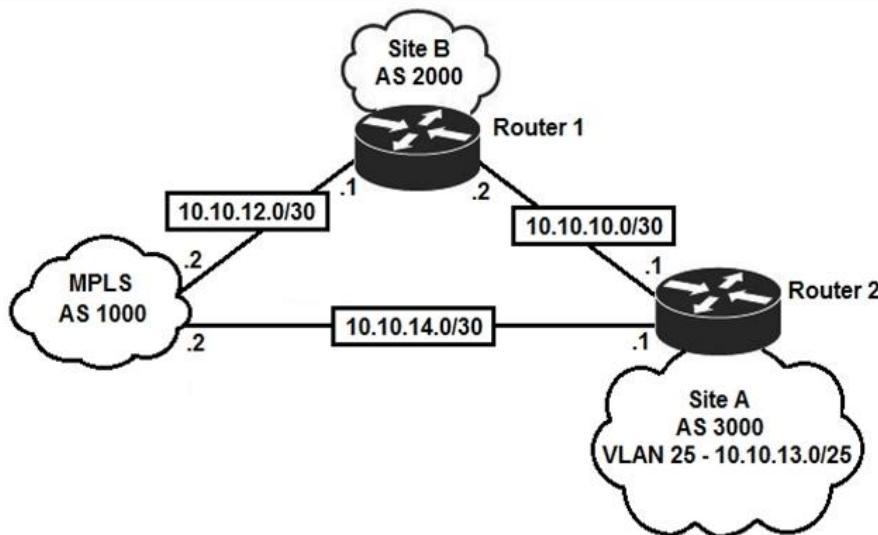
With SNMP, the network administrator can send commands to multiple routers to do the backup.

QUESTION 35

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 is 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 a symmetrical
- D. Route 10.10.13.0/25 learned via the Gi0/0 interface remains in the routing table

Answer: B

Explanation:

You need to assume that the routing table listed is before the change. And that the eBGP route will be the installed route after the change due to lower AD.

The new eBGP route will be added to the routing table. eBGP has an administrative distance of 20 while OSPF has an administrative distance of 110. The new route will be preferred for sending traffic to 10.10.13.0/25. The existing OSPF route will turn into a floating route and not appear in the routing table.

QUESTION 36

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

Answer: D

Explanation:

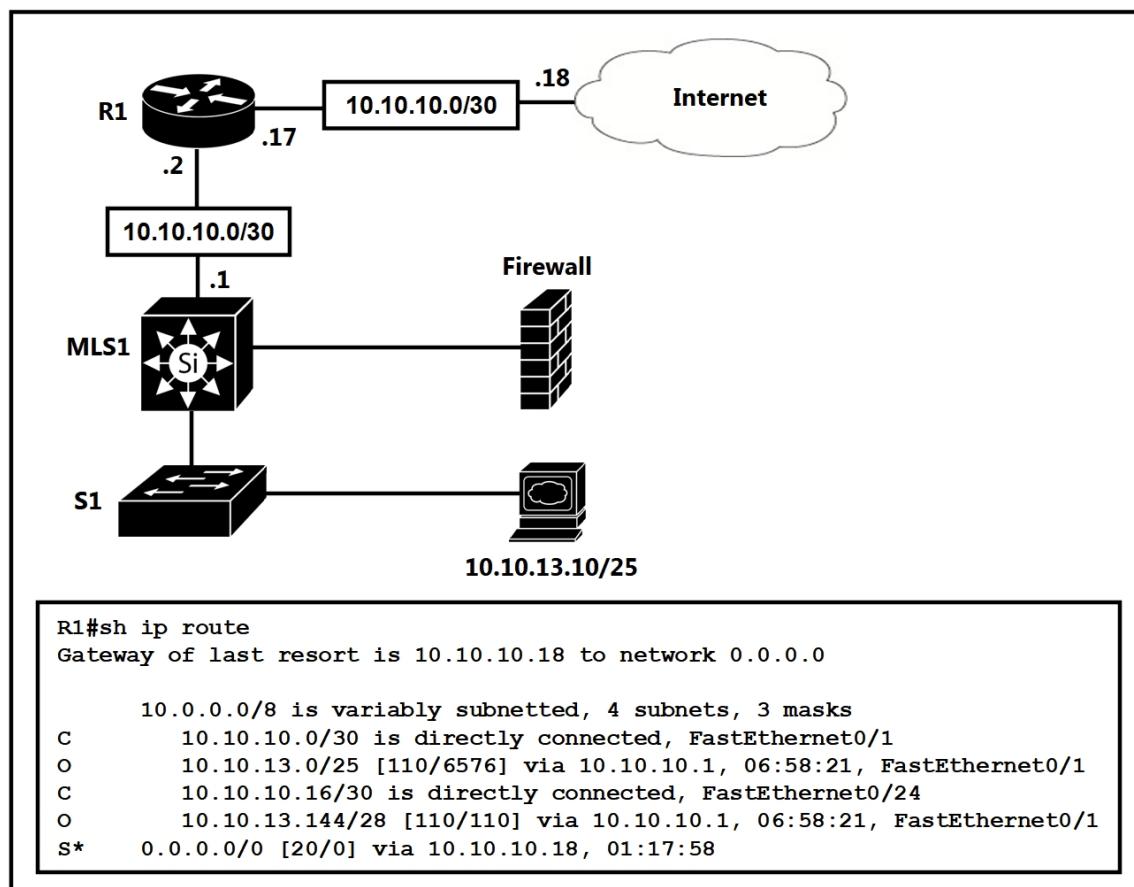
PoE monitoring and policing compares the power consumption on ports with the administrative maximum value (either a configured maximum value or the port's default value). If the power consumption on a monitored port exceeds the administrative maximum value, the following actions occur:

- 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_ether.pdf

QUESTION 37

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



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

Answer: D

Explanation:

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 38

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

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

Answer: A

Explanation:

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 39

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

Answer: C

Explanation:

Full is the state for adjacent routers that have fully synchronised databases.

QUESTION 40

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

Answer: D

Explanation:

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 41

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

Answer: D

Explanation:

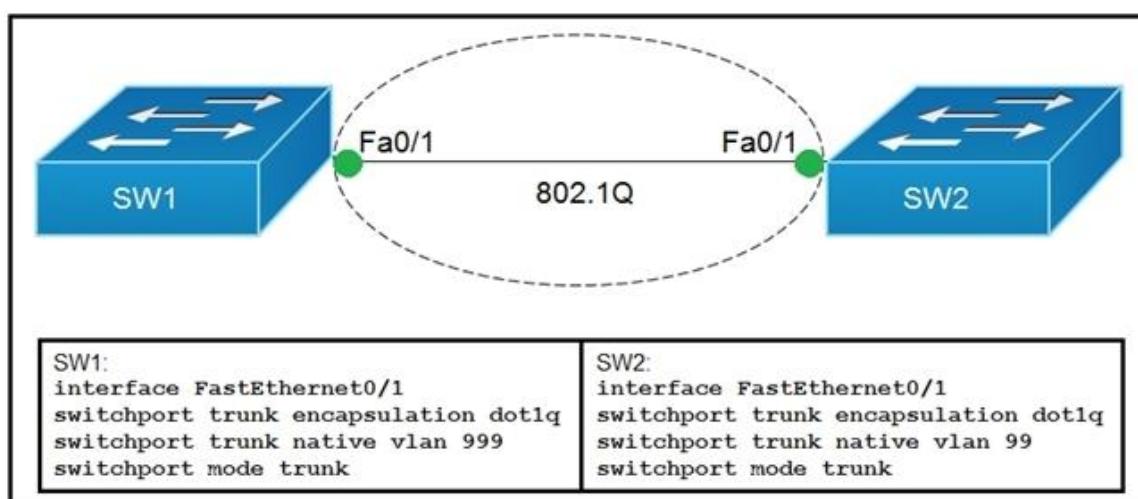
Below are the 3 cloud supporting services cloud providers provide to customer:

- + SaaS (Software as a Service): SaaS uses the web to deliver applications that are managed by a third-party 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 third-party 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 42

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.

Answer: B

Explanation:

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 43

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 non overlapping 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

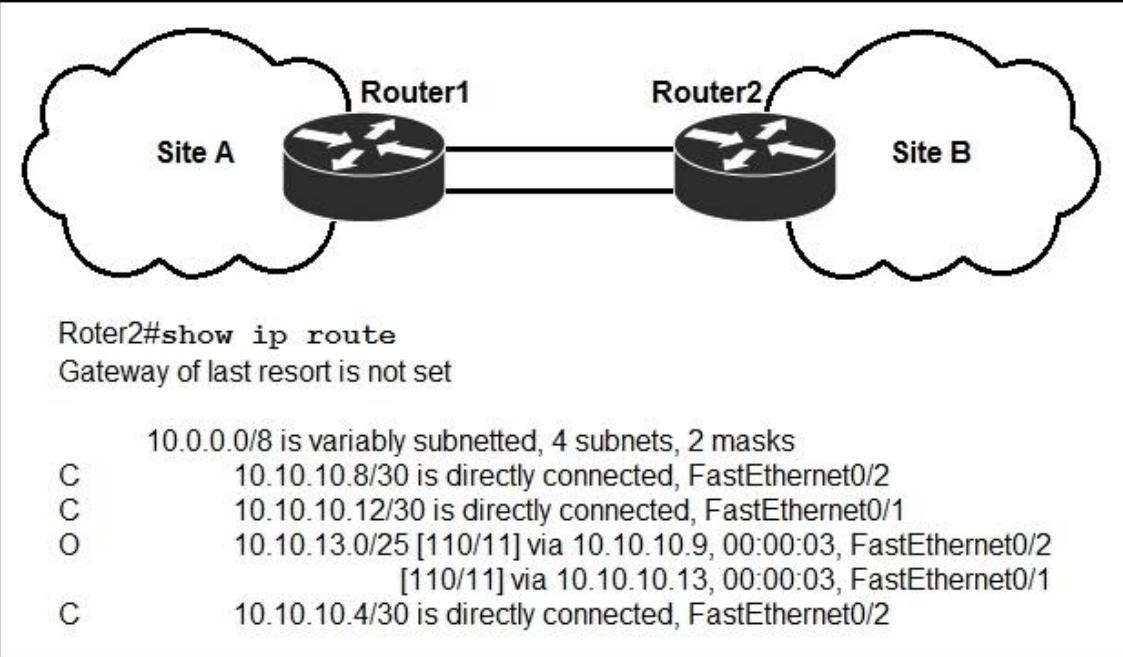
Answer: C

Explanation:

Selecting the proper WiFi channel can significantly improve your WiFi coverage and performance. In the 2.4 GHz band, 1, 6, and 11 are the only non-overlapping channels. Selecting one or more of these channels is an important part of setting up your network correctly.

QUESTION 44

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

Answer: C

Explanation:

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 45

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

Answer: DE

Explanation:

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 46

Which two conditions must be met before SSH operates 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

Answer: AB

Explanation:

The Cisco IOS image used must be a k9(crypto) image in order to support SSH.

Step 2: Configure the DNS domain of the router.

ip domain-name rtp.cisco.com

QUESTION 47

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?

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

O*K2 0.0.0.0/0 [110/1] via 10.12.0.1, 00:00:01, GigabitEthernet0/0
    10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C      10.0.0.0/24 is directly connected, GigabitEthernet0/0
L      10.0.0.2/32 is directly connected, GigabitEthernet0/0
C      10.13.0.0/24 is directly connected, GigabitEthernet0/1
L      10.13.0.2/32 is directly connected, GigabitEthernet0/1
```

- 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 Gigabit Ethernet0/1

Answer: A

Explanation:

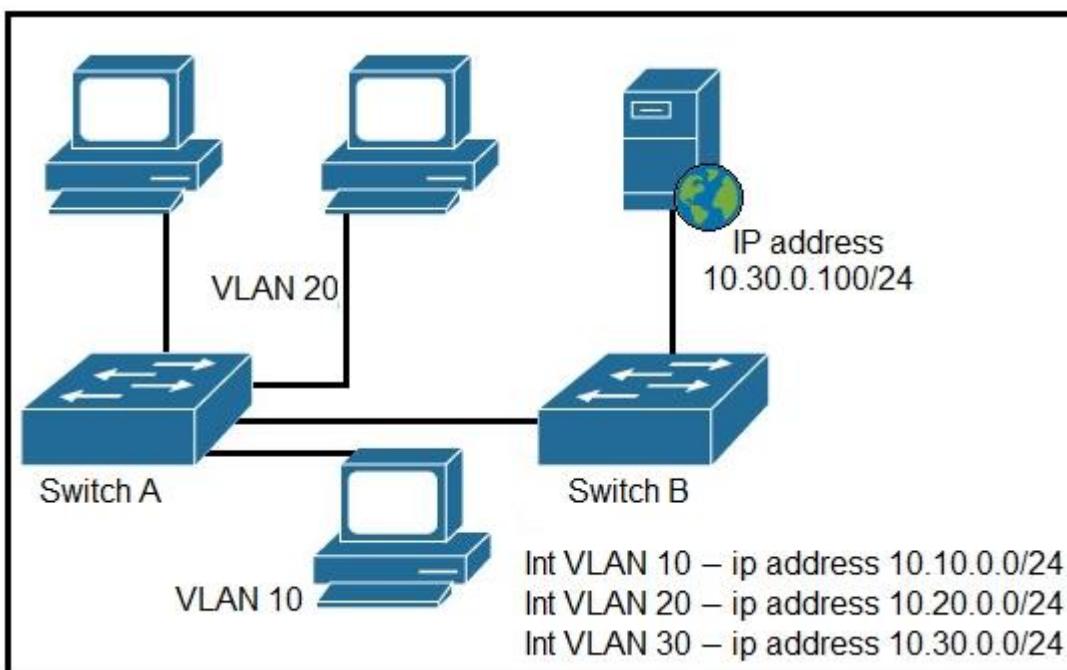
Our new static default route has the Administrative Distance (AD) of 120, which is bigger than the AD of OSPF External route (O*E2) so it will not be pushed into the routing table until the current OSPF External route is removed.

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 48

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



- A. config t
ip access-list extended wwwblock
permit ip any any
deny tcp any host 10.30.0.100 eq 80
int vlan 20
ip access-group wwwblock in
- B. config t
ip access-list extended wwwblock
permit ip any any
deny tcp any host 10.30.0.100 eq 80
int vlan 30
ip access-group wwwblock in

- C. config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
int vlan 10
ip access-group wwwblock in
- D. config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
permit ip any any
int vlan 20
ip access-group wwwblock in

Answer: D

QUESTION 49

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. administrative distance
- C. metric
- D. as-path

Answer: C

Explanation:

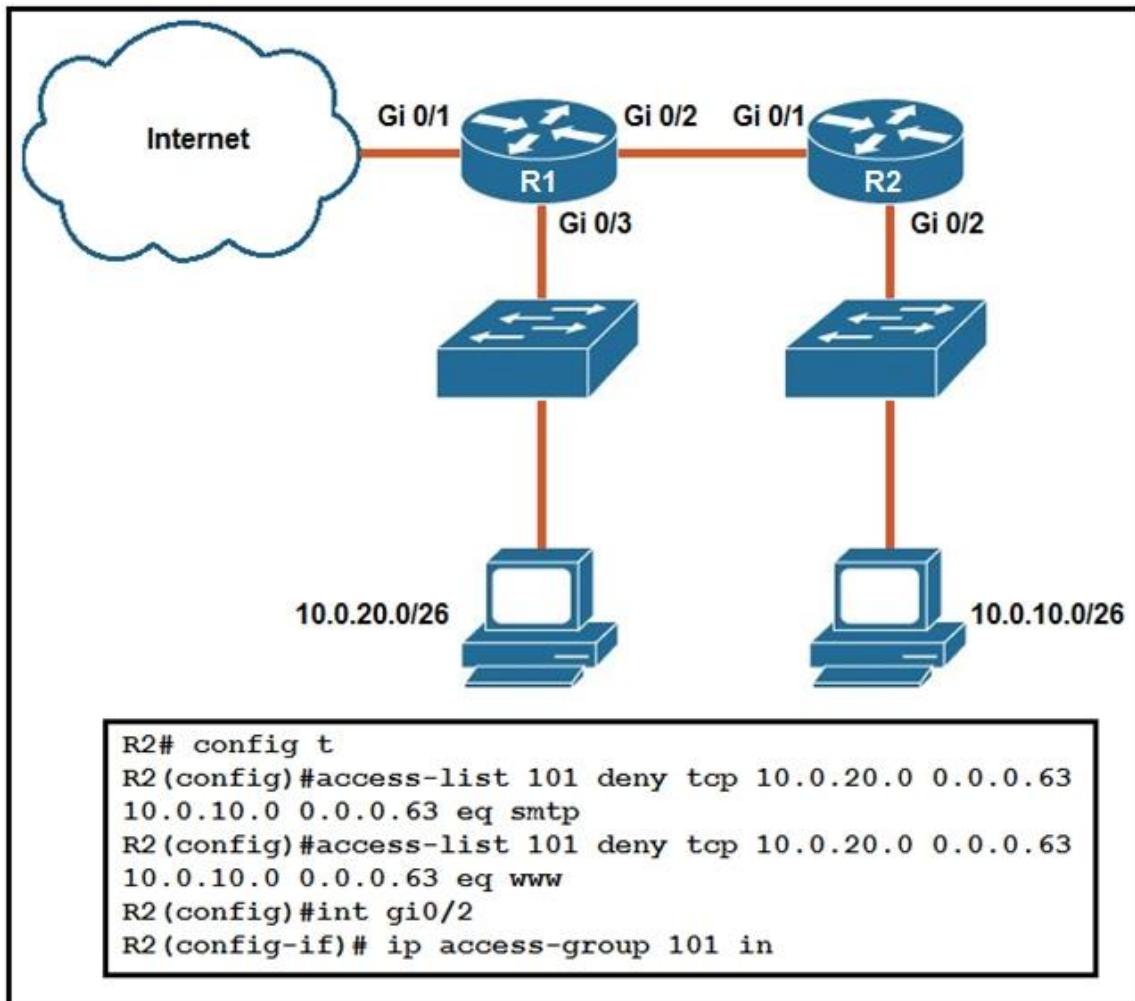
If a router learns two different paths for the same network from the same routing protocol, it has to decide which route is better and will be placed in the routing table. **Metric** is the measure used to decide which route is better (lower number is better). Each routing protocol uses its own metric.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

<https://study-ccna.com/administrative-distance-metric/>

QUESTION 50

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

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



- A. Add a "permit ip any any" statement to the beginning 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 in bound on R1
- E. The ACL must be moved to the Gi0/1interface outbound onR2

Answer: BC

QUESTION 51

What is the primary difference 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

Answer: C

Explanation:

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 52

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

Answer: A

Explanation:

By default, IOS considers static routes better than OSPF-learned routes. By default, IOS gives static routes an administrative distance of 1. A floating static route floats or moves into and out of the IP routing table depending on whether the better (lower) administrative distance route learned by the routing protocol happens to exist currently.

QUESTION 53

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 routers share the same IP address, and default gateway traffic is load-balanced between them

Answer: AB

QUESTION 54

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

```
Atlanta#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Atlanta(config)#aaa new-node1
Atlanta(config)#aaa authentication login default local
Atlanta(config)#line vty 0 4
Atlanta(config-line)#login authentication default
Atlanta(config-line)#exit
Atlanta(config)#username ciscoadmin password adminadmin123
Atlanta(config)#username ciscoadmin privilege 15
Atlanta(config)#enable password cisco123
Atlanta(config)#enable secret testing1234
Atlanta(config)#end
```

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

Answer: C

Explanation:

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 55

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

Answer: D

QUESTION 56

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

Answer: C

Explanation:

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 site-to-site VPN is defined by IPsec.

QUESTION 57

What is the primary effect of the spanning-tree port fast 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

Answer: B

Explanation:

The purpose of Port Fast is to minimize the time interfaces must wait for spanning-tree to converge, it is effective only when used on interfaces connected to end stations.

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

QUESTION 58

How will Link Aggregation be implemented on a Cisco Wireless LAN Controller?

- 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

Answer: D

Explanation:

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: https://www.cisco.com/c/en/us/td/docs/wireless/controller/7-5/configuration-guide/b_cg75/b_cg75_chapter_0100010.html

QUESTION 59

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

```
R1# show ip route
```

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

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

Answer: D

Explanation:

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 60

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

Answer: AD

Explanation:

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: <https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst4000/8-2glx/configuration/guide/ntp.html>

QUESTION 61

Refer to the exhibit. Which command provides this output?

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

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

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

Answer: D

QUESTION 62

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

Answer: B

Explanation:

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 63

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

- A. autonomous
- B. lightweight

- C. bridge
- D. mobility express

Answer: B

Explanation:

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.

Reference: <https://www.cisco.com/c/en/us/support/docs/wireless/aironet-1200-series/70278-lap-faq.html>

QUESTION 64

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

Answer: B

Explanation:

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 65

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

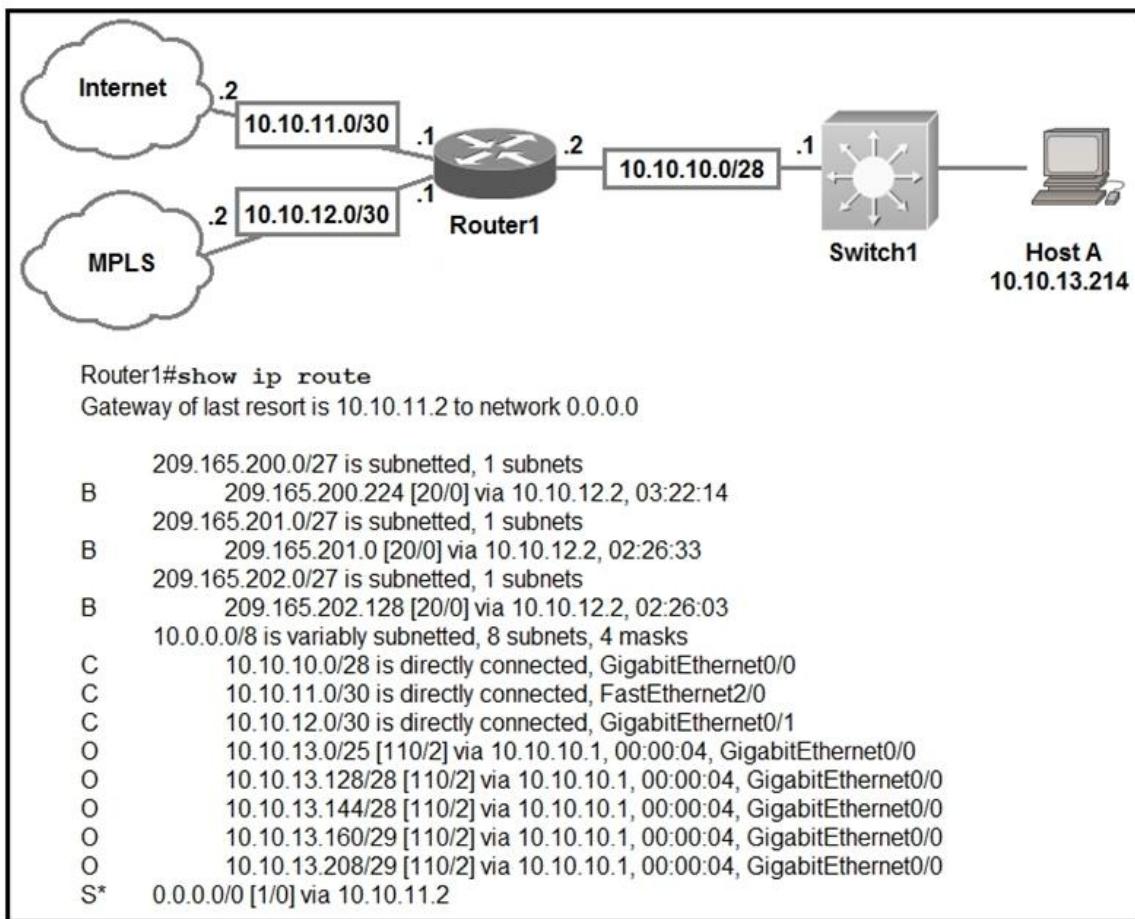
Answer: A

Explanation:

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 66

Refer to the exhibit. Which prefix does Router1 use for traffic to Host A?



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

Answer: D

Explanation:

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 67

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.

Answer: BC

Explanation:

controller-based networking - A style of building computer networks that use a controller that centralizes some features and provides application programming interfaces (APIs) that allow for software interactions between applications and the controller (northbound APIs) and between the controller and the network devices (southbound APIs).

centralized control plane - An approach to architecting network protocols and products that places the control plane functions into a centralized function rather than distributing the function across the networking devices.

QUESTION 68

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

```
Router(config)# interface GigabitEthernet 1/0/1
Router(config-if)# ip address 192.168.16.143 255.255.255 240
Bad mask /28 for address 192.168.16.143
```

- 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.

Answer: A

Explanation:

For /28 network, There $(2^4)=16$ Subnets with each having $(2^4-2)=14$ host (14 +1 Network ID+ 1Broadcast ID)=16

Subnets are

192.168.16.0

192.168.16.16

.....

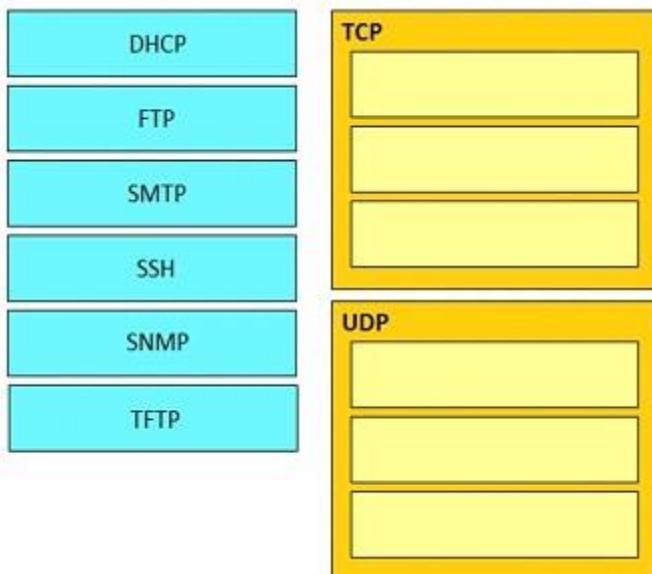
192.168.16.128

192.168.16.144 (Above this network ID there will be address 192.168.16.143 which is a broadcast ID of Network 192.168.16.128

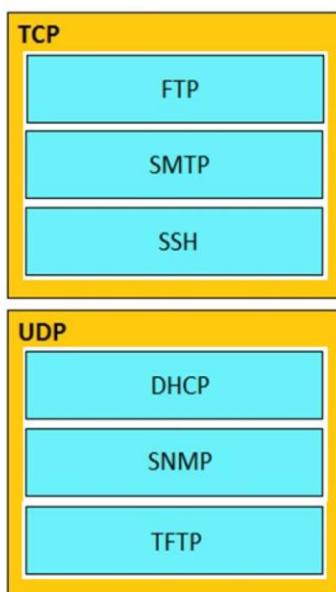
QUESTION 69

Drag and Drop Question

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



Answer:



QUESTION 70

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

Answer: A

Explanation:

The "preempt" command enables the HSRP router with the highest priority to immediately become the active router.

QUESTION 71

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

Answer: D

Explanation:

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
      ▶ [REDACTED] ▶
      Et1/0.4 Grp 2 Active 10.0.0.254 0000.0c07.ac02 refresh 30 secs (nex
      ▶ [REDACTED] ▶
      Group name is "HSRP1", advertisement interval is 34 sec
```

QUESTION 72

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

Answer: D

Explanation:

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 73

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

Answer: BD

Explanation:

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 74

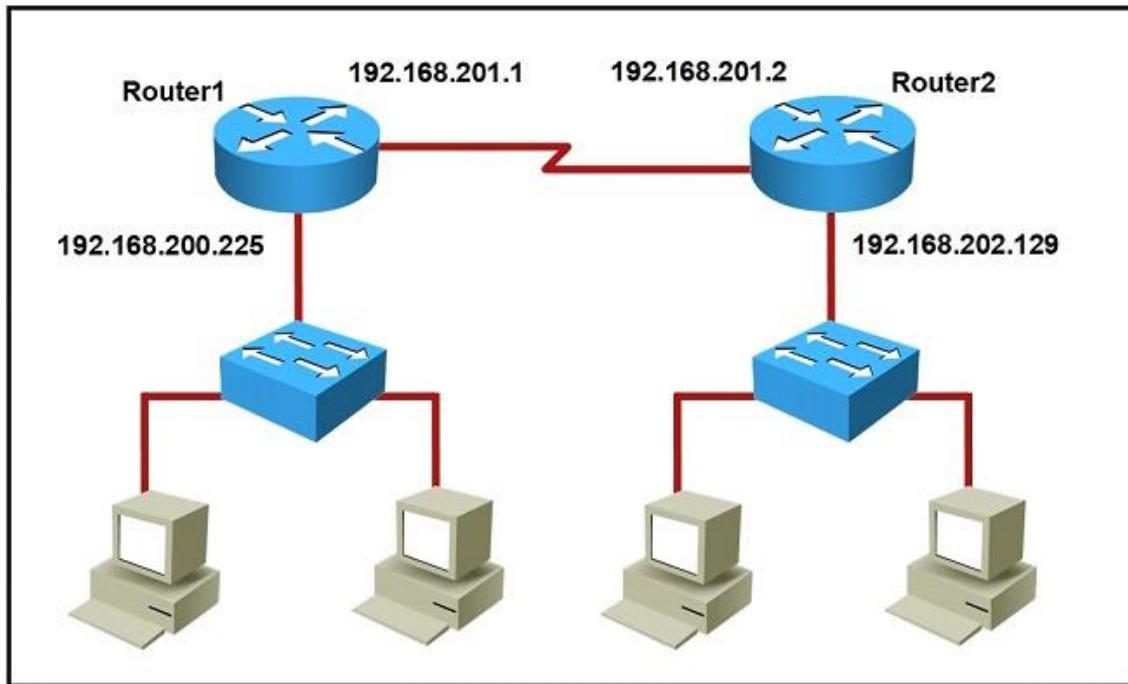
Which effect does the aaa new-model configuration command have?

- 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 a group.
- D. It configures a local user on the device.

Answer: A

QUESTION 75

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

Answer: B

Explanation:

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

QUESTION 76

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

Answer: B

QUESTION 77

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

Answer: A**Explanation:**

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 78

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

- A. IS-IS
- B. EIGRP
- C. OSPF
- D. BGP
- E. RIP

Answer: BE**Explanation:**

EIGRP is sometimes referred to as a hybrid routing protocol because it has characteristics of both distance-vector and link-state protocols. For example, EIGRP doesn't send link-state packets as OSPF does; instead, it sends traditional distance-vector updates containing information about networks plus the cost of reaching them from the perspective of the advertising router. And EIGRP has link-state characteristics as well—it synchronizes routing tables between neighbors at startup and then sends specific updates only when topology changes occur. This makes EIGRP suitable for very large networks. EIGRP has a maximum hop count of 255 (the default is set to 100).

QUESTION 79

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

Answer: A**Explanation:**

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 80

Drag and Drop Question

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

Dynamic RF Feature	Controller provides centralized management of users and VLANs
Easy Deployment Process	Access points auto adjust signal strength
Optimized user performance	Controller image auto deployed to access Points
Easy upgrade process	Controller uses loadbalancing to maximize throughput

Answer:

Easy Deployment Process
Dynamic RF Feature
Easy upgrade process
Optimized user performance

QUESTION 81

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

Answer: D

Explanation:

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

QUESTION 82

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

Answer: D

Explanation:

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 83

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

- A. sniffer
- B. mesh
- C. flex connect
- D. local

Answer: C

Explanation:

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 84

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

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

Answer: B

Explanation:

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 85

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

```
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

Answer: C

Explanation:

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 86

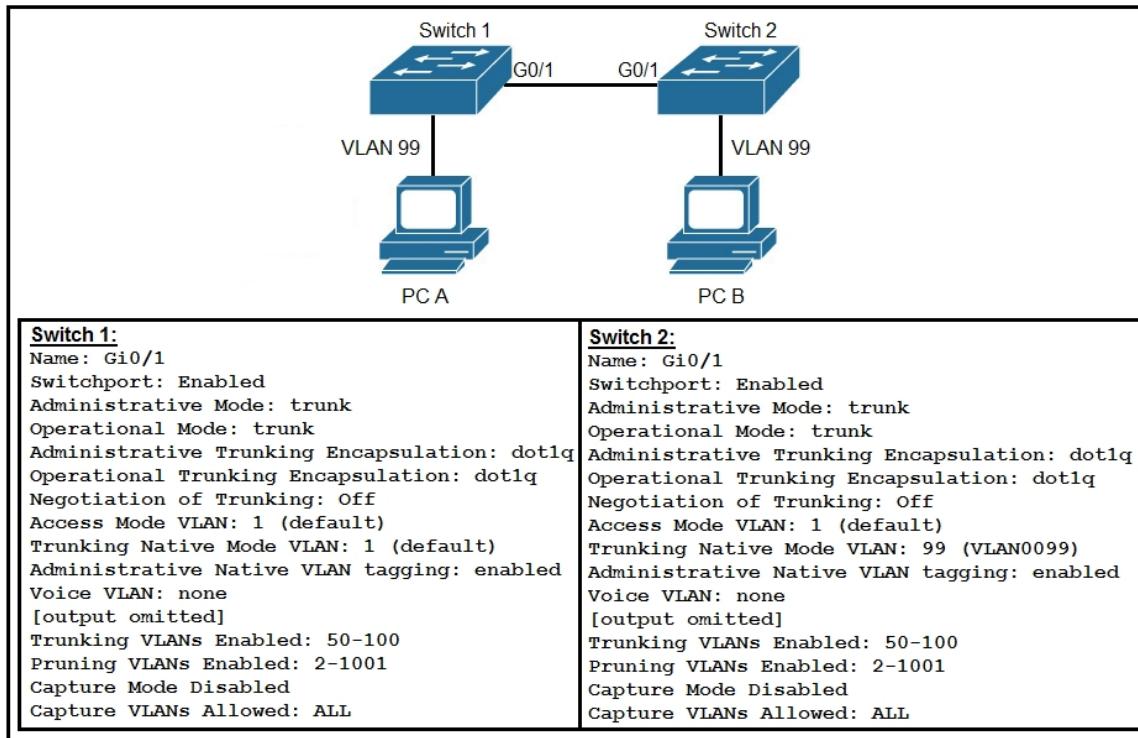
When OSPF learns multiple paths to a network, how does it select a route?

- 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 umber of hops between the source router and the destination to determine the router with the lowest metric

Answer: C

QUESTION 87

Refer to the Exhibit. After the switch configuration the ping test fails between PC A and PC B Based on the output for switch 1. Which error must be corrected?



- A. 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

Answer: A

Explanation:

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 88

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

Answer: A

Explanation:

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.

QUESTION 89

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

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

Answer: BE

Explanation:

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/aci/apic/sw/2-x/rest_cfg/2_1_x/b_Cisco_APIC_REST_API_Configuration_Guide/b_Cisco_APIC_REST_API_Configuration_Guide_chapter_01.html

QUESTION 90

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

```
ip arp inspection vlan 5-10
interface fastethernet 0/1
  switchport node 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 discards all ingress ARP traffic with invalid MAC-to-IP address bindings.

Answer: D

Explanation:

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

QUESTION 91

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

Answer: C

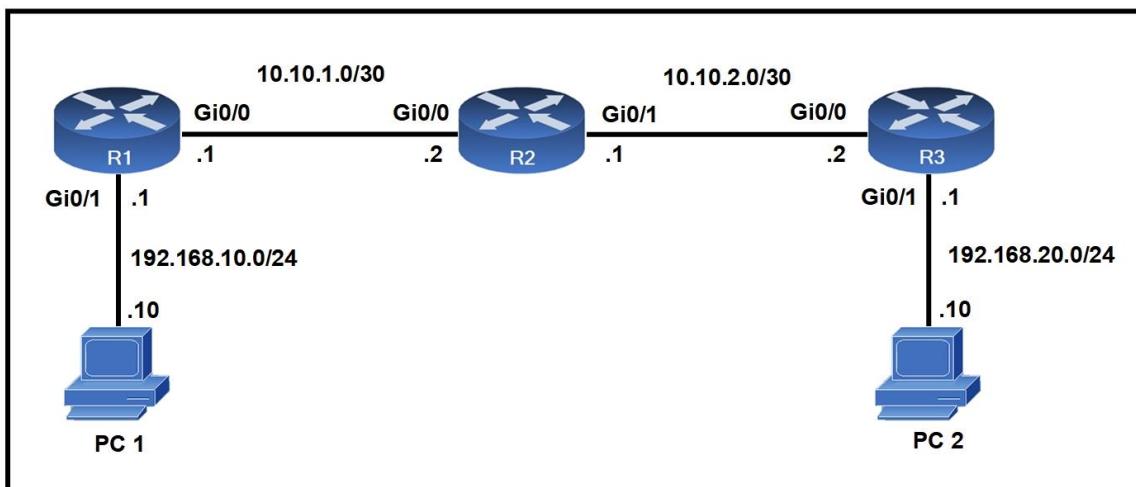
Explanation:

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 have an IP address then CDP still operates without any problem.

But the IP address of that neighbor is not provided.

QUESTION 92

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

Answer: C

Explanation:

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

QUESTION 93

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

Answer: C

Explanation:

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 real-time 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 94

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

Answer: D

Explanation:

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 Official 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 95

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

Answer: B

Explanation:

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 96

Refer to the exhibit. An engineer configured NAT translations and has verified that the configuration is correct.

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

Which IP address is the source IP after the NAT has taken place?

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

Answer: D

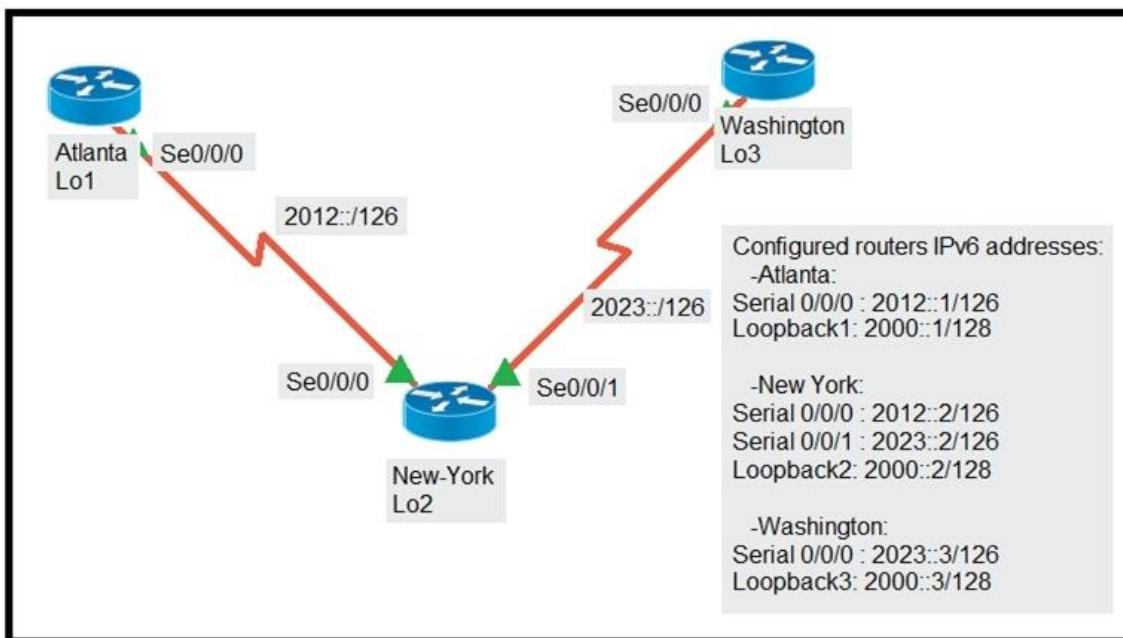
Explanation:

From the output it can be seen that the router is running Dynamic NAT with overloading and after NAT translation the new source address should be the inside global ip address.

QUESTION 97

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

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



- A. Configure the ipv6 route 2012::1/126 2023::3/126 command on the Washington router
- B. Configure the ipv6 route 2023::3/126 2012::1/126 command on the Atlanta router.
- C. Configure the Lpv6 route 2012::1/126 s0/0/0 command on the Atlanta router
- D. Configure the ipv6 route 2023::3/126 2012::1/126 command on the Atlanta router
- E. Configure the ipv6 route 2012::1/126 2023::3/126 command on the Washington router

Answer: DE

Explanation:

The short syntax of static IPv6 route is:

ipv6 route <destination-IPv6-address> {next-hop-IPv6-address | exit-interface}

QUESTION 98

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

Answer: C**Explanation:**

The Broadcast network type is the default for an OSPF enabled ethernet interface (while Point-to-Point 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 99

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

Answer: BC**QUESTION 100**

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"
}

Answer: D

Explanation:

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 101

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

Answer: C

Explanation:

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 102

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

Answer: A

Explanation:

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

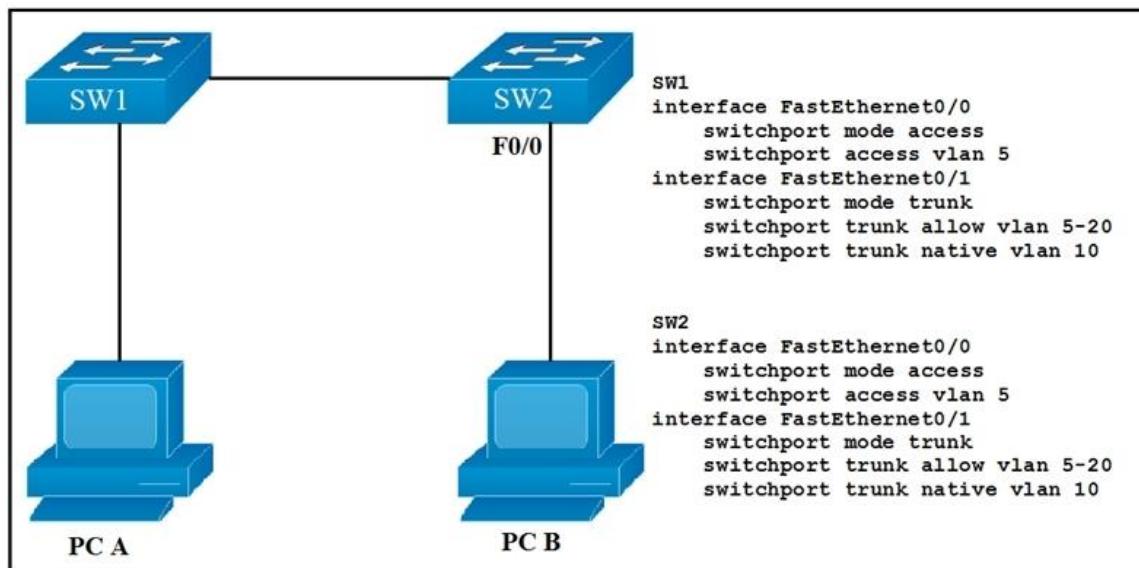
desirable Enable PAgP unconditionally

on Enable Etherchannel only

passive Enable LACP only if a LACP device is detected

QUESTION 103

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

Answer: A

Explanation:

Cisco switches always have VLAN 1 as the default VLAN, which is needed for many protocol communication between switches like spanning-tree protocol for instance.

You can't change or even delete the default VLAN, it is mandatory.

The native VLAN is the only VLAN which is not tagged in a trunk, in other words, native VLAN frames are transmitted unchanged.

QUESTION 104

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

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

Answer: BC

Explanation:

VLAN 1 is a system default VLAN, you can use this VLAN but you cannot delete it. By default VLAN 1 is used 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 105

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

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

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

Answer: B

QUESTION 106

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

Answer: D

Explanation:

show ip eigrp events

To display the Enhanced Interior Gateway Routing Protocol (EIGRP) event log, use the show ip eigrp events command in user EXEC or privileged EXEC mode.

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_eigrp/command/ire-cr-book/ires1.html#wp3095206170

QUESTION 107

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

Answer: A

Explanation:

Router flapping would be level 3 (as it means that interface(s) are going up down multiple times in very short period).

QUESTION 108

What are two southbound APIs? (Choose two)

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

Answer: AB

Explanation:

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 109

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

Answer: A

Explanation:

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/4400-series-wireless-lan-controllers/109669-secure-wlc.html>

QUESTION 110

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

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

Answer: C

Explanation:

The "ipv6 address autoconfig" command causes the device to perform IPv6 stateless address auto-configuration to discover prefixes on the link and then to add the EUI-64 based addresses to the interface.

Addresses are configured depending on the prefixes received in Router Advertisement (RA) messages.

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

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

- + 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 111

A network administrator enters the following command on a router: logging trap 3. What are three message types that will be sent to the Syslog server? (Choose three.)

- A. informational
- B. emergency
- C. warning
- D. critical
- E. debug
- F. error

Answer: BDF

QUESTION 112

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 subnetted, 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   10.0.2.0/23
    [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   10.0.4.0/22
    [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   10.0.8.0/21
    [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   10.0.16.0/20
    [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   10.0.32.0/19
    [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, 4w5d
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 10.111.33.217, 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, 3w3d
```

- A. The EIGRP administrative distance was manually changed from 90 to 170.
- B. There are 20 different network masks within the 10.0.0.0/8 network.
- 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. A static default route to 10.85.33.14 was defined.

Answer: BC

QUESTION 113

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.

Answer: BC

Explanation:

Exterior Gateway Protocols (EGP): Used for routing between autonomous systems. It is also referred to as inter-AS routing. Service providers and large companies may interconnect using an EGP. The Border Gateway Protocol (BGP) is the only currently viable EGP and is the official routing protocol used by the Internet.

Because BGP is the only EGP available, the term EGP is rarely used; instead, most engineers simply refer to BGP.

<https://www.ciscopress.com/articles/article.asp?p=2180210&seqNum=7>

QUESTION 114

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

Answer: AC

Explanation:

The information contained in Cisco Discovery Protocol advertisements varies based on the type of device and the installed version of the operating system. Some of the information that Cisco Discovery Protocol can learn includes:

Cisco IOS version running on Cisco devices
Hardware platform of devices
IP addresses of interfaces on devices
Locally connected devices advertising Cisco Discovery Protocol
Interfaces active on Cisco devices, including encapsulation type
Hostname
Duplex setting
***VLAN Trunking Protocol (VTP) domain
***Native VLAN

<https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/cdp/configuration/15-mt/cdp-15-mt-book/nm-cdp-discover.html>

QUESTION 115

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.

Answer: AB

QUESTION 116

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

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

Answer: C

Explanation:

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

QUESTION 117

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

Answer: A

Explanation:

- 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/catalyst2960/software/release/12-2_40_se/configuration/guide/scg/swvoip.pdf

QUESTION 118

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

```

SW1#sh lacp neighbor
Flags: S - Device is requesting Slow LACPDU
       F - Device is requesting Fast LACPDU
       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

Answer: D

Explanation:

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.

Reference:

https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst3650/software/release/3se/consolidated_guide/command_reference/b_c

QUESTION 119

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 length is 1, maximum is 6
Last flood scan time is 0 msec, maximum is 1 msec
Neighbor Count is 3, Adjacent neighbor count is 3
Adjacent with neighbor 10.1.1.4
Adjacent with neighbor 10.2.2.2
Adjacent with neighbor 10.3.3.3 (Backup Designated Router)
Suppress hello for 0 neighbor(s)**

- 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

Answer: C

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.

QUESTION 120

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

Answer: C

Explanation:

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 121

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

Answer: D

Explanation:

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 subnet (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 122

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

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

Answer: D

Explanation:

Time synchronization, such as that provided by the Network Time Protocol (NTP), is required between the source and the target device to provide accurate one-way delay (latency) measurements.

QUESTION 123

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

Answer: CE

QUESTION 124

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 Vioaltion 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

Answer: AE

Explanation:

protect - Drops packets with unknown source addresses until you remove a sufficient number of secure MAC addresses to drop below the maximum value.

restrict- Drops packets with unknown source addresses until you remove a sufficient number of secure MAC addresses to drop below the maximum value and causes the SecurityViolation counter to increment.

shutdown - Puts the interface into the error-disabled state immediately and sends an SNMP trap notification.

QUESTION 125

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

Answer: C

QUESTION 126

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

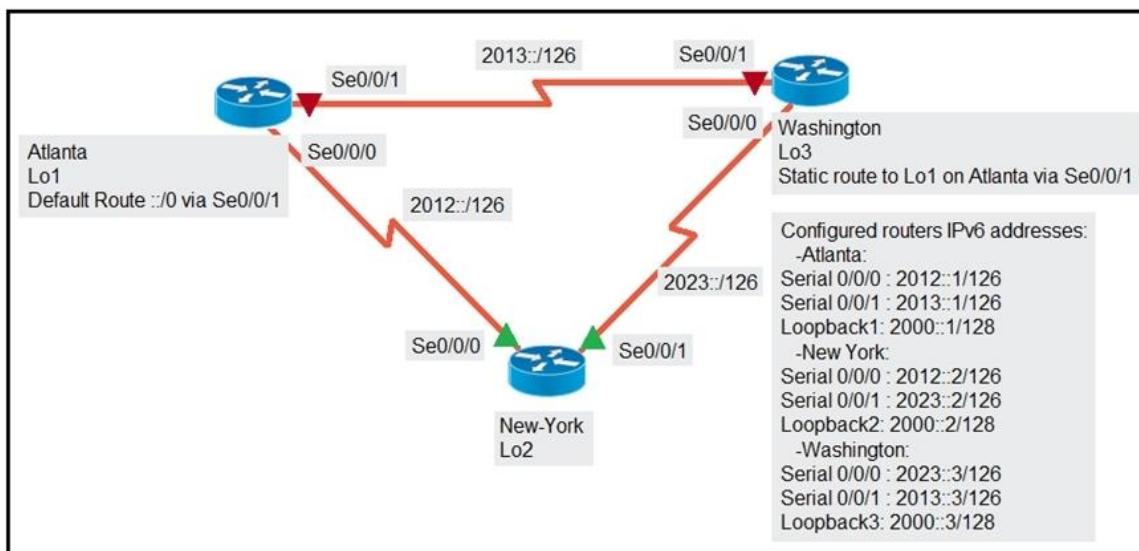
- A. to uniquely identify devices at Layer 2
- B. to allow communication with devices on a different network
- C. to differentiate a Layer 2 frame from a Layer 3 packet
- D. to establish a priority system to determine which device gets to transmit first
- E. to allow communication between different devices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

Answer: AE

QUESTION 127

Refer to Exhibit. An engineer is configuring the NEW York router to reach the Lo1 interface of the Atlanta router using interface Se0/0/0 as the primary path.

Which two commands must be configured on the New York router so that it can reach the Lo1 interface of the Atlanta router via Washington when the link between New York and Atlanta goes down? (Choose two)



- A. ipv6 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::1/1282023::2 5
- E. ipv6 router 2000::1/1282023::3 5

Answer: AE

Explanation:

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 128

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

```
SW2
vtp domain cisco
vtp mode transparent
vtp password ciscotest
interface fastethernet0/1
  description connection to 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

Answer: C

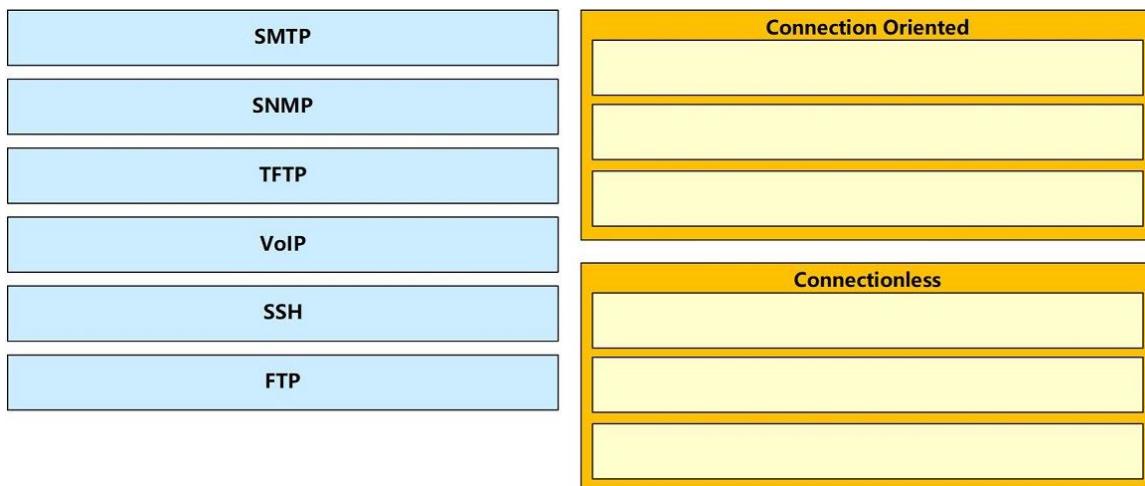
Explanation:

The VTP mode of SW2 is transparent so it only forwards the VTP updates it receives to its trunk links without processing them.

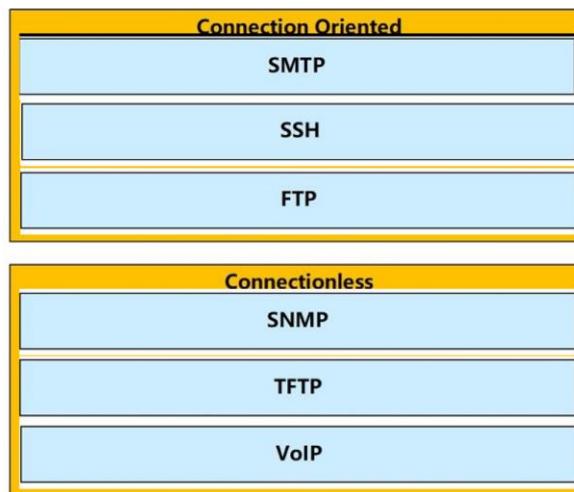
QUESTION 129

Drag and Drop Question

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



Answer:



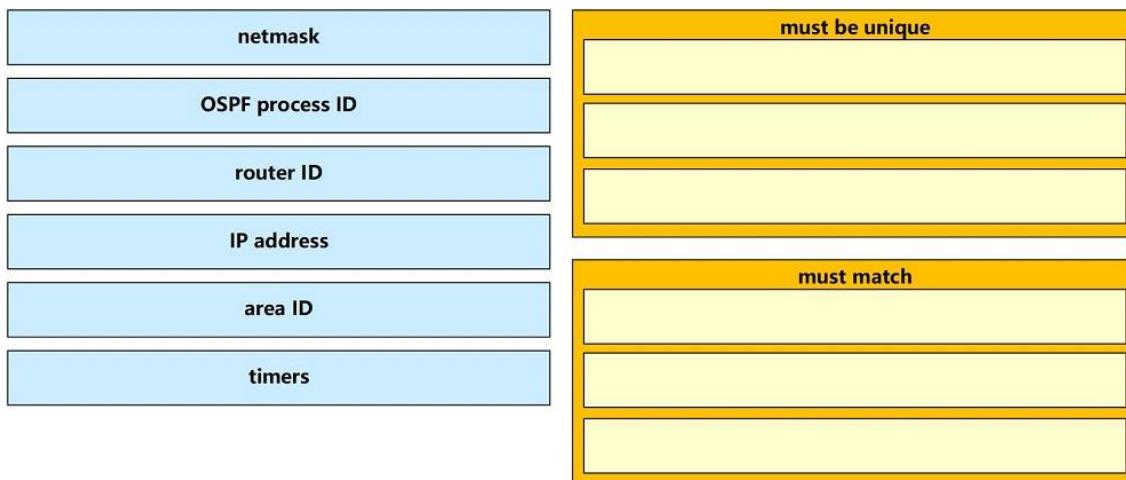
Explanation:

SSH uses TCP port 22 while SNMP uses UDP port 161 and 162.

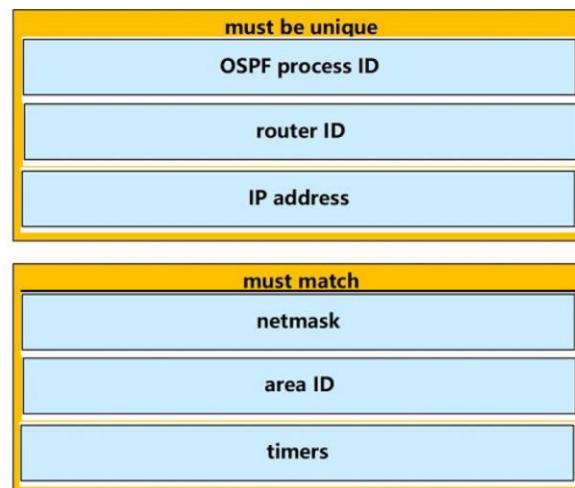
QUESTION 130

Drag and Drop Question

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



Answer:



QUESTION 131

Drag and Drop Question

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 brd 192.168.1.255 scope global eth1
        inet6 fe80::20c::29ff:fe89:79b3/64 scope link
            valid_lft forever preferred_lft forever
```

Answer Area

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

Answer:**Answer Area**

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

Explanation:

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 132

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

Answer: A

QUESTION 133

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

Answer: AE

Explanation:

In order of importance security policies and load balancing should be at the top of the list. POE would likely be third in line mainly because this would be a budgeted consideration and not necessarily an immediate post-deployment task requirement.

QUESTION 134

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

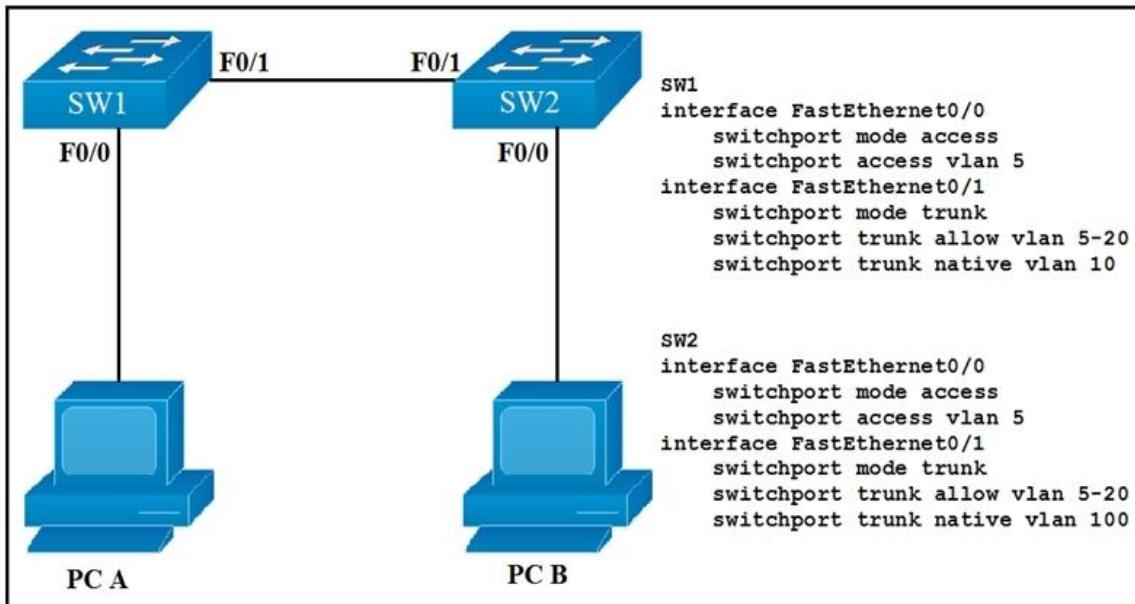
Answer: C

Explanation:

Preamble is a 7 Byte field in the Ethernet frame which helps to receiver to know that it is an actual data (Ethernet Frame) and not some random noise in the transmission medium. It acts like a doorbell telling about the incoming data.

QUESTION 135

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.

Answer: B

Explanation:

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 136

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

Answer: D

QUESTION 137

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 Carrier Sense Multiple Access/Collision Detection is used

- E. when a collision occurs after the 32nd byte of a frame has been transmitted

Answer: BC

Explanation:

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

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

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

QUESTION 138

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

Answer: B

Explanation:

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 139

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

Answer: C

Explanation:

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 140

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

Answer: BC

Explanation:

Every routing protocol supports equal cost path load balancing. In addition, Interior Gateway Routing Protocol (IGRP) and EIGRP also support unequal cost path load balancing. Use the variance n command in order to instruct the router to include routes with a metric of less than n times the minimum metric route for that destination. The variable n can take a value between 1 and 128. The default is 1, which means equal cost load balancing. Traffic is also distributed among the links with unequal costs, proportionately, with respect to the metric.

Reference:

<https://www.cisco.com/c/en/us/support/docs/ip/enhanced-interior-gateway-routing-protocol-eigrp/13677-19.html#topic1>

QUESTION 141

Drag and Drop Question

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

connected
EBGP
EIGRP
OSPF
RIP
static

1
2
3
4
5
6

Answer:

connected
static
EBGP
EIGRP
OSPF
RIP

QUESTION 142

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

Answer: DE

Explanation:

Desirable mode: Desirable mode in Port Aggregation Protocol (PAgP) initiates the negotiation and tries to form EtherChannel with other end.

Active Mode: Active Mode in Link Aggregation Control Protocol (LACP) initiates the negotiation and tries to form EtherChannel with other end.

QUESTION 143

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-disabled 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

Answer: AC

QUESTION 144

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

Answer: DE

Explanation:

Must be unique:

- OSPF process ID
- router ID
- IP address

Must match:

- netmask
- area ID
- timers

QUESTION 145

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

Answer: AB

QUESTION 146

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

Answer: A

QUESTION 147

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")

Answer: A

QUESTION 148

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

Answer: C

QUESTION 149

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-A371:10975
ip address 172.16.1.4 255.255.255.248
- B. interface e0/0
description to HQ-A371:10975
ip address 10.2.1.3 255.255.255.252
- C. interface e0/0
description to HQ-A371:10975
ip address 192.168.1.1 255.255.255.248
- D. interface e0/0
description to HQ-A371:10975
ip address 209.165.201.2 255.255.255.252

Answer: D

Explanation:

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 150

How does STP prevent forwarding loops at OSI Layer 2?

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

Answer: D

Explanation:

TTL is a Layer 3 mechanism that routers decrement after a successful hop.

QUESTION 151

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:B8: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

Answer: ADE

QUESTION 152

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

Answer: D

QUESTION 153

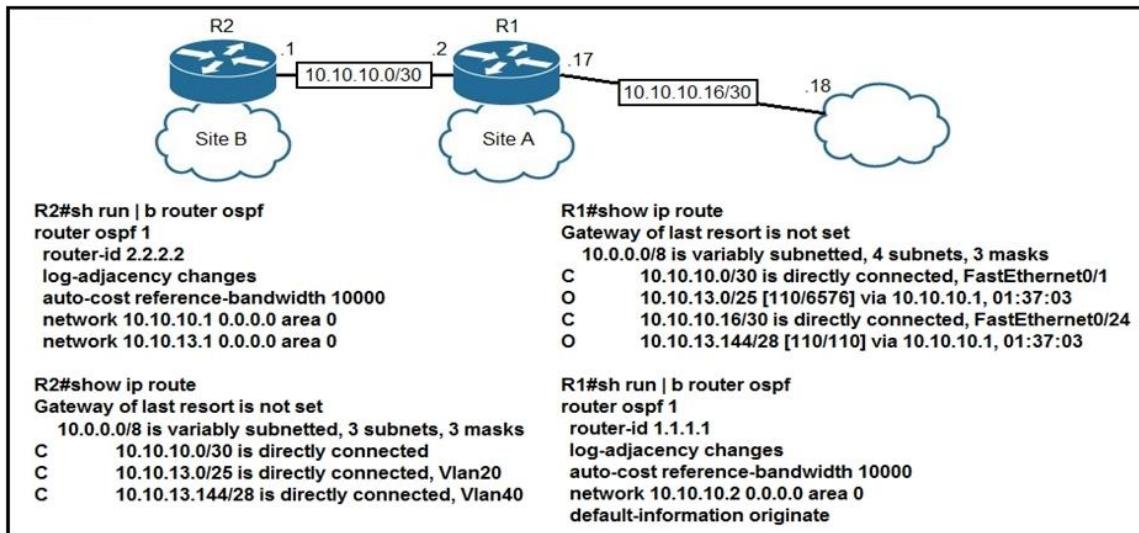
Which command can you enter to allow Telnet to be supported in addition to SSH?

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

Answer: A

QUESTION 154

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.

Answer: C

QUESTION 155

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.

Answer: ABE

Explanation:

Hierarchical design of OSPF (basically means that you can separate the larger internetwork into smaller internetworks called areas) helps us create a network with all features listed above (decrease routing overhead, speed up convergence, confine network instability to single areas of the network).

QUESTION 156

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

- A. 00000000
- B. 11111100
- C. 11111111

D. 11111101

Answer: B

Explanation:

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 157

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
*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

Answer: A

Explanation:

172.16.1.1 is not in the routing table this means it is a random address.

But since a default static route of 0.0.0.0 has been configured and injected to OSPF with the next hop address of 192.168.14.4 through FastEthernet1/0, thus R1 will send the packet to 192.168.14.4.

QUESTION 158

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.

Answer: AE

Explanation:

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

QUESTION 159

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

Answer: D

QUESTION 160

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

Answer: AD

QUESTION 161

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

Answer: D

Explanation:

The port that receives the best BPDU on a bridge is the root port.

QUESTION 162

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

Answer: B

Explanation:

This example shows how to increase the probability that the spanning tree instance on access port interface 2/0 is chosen as the root bridge by changing the port priority to 32:
switch(config-if)# spanning-tree port-priority 32

QUESTION 163

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 4096
- D. A switch in VTP transparent mode save the VLAN databases to the running configuration only

Answer: A

Explanation:

You can only create, add, delete vlan in server and transparent mode, you won't be able to create, delete vlan in client mode.

QUESTION 164

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

Answer: A

Explanation:

First please notice that unlike other routing protocols like OSPF or EIGRP, we have to use subnet mask, not wildcard mask, to advertise the routes in the “network” command -> C is not correct. Secondly, with BGP, you must advertise the correct network and subnet mask in the “network” command (in this case network 172.16.1.32/27). BGP is very strict in the routing advertisements. In other words, BGP only advertises the network which exists exactly in the routing table (in this case network x.x.x.32/27 exists in the routing table as the Fa0/0 interface). If you put the command “network x.x.0.0 mask 255.255.0.0” or “network x.0.0.0 mask 255.0.0.0” or “network x.x.x.33 mask 255.255.255.255” then BGP will not advertise anything. Therefore the full command in this question is “network 172.16.1.32 mask 255.255.255.224”.

QUESTION 165

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
*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

Answer: B

QUESTION 166

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

Answer: B

Explanation:

Q. If there is no priority configured for a standby group, what determines which router is active?

A. The priority field is used to elect the active router and the standby router for the specific group. 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 167

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)

```
RTR01 (config) #router eigrp 103
RTR01 (config-router) #network 10.4.3.0
RTR01 (config-router) #network 172.16.4.0
RTR01 (config-router) #network 192.168.2.0
RTR01 (config-router) #auto-summary
```

- 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

Answer: ACD

Explanation:

Auto summary uses "classful boundary"

- 10.4.3.0 with mask 255.0.0.0 gives 10.0.0.0
- 172.16.4.0 with mask 255.255.0.0 gives 172.16.0.0
- 192.168.2.0 with mask 255.255.255.0 gives 192.168.2.0

QUESTION 168

Which configuration command can you 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

Answer: A

Explanation:

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 169

Refer to the exhibit. After you apply the given configuration to a router, the DHCP clients behind the device cannot 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

Answer: D

Explanation:

Configuring a DHCP server on a router:

```
conf t
service dhcp
ip dhcp pool <pool name>
network <network address of the pool>
default-router <ip address of the interface facing the hosts, or ip address of the interface facing
downstream clients>
dns-server <ip address of dns-server>
exit
```

QUESTION 170

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

Answer: AB

Explanation:

Just like OSPF or EIGRP, BGP establishes a neighbor adjacency with other BGP routers before they exchange any routing information. Unlike other routing protocols however, BGP does not use broadcast or multicast to "discover" other BGP neighbors.

Neighbors have to be configured manually and BGP uses TCP port 179 for the connection.

QUESTION 171

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.

Answer: A

QUESTION 172

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.

Answer: C

Explanation:

Router has pointed default router to 192.168.4.1 and this subnet is connected via serial 2 interface. Router does not have router for the 192.0.2.156. so it will use the default gateway 192.168.4.1. A default route identifies the gateway IP address to which the router sends all IP packets for which it does not have a learned or static route.

QUESTION 173

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

- A. NAT
- B. 6 to 4 tunneling
- C. L2TPv3
- D. dual-stack

Answer: B

Explanation:

Overlay tunneling encapsulates IPv6 packets in IPv4 packets for delivery across an IPv4 infrastructure (a core network or the figure below). By using overlay tunnels, you can communicate with isolated IPv6 networks without upgrading the IPv4 infrastructure between

them. Overlay tunnels can be configured between border devices or between a border device and a host; however, both tunnel endpoints must support both the IPv4 and IPv6 protocol stacks. IPv6 supports the following types of overlay tunneling mechanisms:

- 1 Manual
- 2 Generic routing encapsulation (GRE)
- 3 IPv4-compatible
- 4 6to4
- 5 IntraSite Automatic Tunnel Addressing Protocol (ISATAP)

QUESTION 174

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.

Answer: ACE

Explanation:

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 175

Refer to the exhibit. After you apply the given configurations to R1 and R2 you notice that OSPFv3 fails to start.

```
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
```

Which reason for the problem is most likely true ?

- 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

Answer: A

QUESTION 176

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

Answer: D

Explanation:

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 177

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
Seriak0/1	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

Answer: BCD

Explanation:

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

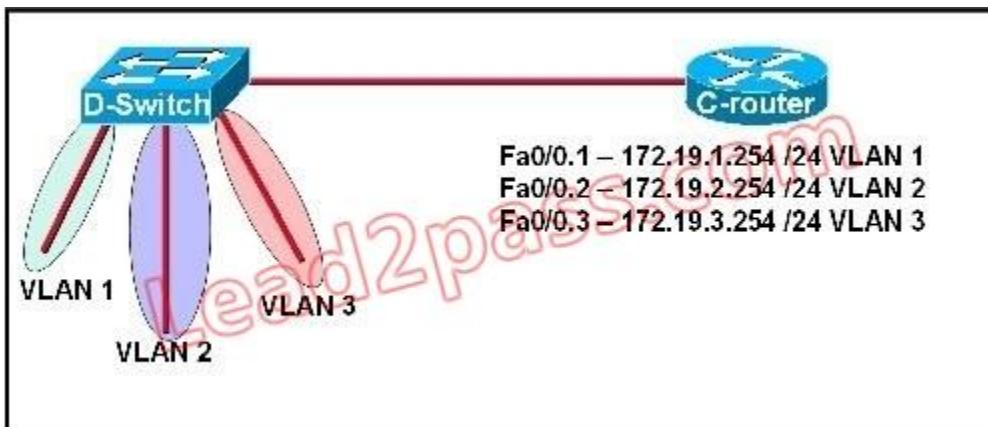
+ Broadcast address: 192.168.12.127

Therefore all interface in the range of this network will join OSPF.

QUESTION 178

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 area 0`
- 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.

Answer: D

Explanation:

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 179

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

Answer: C

Explanation:

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 (2^4). 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 180

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

Answer: C

Explanation:

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

QUESTION 181

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 1198 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.

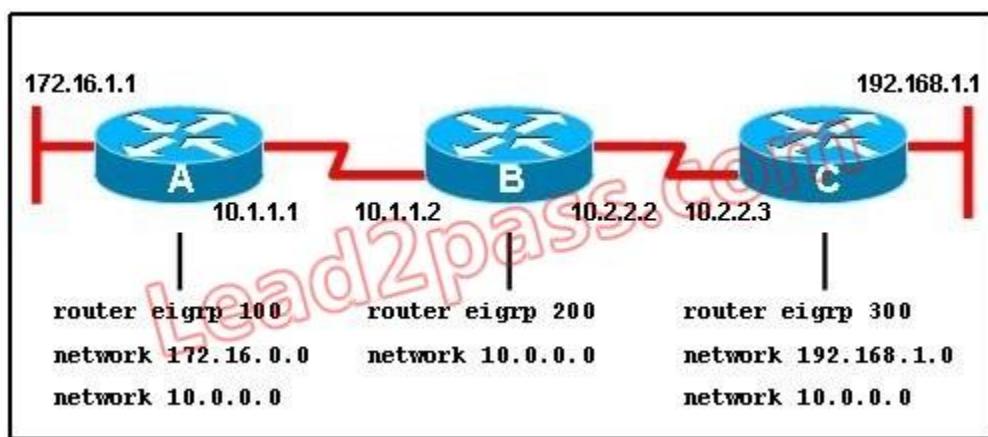
Answer: A

Explanation:

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 182

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

Answer: A

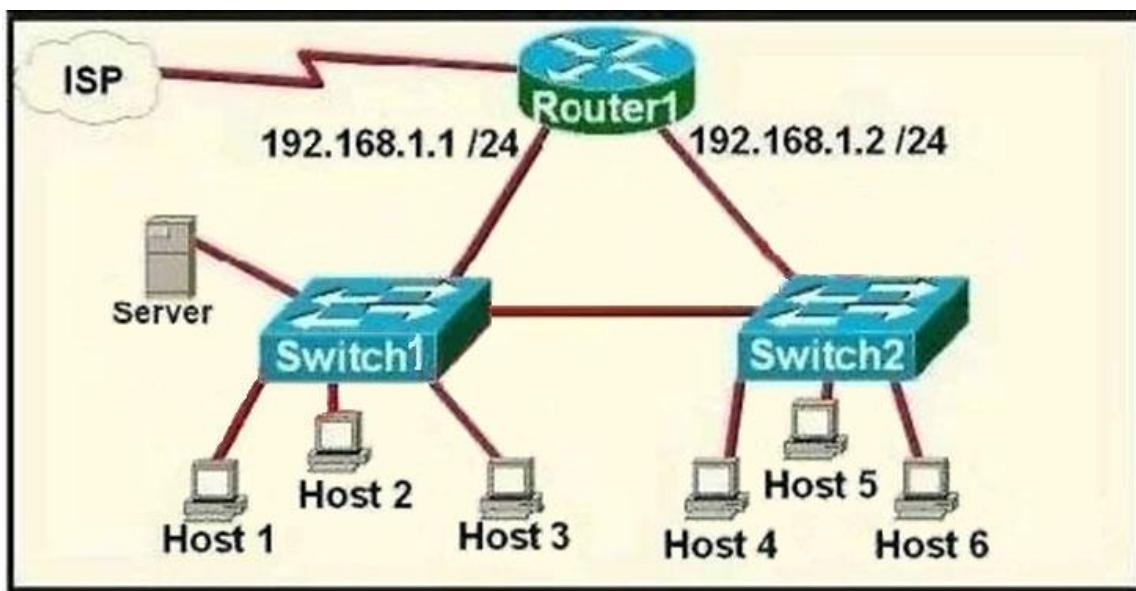
Explanation:

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 183

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.

Answer: C

Explanation:

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 184

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.

- R1:** Ethernet0 is up, line protocol is up
 Internet address 192.168.1.2/24, Area 0
 Process ID 1, Router ID 192.168.31.33, Network Type BROADCAST, Cost: 10
 Transmit Delay is 1 sec, State DR, Priority 1
 Designated Router (ID) 192.168.31.33, Interface address 192.168.1.2
 No backup designated router on this network
 Timer intervals configured, Hello 5, Dead 20, Wait 20, Retransmit 5
- R2:** Ethernet0 is up, line protocol is up
 Internet address 192.168.1.2/24, Area 0
 Process ID 2, Router ID 192.168.31.11, Network Type BROADCAST, Cost: 10
 Transmit Delay is 1 sec, State DR, Priority 1
 Designated Router (ID) 192.168.31.11, Interface address 192.168.1.1
 No backup designated router on this network
 Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5

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

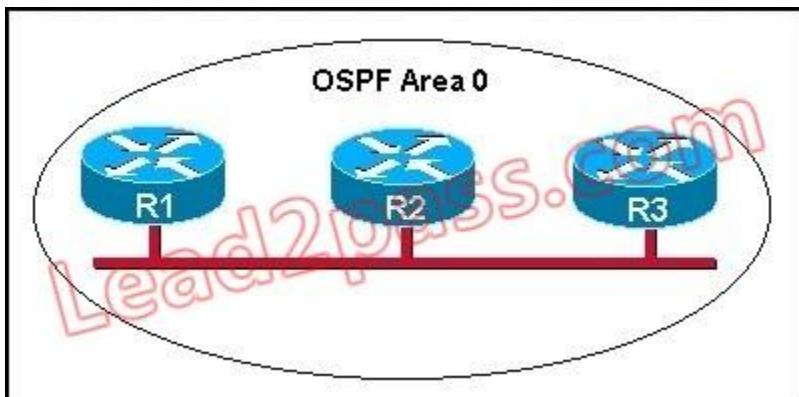
Answer: D

Explanation:

In OSPF, the hello and dead intervals must match and here we can see the hello interval is set to 5 on R1 and 10 on R2. The dead interval is also set to 20 on R1 but it is 40 on R2.

QUESTION 185

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.

Answer: DF

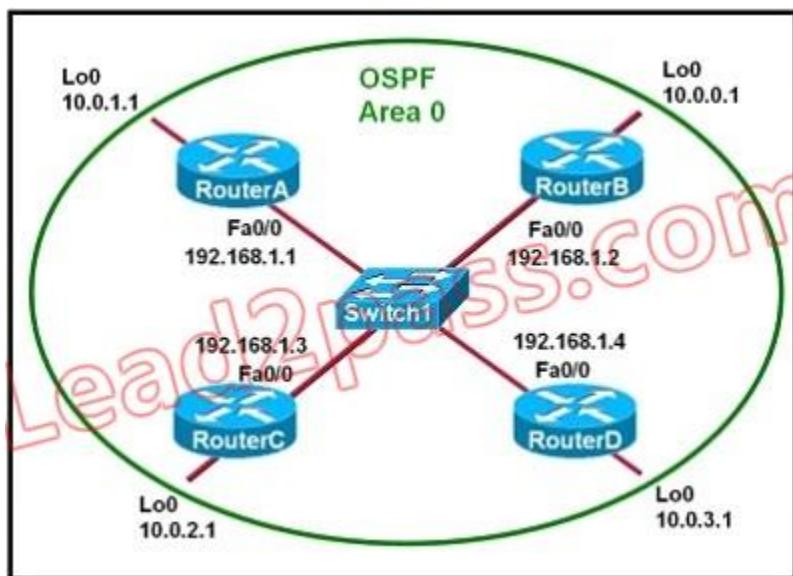
Explanation:

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 186

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.

Answer: BC

Explanation:

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 187

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

Answer: DE

QUESTION 188

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.

Answer: CE

Explanation:

VLAN Trunk Protocol (VTP) reduces administration in a switched network. When you configure a new VLAN on one VTP server, the VLAN is distributed through all switches in the domain. This reduces the need to configure the same VLAN everywhere.

QUESTION 189

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.

Answer: AE

QUESTION 190

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.

Answer: BDE

Explanation:

To communicate between two different VLANs we need to use a Layer 3 device like router or Layer 3 switch -> B is correct.

VLANs don't affect the number of collision domains, they are the same -> C is not correct.

Typically, VLANs increase the number of broadcast domains.

We must use a different network (or sub-network) for each VLAN. For example we can use 192.168.1.0/24 for VLAN 1, 192.168.2.0/24 for VLAN 2 -> D is correct.

A switch maintains a separate bridging table for each VLAN so that it can send frame to ports on the same VLAN only. For example, if a PC in VLAN 2 sends a frame then the switch look-ups its bridging table and only sends frame out of its ports which belong to VLAN 2 (it also sends this frame on trunk ports) -> E is correct.

QUESTION 191

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

Answer: C

Explanation:

A router ID is determined in the following order:

1. using the router-id command under the OSPF process to statically configure the router ID.
2. using the highest IP address of the router's loopback interfaces.
3. using the highest IP address of the router's active physical interfaces.

QUESTION 192

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.

Answer: AC

QUESTION 193

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

Answer: AB

Explanation:

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.

One or more standby routers: There can be one or more Standby Routers.

QUESTION 194

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.

Answer: C

Explanation:

Router#show ip dhcp binding - Displays a list of all bindings created.

QUESTION 195

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

Answer: A

Explanation:

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 196

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

Answer: D

Explanation:

Multicast: FF00/8 -- FF00:: - FFFF::

Global Unicast: 2000::/3, 2001::/3, 2002::/4, 2001:db8::/32

Link Local Unicast: FE80::/10 -- FE80:: - FEBF::
Unique Local Unicast: FC00::/7 -- FC00:: - FDFF::
Loopback: ::1/128

QUESTION 197

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

- A. The seventh bit of 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

Answer: A

Explanation:

The EUI-64 format interface ID is derived from the 48-bit MAC address by inserting the hexadecimal number fffe between the upper 3 bytes (OUI field) and the lower 3 vendor assigned bytes of the MAC address. Then, the seventh bit of the first octet is inverted. (In a MAC address, this bit indicates the scope and has a value of 1 for global scope and 0 for local scope; it will be 1 for globally unique MAC addresses. In the EUI-64 format, the meaning of this bit is opposite, so the bit is inverted.)

QUESTION 198

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

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

Answer: C

QUESTION 199

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

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

Answer: B

Explanation:

This text appears to be from a L3 switch. On a router there is no need to turn on (config)# "ip routing" first and then the default route command.

QUESTION 200

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. ensures that NAT is not required to reach the internet with private range addressing
- D. enable secure communications to the internet for all external hosts

Answer: A

QUESTION 201

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

Answer: D

QUESTION 202

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

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

Answer: C

QUESTION 203

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

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

physical network.

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

Answer: AD

QUESTION 204

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 enables easy autodiscovery of network elements in a brownfield deployment.
- C. It is designed primarily to provide network assurance.
- D. It supports high availability for management functions when operating in cluster mode.

Answer: A

QUESTION 205

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.

Answer: C

Explanation:

Frame flooding would be restricted to the devices that are in that VLAN. With a potential loop issue the flooding could occur from the switch NOT having a device match nor location in the MAC table. B would describe a broadcast.

QUESTION 206

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

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

Answer: C

Explanation:

SLAAC stands for Stateless Address Autoconfiguration and the name pretty much explains what it does. It is a mechanism that enables each host on the network to auto-configure a unique IPv6 address without any device keeping track of which address is assigned to which node.

QUESTION 207

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.

Answer: AC

Explanation:

The channels for 5 GHz are 36, 40, 44, 48. For 5 GHz, you can set channels to Automatic, 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140, 149, 153, 157, 161, or 165.

For the 5 GHz radio, up to 23 non-overlapping channels are offered.

<https://www.cisco.com/c/en/us/support/docs/smb/wireless/CB-Wireless-Mesh/2069-tz-Changing-RF-Channels.html>

QUESTION 208

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

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

Answer: B

QUESTION 209

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

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

Answer: BD

QUESTION 210

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

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

Answer: D

Explanation:

The Control And Provisioning of Wireless Access Points is a point to point tunnel between the AP's you deploy out in the office space and the central WLC device sitting in your datacentre.

QUESTION 211

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

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

Answer: AB

Explanation:

Access: Provides a connection point (access) for end-user devices. Does not forward frames between two other access switches under normal circumstances.

Distribution: Provides an aggregation point for access switches, providing connectivity to the rest of the devices in the LAN, forwarding frames between switches, but not connecting directly to end-user devices.

The distribution layer is where redistribution of routing protocols should be performed. It should never be performed at the core or access layer.

Core: Aggregates distribution switches in very large campus LANs, providing very high forwarding rates for the larger volume of traffic due to the size of the network.

Only switching between campus (distribution) switches should be performed at the core layer.

Nothing should be done to slow down forwarding of traffic, such as using ACLs, supporting clients, or routing between VLANs.

Core layer switches are commonly set up in a star topology. This is because core layer switches connect multiple campuses via distribution layer switches.

QUESTION 212

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

Answer: D

Explanation:

Global unicast addresses (GUAs), also known as aggregatable global unicast addresses, are globally routable and reachable in the IPv6 Internet. They are equivalent to public IPv4 addresses. They play a significant role in the IPv6 addressing architecture.

QUESTION 213

A corporate office uses four floors in a building.

- Floor 1 has 24 users.
- Floor 2 has 29 users.
- Floor 3 has 28 users.
- Floor 4 has 22 users.

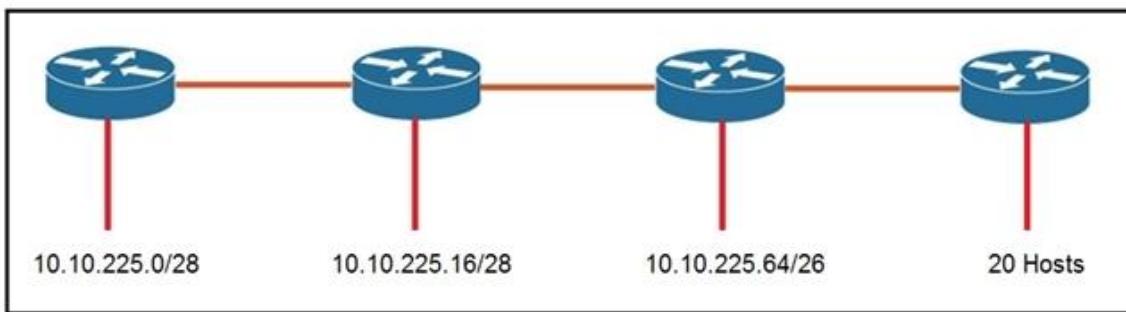
Which subnet summarizes and gives the most efficient distribution of IP addresses for the router configuration?

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

Answer: C

QUESTION 214

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

Answer: D

Explanation:

Find the subnet mask

- * To have 20 User in a subnet We have to use /27 prefix
- * So Host count for /27 prefix is $(2^5-2)=30$
- * Subnet Mask for /27 prefix is (sum of Network bits $(128+64+32)=224$, so 255.255.255.224)

Find the network ID

- * As per the /27 prefix each subnet has 30 host and 32 including network ID & Broadcast ID
- * so first network ID is 10.10.255.0 and the second will be 10.10.255.32

QUESTION 215

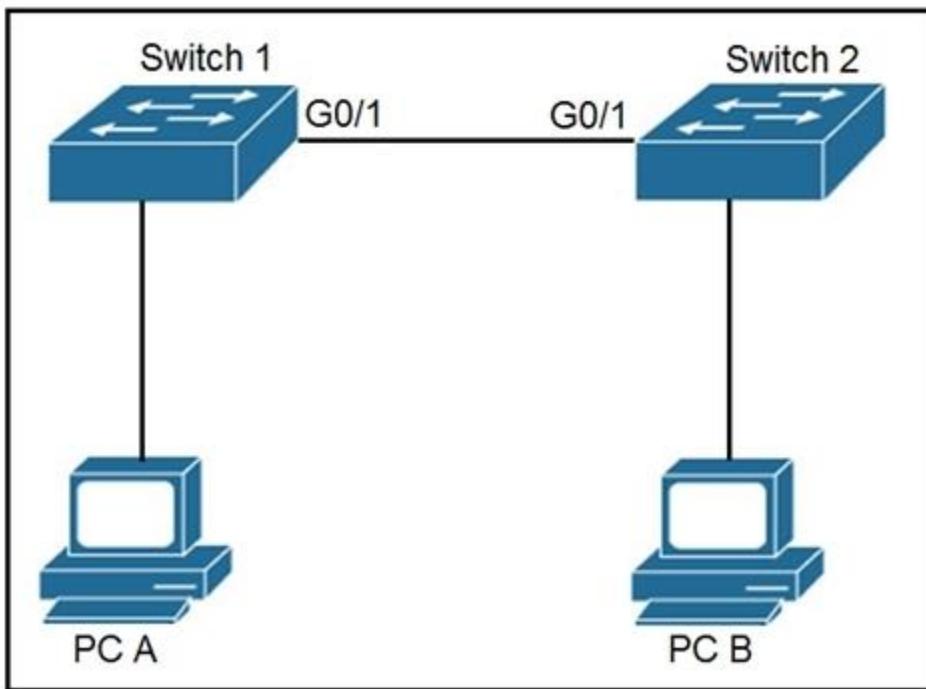
What is a characteristic of spine-and-leaf architecture?

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

Answer: D

QUESTION 216

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

Answer: D

Explanation:

Native VLAN: The native VLAN is the one into which untagged traffic will be put when it's received on a trunk port. This makes it possible for your VLAN to support legacy devices or devices that don't tag their traffic like some wireless access points and simply network attached devices.

QUESTION 217

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

- A. interface GigabitEthernet0/0/1
channel-group 10 mode auto
- B. interface GigabitEthernet0/0/1
channel-group 10 mode on
- C. interface port-channel 10
no switchport

- ip address 172.16.0.1 255.255.255.0
- D. interface GigabitEthernet0/0/1
channel-group 10 mode active
- E. interface port-channel 10
switchport
switchport mode trunk

Answer: CD

QUESTION 218

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

Answer: AC

Explanation:

PAgP- Disirable/Auto (Link formation)

LACP- Active/Active or Active/Passive (Link formation)

QUESTION 219

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.

Answer: B

QUESTION 220

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

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

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

Answer: C

QUESTION 221

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

SW1#show spanning-tree vlan 30

VLAN0030

Spanning tree enabled protocol rstp

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

[Output suppressed]

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

Answer: AE

QUESTION 222

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

Answer: A

Explanation:

cdp is cisco-proprietary whereas lldp is open standard. as well as cdp is enabled by default in all cisco devices.

QUESTION 223

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

Answer: B

Explanation:

Authentication, Identify users
Authorization, access control
Accounting, track user services

QUESTION 224

What is difference between RADIUS and TACACS+?

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

Answer: B

Explanation:

RADIUS combines authentication and authorization. The access-accept packets sent by the RADIUS server to the client contain authorization information. This makes it difficult to decouple authentication and authorization.

TACACS+ uses the AAA architecture, which separates AAA. This allows separate authentication solutions that can still use TACACS+ for authorization and accounting. For example, with TACACS+, it is possible to use Kerberos authentication and TACACS+ authorization and accounting.

QUESTION 225

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

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

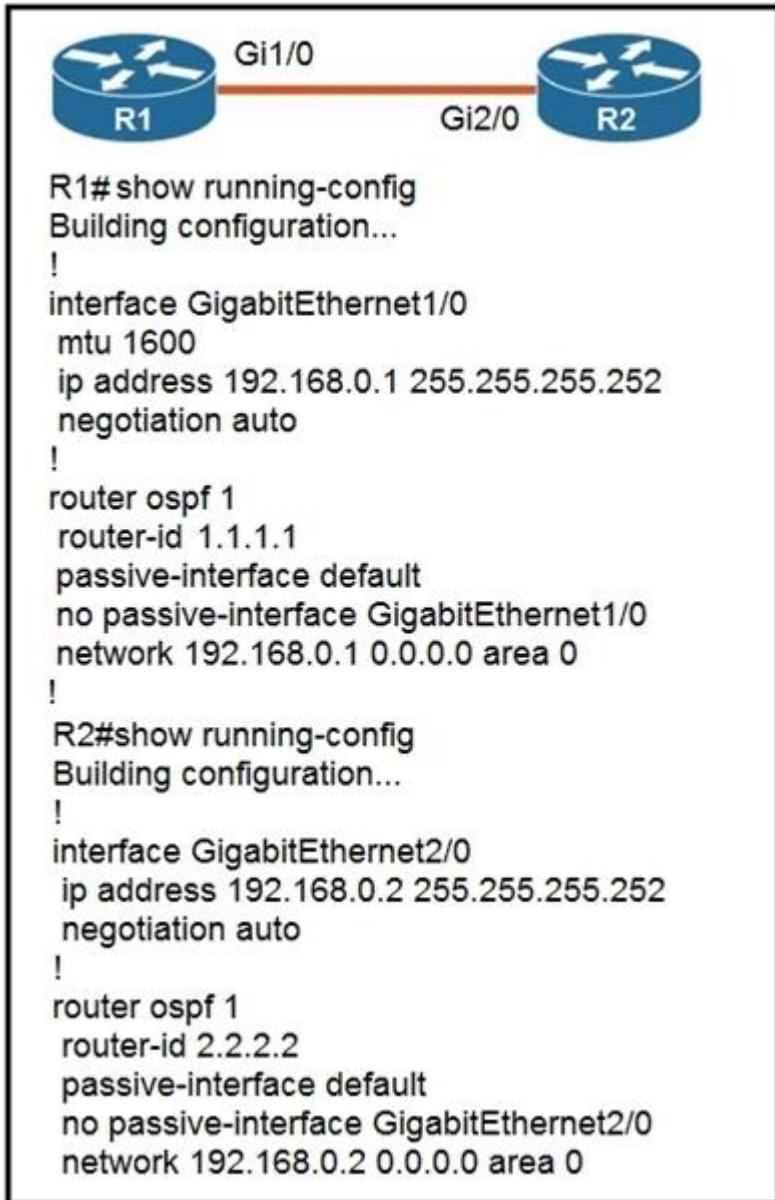
Answer: A

Explanation:

In local mode, an AP creates two CAPWAP tunnels to the WLC. One is for management, the other is data traffic. This behavior is known as "centrally switched" because the data traffic is switched(bridged) from the ap to the controller where it is then routed by some routing device.
<https://community.cisco.com/t5/wireless-and-mobility/what-s-the-difference-between-local-mode-and-flex-connect-mode/td-p/2532657>

QUESTION 226

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



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

Answer: C

Explanation:

If the Interface MTU field in the Database Description packet indicates an IP datagram size that is larger than the router can accept on the receiving interface without fragmentation, the Database Description packet is rejected.

QUESTION 227

Refer to the exhibit. Router R1 is running three different routing protocols. Which route

characteristic is used by the router to forward the packet that it receives for destination IP 172.16.32.1?

R1# show ip route

```
....  

D 172.16.32.0/27      [90/2888597172] via 20.1.1.1  

O 172.16.32.0/19      [110/292094] via 20.1.1.10  

R 172.16.32.0/24      [120/2] via 20.1.1.3
```

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

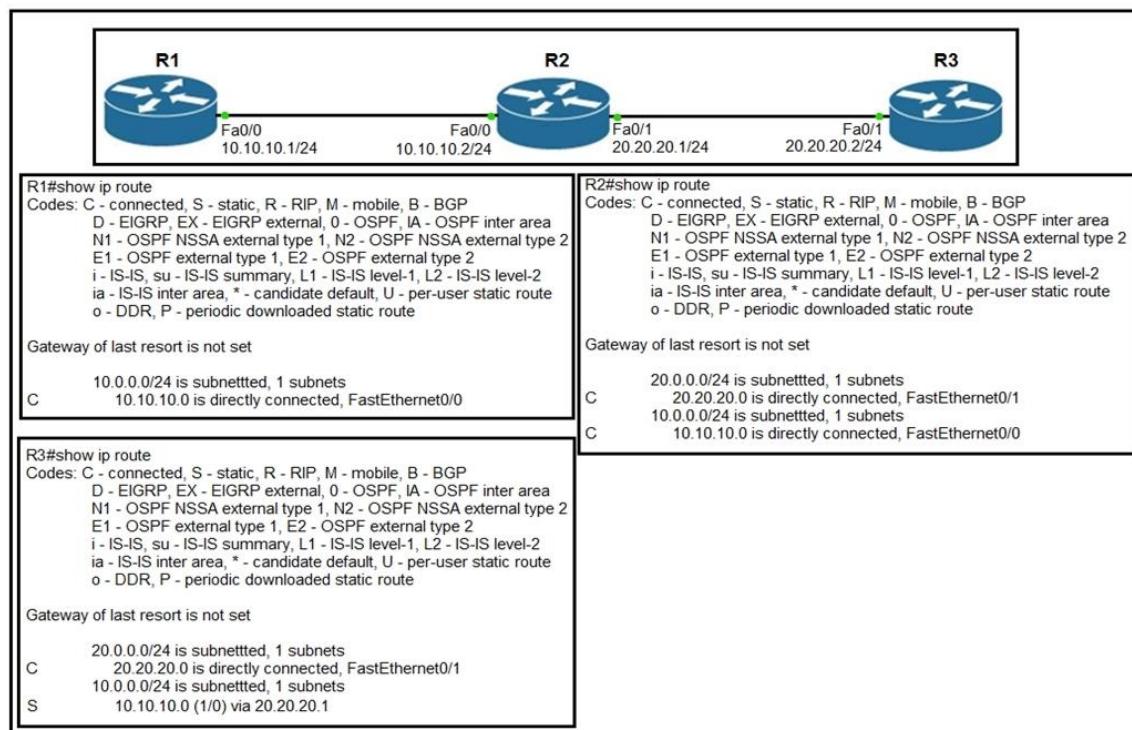
Answer: A

Explanation:

/27 is the Highest prefix inclusive of the destination IP address therefore the router uses that route based on the Longest Prefix First rule.

QUESTION 228

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



- A. set the default gateway as 20.20.20.2

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

Answer: C

QUESTION 229

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

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

Answer: A

Explanation:

EIGRP uses the minimum bandwidth on the path to a destination network and the total delay to compute routing metrics.

QUESTION 230

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

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

Answer: B

Explanation:

10.10.1.20 /30

20 = .000101[00] network

21 = .000101[01] host

22 = .000101[10] host

23 = .000101[11] broadcast

QUESTION 231

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

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

- A. It chooses the EIGRP route because it has the lowest administrative distance.
- B. It load-balances traffic between all three routes.

- C. It chooses the OSPF route because it has the longest prefix inclusive of the destination address.
- D. It selects the RIP route because it has the longest prefix inclusive of the destination address.

Answer: D

Explanation:

<https://subnet.ninja/calculator-results/>

192.168.12.16 is outside OSPF 192.168.12.0/28 and would not be a usable IP address in 192.168.12.16/28 network.

Would work for RIP as it is a 30 IP address range.

QUESTION 232

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

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

Answer: AC

Explanation:

Floating static routes are static routes that have an administrative distance greater than the administrative distance of dynamic routes. Administrative distances can be configured on a static route so that the static route is less desirable than a dynamic route. In this manner, the static route is not used when the dynamic route is available. However, if the dynamic route is lost, the static route can take over, and traffic can be sent through this alternate route. If this alternate route is provided using a DDR interface, then that interface can be used as a backup mechanism. Used when primary route is Not available.

QUESTION 233

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

R1# show ip route

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

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

Answer: B

Explanation:

1. Longest Prefix
 2. Administrative distance
 3. Metric
- <https://packetlife.net/blog/2010/aug/16/route-preference/>

QUESTION 234

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)

IBGP route 10.0.0.0/30
RIP route 10.0.0.0/30
OSPF route 10.0.0.0/16
OSPF route 10.0.0.0/30
EIGRP route 10.0.0.1/32

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

Answer: AD

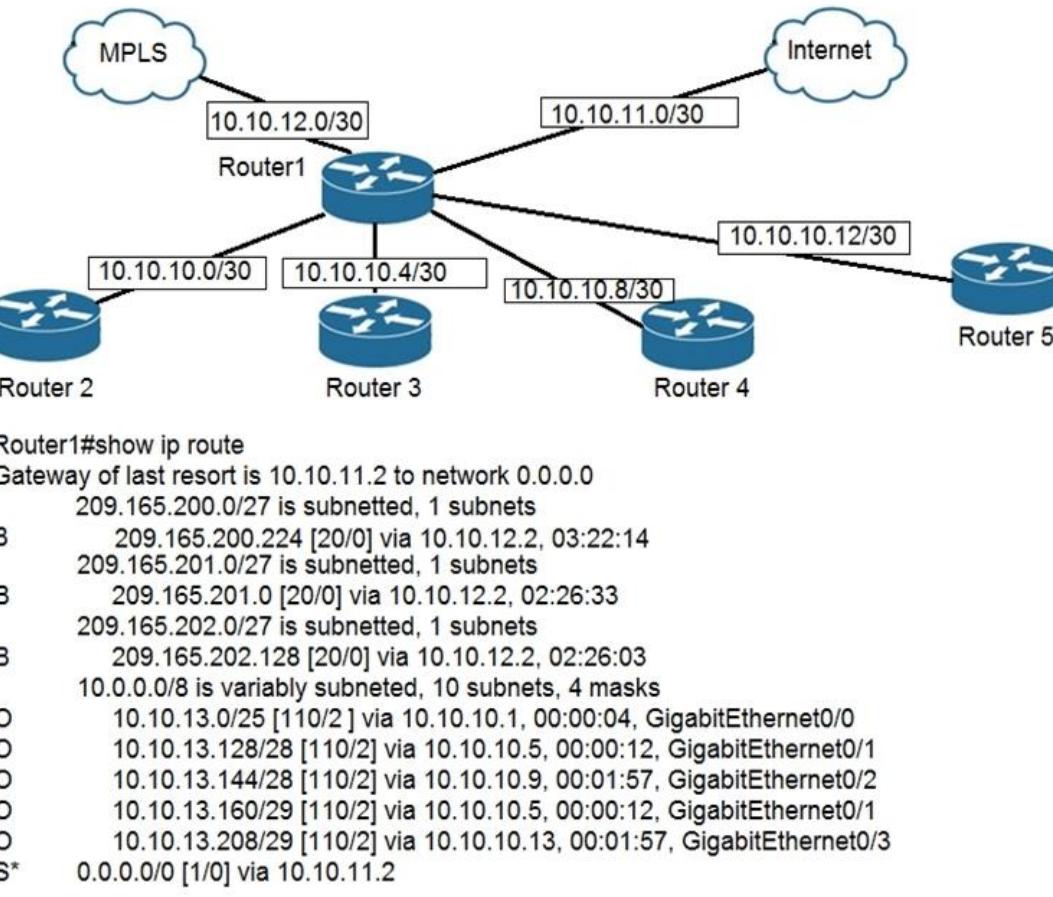
Explanation:

One will be selected among the three /30 mask, other one will be /16 mask and last one will be /32 mask.

Among the three /30 mask routes, OSPF will be selected since OSPF has lowest AD which is 110 whereas RIP has AD value of 120 and iBGP has AD value of 200.

QUESTION 235

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



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

Answer: B

Explanation:

To reach the host 10.10.13.165 the router choose the route OSPF 10.10.13.160/29 (from 10.10.13.160 to 10.10.13.167) because include the destination address. Now Router 3 is the next hop for this route because the network between Router1 and Router3 it's a 10.10.10.4/30 (from 10.10.10.4 to 10.10.10.7 usable ip for host are .5 and .6) therefore Router3 is the next hop that you see in the routing table of Router1 == 10.10.10.5.

QUESTION 236

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

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

Answer: C

Explanation:

Route Preference:

1. Longest Prefix
2. Administrative Distance
3. Metric

In this specific question, the first option is: Administrative Distance.

QUESTION 237

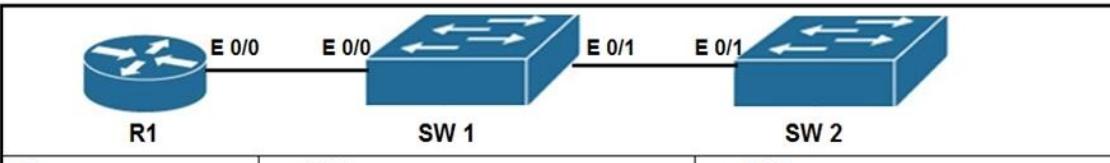
Which two minimum parameters must be configured on an active interface to enable OSPFv2 to operate? (Choose two.)

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

Answer: AE

QUESTION 238

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:
<pre>interface Ethernet0/0 no ip address !</pre>	<pre>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</pre>	<pre>interface Ethernet0/1 switchport trunk encapsulation dot1q switchport mode trunk ! interface Ethernet0/2 switchport access vlan 20 switchport mode access</pre>

- 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

Answer: B

Explanation:

For a Router on a stick, you need to:

1. create a sub-interface
2. encapsulate dot1q with the VLAN ID
3. Assign an IP address

QUESTION 239

Which function does an SNMP agent perform?

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

Answer: A

Explanation:

<https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/snmp/configuration/xe-16/snmp-xe-16-book/nm-snmp-cfg-snmp-support.html>

QUESTION 240

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

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

Answer: BD

QUESTION 241

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

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

Answer: B

Explanation:

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 242

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

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

- D. An ICMP connection has been built

Answer: B

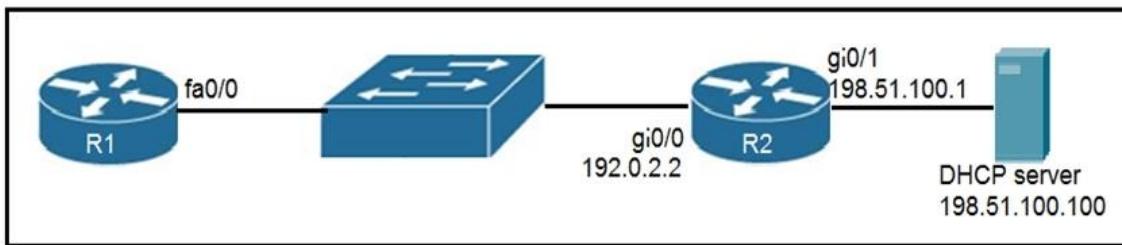
Explanation:

- 0 Emergencies System shutting down due to missing fan tray
- 1 Alerts Temperature limit exceeded
- 2 Critical Memory allocation failures
- 3 Errors Interface Up/Down messages
- 4 Warnings Configuration file written to server, via SNMP request
- 5 Notifications Line protocol Up/Down
- 6 Information Access-list violation logging
- 7 Debugging Debug messages

QUESTION 243

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

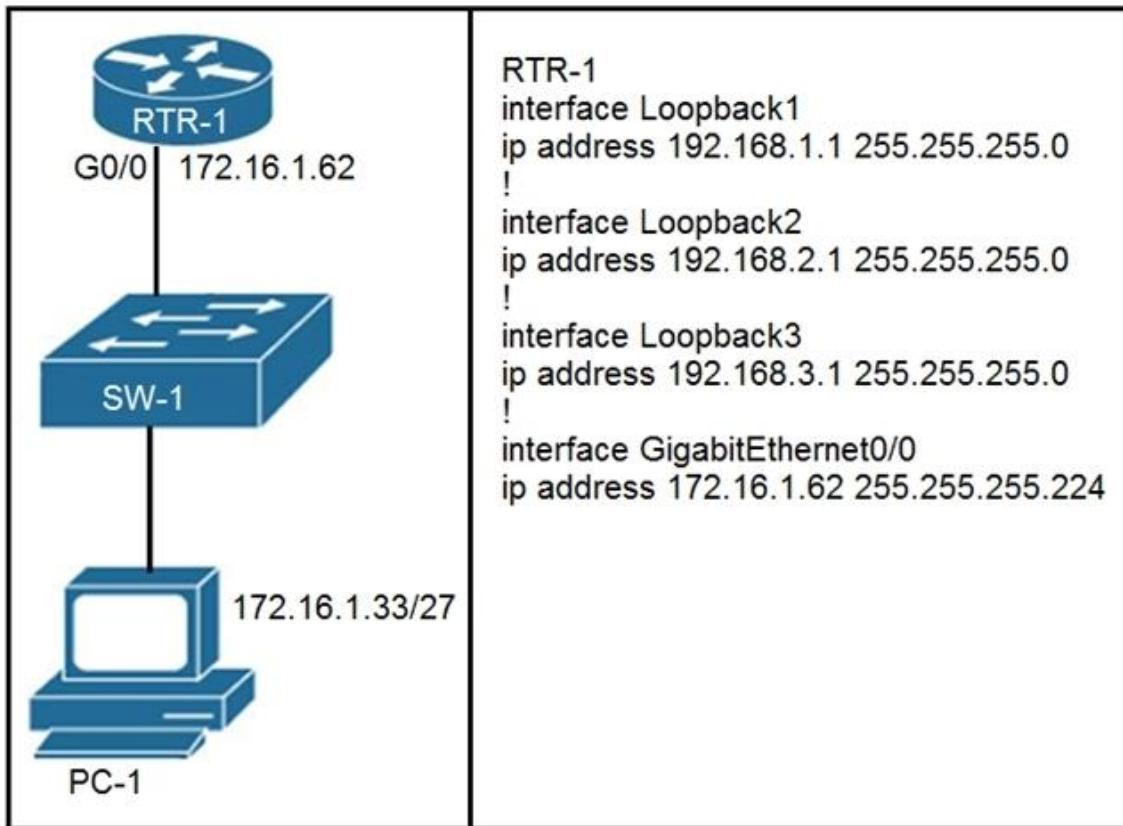
Answer: BC

Explanation:

Note that DHCP server is behind R2 and R1 needs IP via DHCP. Therefore, R2 needs to be a relay agent. On R1 interface, ip address dhcp and R2 inside interface, ip helper-address 192.168.100.100 (dhcp server).

QUESTION 244

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



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

interface GigabitEthernet0/0
ip access-group 100 in

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

line vty 0 15
access-class 100 in

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

interface GigabitEthernet0/0
ip access-group 100 in

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

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

Answer: B

QUESTION 245

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

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

Answer: BE

Explanation:

Traffic might be permitted if the permit statement is too broad, meaning that you are allowing more traffic than what is specifically needed, or if the matching permit statement is placed ahead of the deny traffic. Routers will look at traffic and compare it to the ACL and once a match is found, the router acts accordingly to that rule.

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

Answer: A

QUESTION 247

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

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

Answer: A

Explanation:

WPA3 uses simultaneous authentication of equals (SAE) encryption and allows only WiFi devices that support WPA3 to join the virtual access point (VAP).

QUESTION 248

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

```
ip arp inspection vlan 2-10
interface fastethernet 0/1
    ip arp inspection trust
```

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

Answer: C

Explanation:

Routers are networking devices that are under Administrative control. Hence, they are configured Trusted in DAI and DHCP Snooping.

QUESTION 249

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

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

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

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

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

- A. SW1
- B. SW2

- C. SW3
- D. SW4

Answer: C

Explanation:

Keyword local authentication: "login local" configuration

Keyword cryptographic hash: "secret" configuration

Keyword SSH access: "live vty 0 15" configuration

QUESTION 250

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

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

Answer: A

QUESTION 251

How does Cisco DNA Center gather data from the network?

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

Answer: D

Explanation:

Local Network Telemetry: Cisco DNA Center collects data from several different sources and protocols on the local network, including the following: traceroute; syslog; NetFlow; Authentication, Authorization, and Accounting (AAA); routers; Dynamic Host Configuration Protocol (DHCP); Telnet; wireless devices; Command-Line Interface (CLI); Object IDs (OIDs); IP SLA; DNS; ping; Simple Network Management Protocol (SNMP); IP Address Management (IPAM); MIB; Cisco Connected Mobile Experiences (CMX); and AppDynamics ®. The great breadth and depth of data collection allows Cisco DNA Center to give a clearer picture of the state of the network, clients, and applications. This data is kept on the Cisco DNA Center appliance locally (at your location) and is available for a period of 14 days. Local Network Telemetry is not transported to any other server nor is it sent to the cloud.

QUESTION 252

Drag and Drop Question

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

Answer Area

configure 802.1x authenticate

configure DHCP snooping

configure the native VLAN with a nondefault VLAN ID

disable DTP

802.1q double-tagging VLAN-hopping attack

MAC flooding attack

man-in-the-middle spoofing attack

switch-spoofing VLAN-hopping attack

Answer:**Answer Area**

configure the native VLAN with a nondefault VLAN ID

configure DHCP snooping

configure 802.1x authenticate

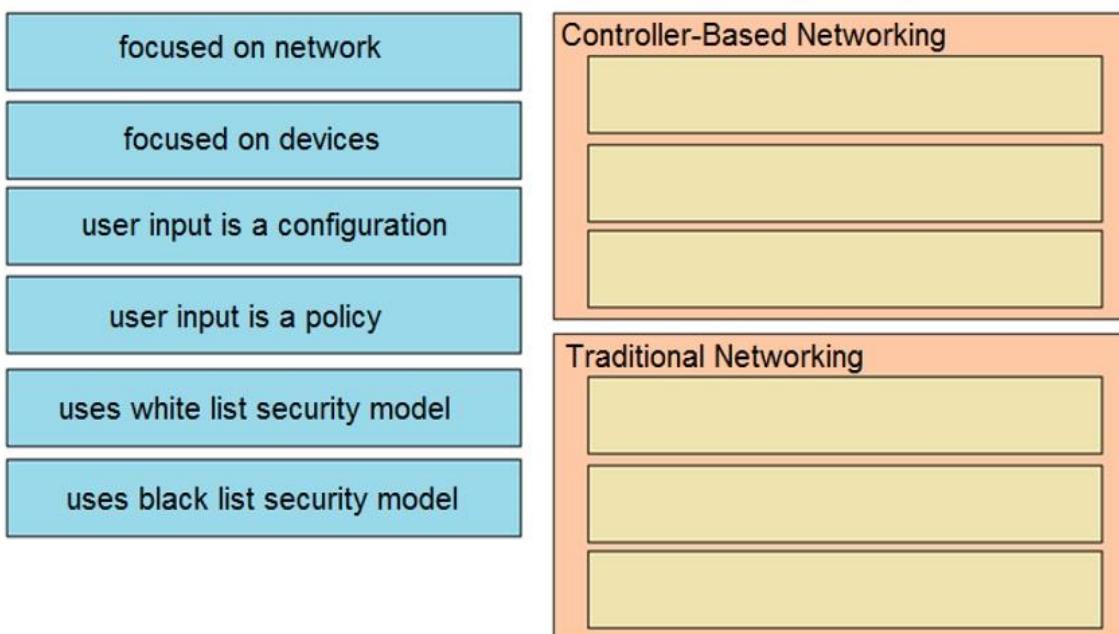
disable DTP

QUESTION 253

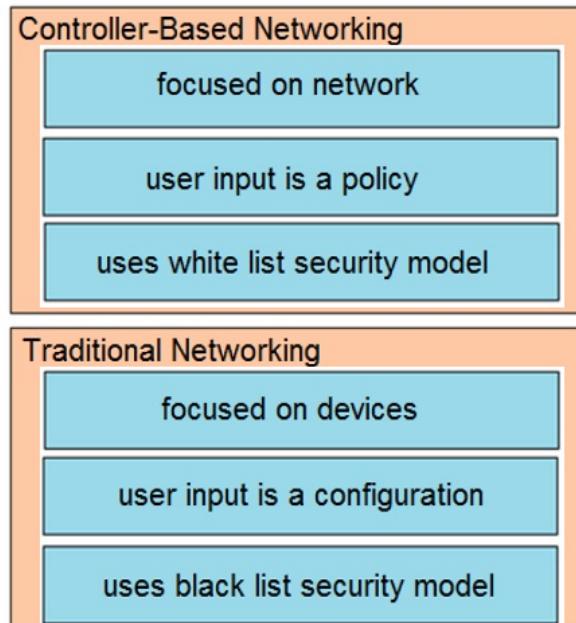
Drag and Drop Question

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

Answer Area

**Answer:**

Answer Area

**QUESTION 254**

Which statement about LLDP is true?

- A. It is a Cisco proprietary protocol
- B. It is configured in global configuration mode.
- C. The LLDP update frequency is a fixed value.
- D. It runs over the transport layer.

Answer: B

Explanation:

LLDP is for support with non-Cisco devices, runs on the data link layer, and lldp timer has a configurable range from 5 to 65534 sec, commands configured only from conf t.

QUESTION 255

What are two benefits of private IPv4 IP addresses? (Choose two.)

- A. They are routed the same as public IP addresses.
- B. They are less costly than public IP addresses.
- C. They can be assigned to devices without Internet connections.
- D. They eliminate the necessity for NAT policies.
- E. They eliminate duplicate IP conflicts.

Answer: BC

QUESTION 256

What is the authoritative source for an address lookup?

- A. a recursive DNS search
- B. the operating system cache
- C. the ISP local cache
- D. the browser cache

Answer: A

QUESTION 257

What are two benefits that the UDP protocol provide for application traffic?(Choose two)

- A. UDP traffic has lower overhead than TCP traffic
- B. UDP provides a built-in recovery mechanism to retransmit lost packets.
- C. The CTL field in the UDP packet header enables a three-way handshake to establish the connection
- D. UDP maintains the connection state to provide more stable connections than TCP.
- E. The application can use checksums to verify the integrity of application data

Answer: AE

QUESTION 258

Which two goals reasons to implement private IPv4 addressing on your network? (Choose two)

- A. Comply with PCI regulations
- B. Conserve IPv4 address
- C. Reduce the size of the forwarding table on network routers

- D. Reduce the risk of a network security breach
- E. Comply with local law

Answer: BD

QUESTION 259

Which command is used to verify the DHCP relay agent address that has been set up on your Cisco IOS router?

- A. show ip interface brief
- B. show ip dhcp bindings
- C. show ip route
- D. show ip interface
- E. show interface
- F. show ip dhcp pool

Answer: D

Explanation:

With that command you can see if the helper address (dhcp relay) is configured.

```
Router1#sh ip interface g0/0
GigabitEthernet0/0 is up, line protocol is up (connected)
Internet address is 10.0.0.1/30
Broadcast address is 255.255.255.255
Address determined by setup command
MTU is 1500 bytes
Helper address is 192.168.4.2
```

QUESTION 260

Drag and Drop Question

Drag and drop the characteristics of a cloud environment from the left onto the correct examples on the right.

multitenancy	One or more clients can be hosted with the same physical or virtual infrastructure
on-demand	Resources can be added and removed as needed to support current workload and tasks
resiliency	Tasks can be migrated to different physical locations to increase efficiency or reduce cost.
scalability	Resources are dedicated only when necessary instead of on a permanent
workload movement	Tasks and data residing on a failed server can be seamlessly migrated to other physical resources.

Answer:

multitenancy
scalability
workload movement
on-demand
resiliency

QUESTION 261

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.

Answer: D

Explanation:

A first hop redundancy protocol (FHRP) is a computer networking protocol which is designed to protect the default gateway used on a subnetwork by allowing two or more routers to provide backup for that address; in the event of failure of an active router, the backup router will take over.

QUESTION 262

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

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

Answer: D

Explanation:

Netflow although related to security generally is just a data collection protocol whereas the whole point of SNMPv3 is that it's hardened.

QUESTION 263

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.

Answer: C

Explanation:

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

QUESTION 264

The SW1 interface g0/1 is in the down/down state. What are two reasons for the interface condition? (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

Answer: BE

Explanation:

The interface is shut down - ADMIN DOWN / DOWN

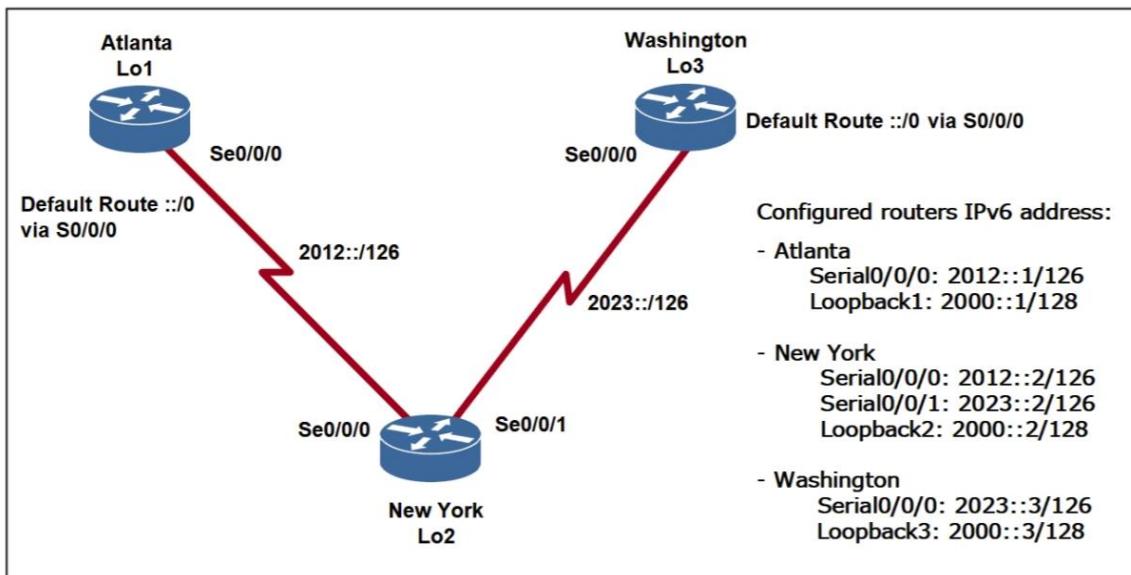
The interface is error-disabled - DOWN / DOWN

There is a speed mismatch - DOWN / DOWN

QUESTION 265

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

Answer: AB

QUESTION 266

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

Answer: B

QUESTION 267

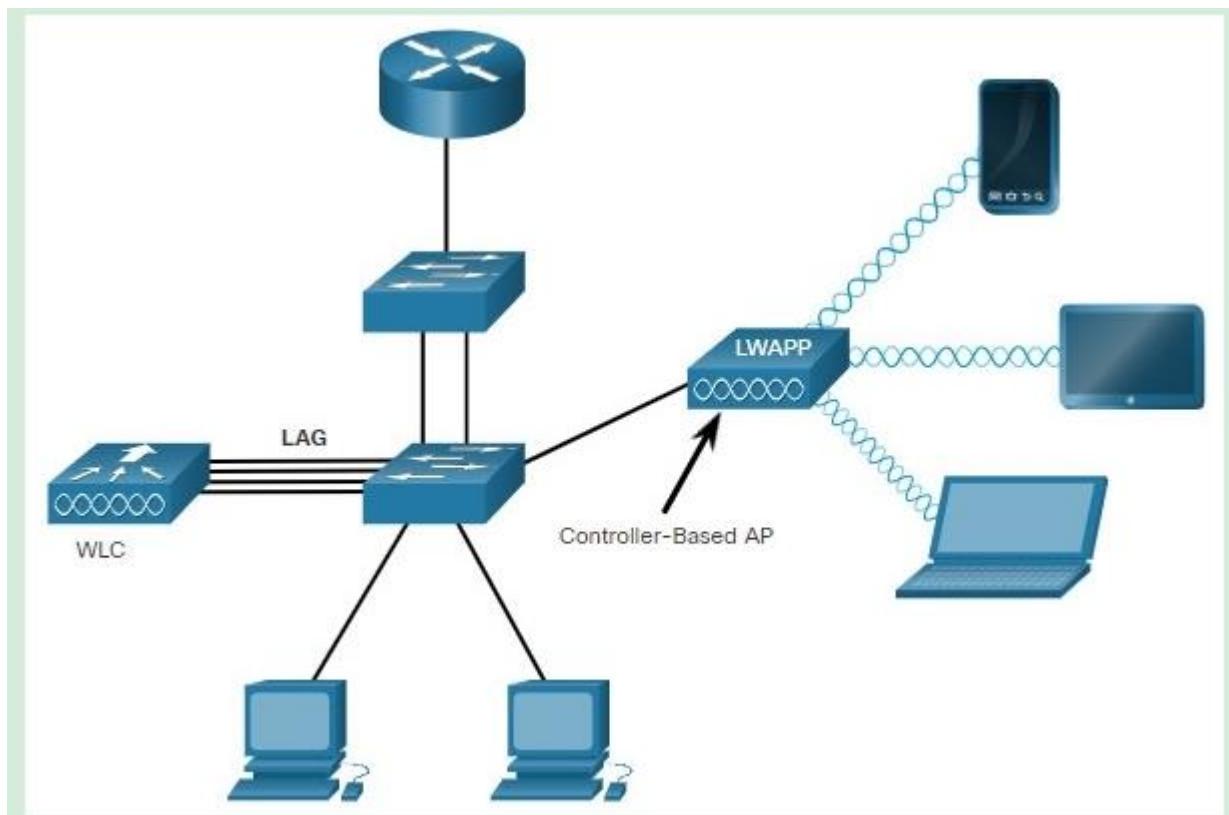
What is a function of Wireless LAN Controller?

- 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

Answer: C

Explanation:

Lightweight APs (LAPs) are devices that 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 268

In which two ways does a password manager reduce the chance of a hacker stealing a user's 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.

Answer: CE

QUESTION 269

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

Answer: A

QUESTION 270

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

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

Answer: A

QUESTION 271

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

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

Answer: D

QUESTION 272

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

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

Answer: A

Explanation:

For private IPv4 to cross Public networks would require some form of tunneling. Private does not route publicly.

QUESTION 273

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

Answer: A

QUESTION 274

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

Answer: D

Explanation:

Collision occurs in the first 64 bytes.

A late collision occurs after the 512th bit (64th byte) of a frame has been transmitted by a device. Anything under 64byte frame is considered a runt.

QUESTION 275

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

Answer: DE

QUESTION 276

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

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

Answer: B

Explanation:

WPA preshared keys must contain 8 to 63 ASCII text characters or 64 hexadecimal characters.

QUESTION 277

An engineer is configuring NAT to translate the source subnet of 10.10.0.0/24 to any one of three addresses: 192.168.3.1, 192.168.3.2, or 192.168.3.3. Which configuration should be used?
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 0.0.0.255
ip nat inside source list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
D. enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.254
ip nat inside source list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

**Answer:** C

#### QUESTION 278

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

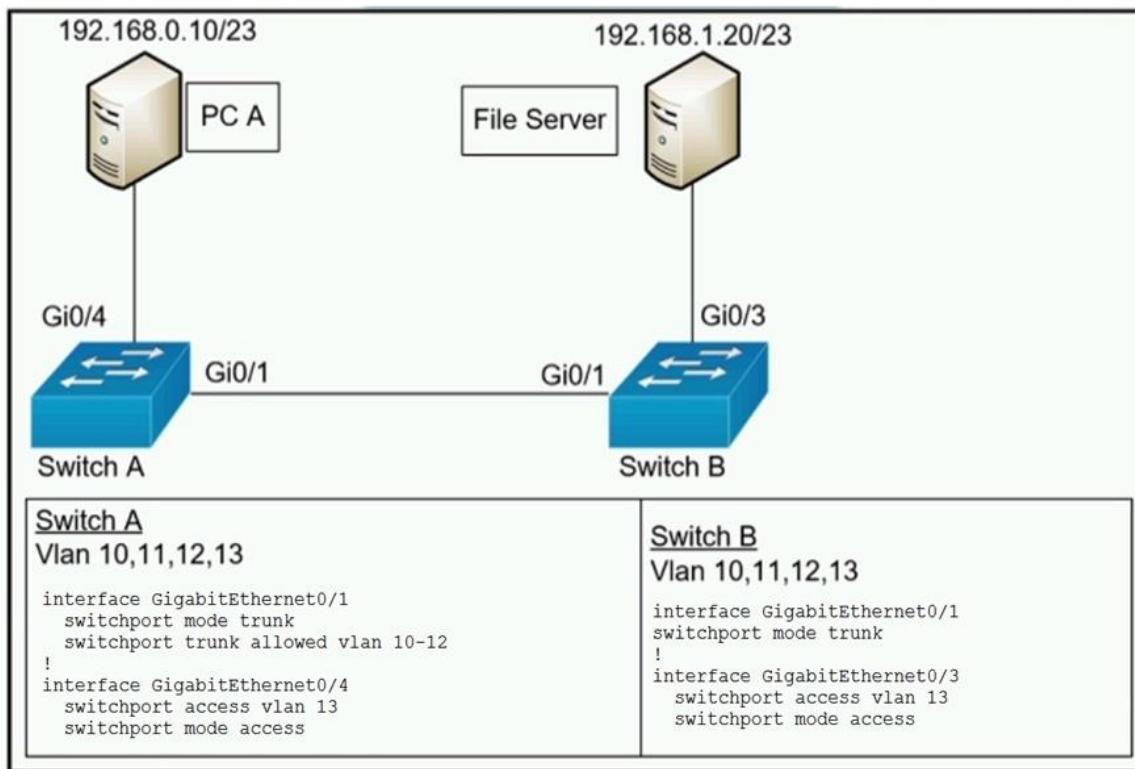
- A. TCP uses checksum, acknowledgement, and retransmissions, and UDP uses checksums only.
- B. TCP uses two-dimensional parity checks, checksums, and cyclic redundancy checks and UDP uses retransmissions only.
- C. TCP uses checksum, parity checks, and retransmissions, and UDP uses acknowledgements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

**Answer:** A

#### QUESTION 279

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 VLAN 10, 11, 12, and 13.  
What is the next step in the configuration?



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

**Answer:** B

**Explanation:**

They are not on different subnets. Subnet 192.168.0.0 /23 has  $2^9 = 512$  hosts, which spans an IP range of 192.168.0.0 - 192.168.1.255. Addresses 192.168.0.10 and 192.168.1.20 are on the same range and their respective interfaces are on the same VLAN. The only problem here is that the trunk link on Switch A doesn't allow VLAN 13, so "B" is correct.

#### QUESTION 280

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. 10.0.1.3
- B. 10.0.1.50
- C. 10.0.1.4
- D. Loopback D

**Answer:** B

**Explanation:**

A /32 prefix represents a host, and this is the highest you can get with ipv4. The next hop is 10.0.1.50 as you can see where it says 'via 10.0.1.50'.

#### QUESTION 281

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.

**Answer:** CD

#### QUESTION 282

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

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

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

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

**Answer:** A

#### QUESTION 283

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

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

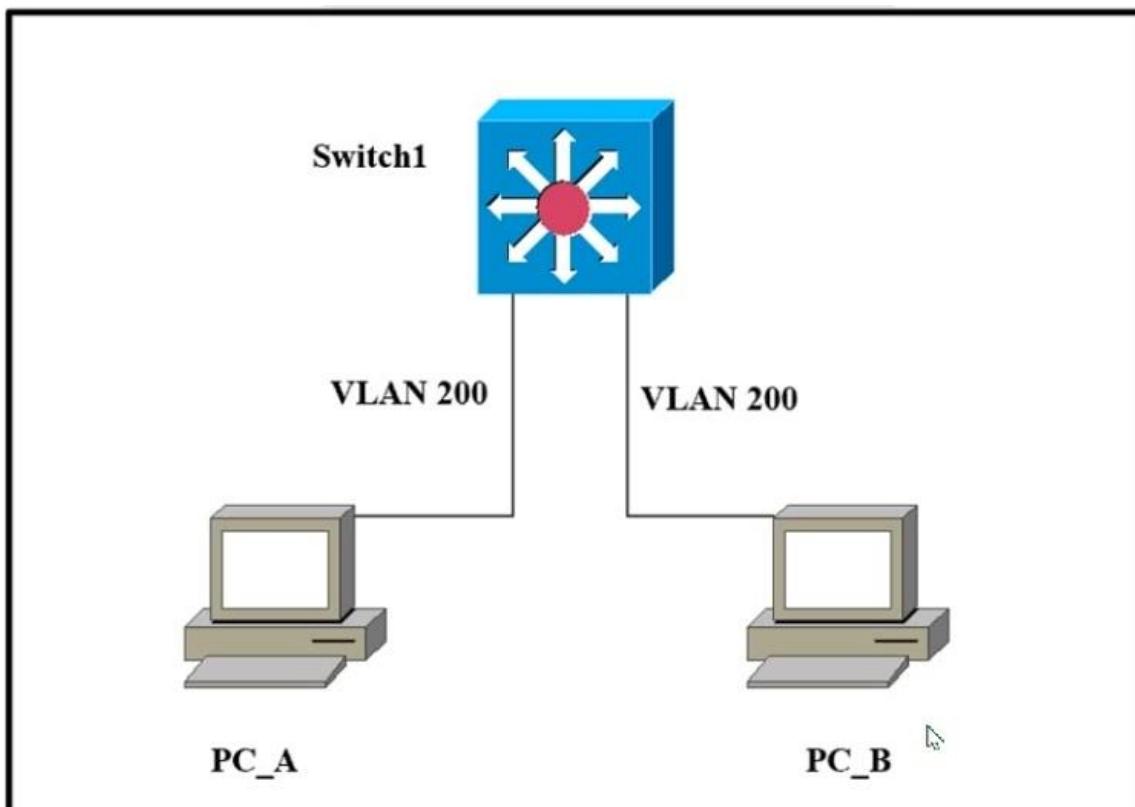
**Answer:** B

**Explanation:**

IPsec does not support multicast, that is why GRE is used with VPN, and as long as the GRE is not fully secure, the whole GRE. Encapsulation can be encapsulated in IPsec header so now we have both "multicast ability and security".

#### QUESTION 284

Refer to the exhibit. Which outcome is expected when PC\_A sends data to PC\_B after their initial communication?



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

**Answer:** C

**Explanation:**

You have a TCP/IP network. This means that PC A and PC B have an IP address each. PC A knows PC B's address and creates an IP packet for PC B. Then, the packet (Layer 3) becomes an Ethernet frame (Layer 2): PC A gets PC B's MAC address and uses it as the destination L2 address.

When the frame arrives at SW1, the switch looks at the destination MAC address and controls (in its MAC table) to which port that address is associated. Then, the switch sends the frame to PC B through that port (forwarding phase).

The switch leaves unchanged BOTH the source and the destination MAC addresses inside the frame.

#### QUESTION 285

What is the purpose of the Cisco DNA Center controller?

- A. to secure physical access to a data center
- B. to scan a network and generate a Layer 2 network diagram
- C. to securely manage and deploy network devices
- D. to provide Layer 3 services to autonomous access points

**Answer:** C

**Explanation:**

Cisco DNA Center is a powerful network controller and management dashboard for secure access to networks and applications. It lets you take charge of your network, optimize your Cisco investment, and lower your IT spending.

Reference:

<https://www.cisco.com/c/en/us/products/collateral/cloud-systems-management/dna-center/nb-06-dna-center-so-cte-en.html>

**QUESTION 286**

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

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

**Answer:** B

**QUESTION 287**

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

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

**Answer:** B

**Explanation:**

HSRP uses Active/Standby

VRRP uses Master/Backup

**QUESTION 288**

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

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

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

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

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

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

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

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

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

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

- A. eBGP
- B. static
- C. OSPF
- D. EIGRP

**Answer:** B

**Explanation:**

Admin Distance:  
Connected - 0  
Static - 1  
eBGP - 5  
iEIGRP - 90  
OSPF - 110

IS-IS - 115

RIP - 120

So the answer is correct based from AD of a statically configured route.

**QUESTION 289**

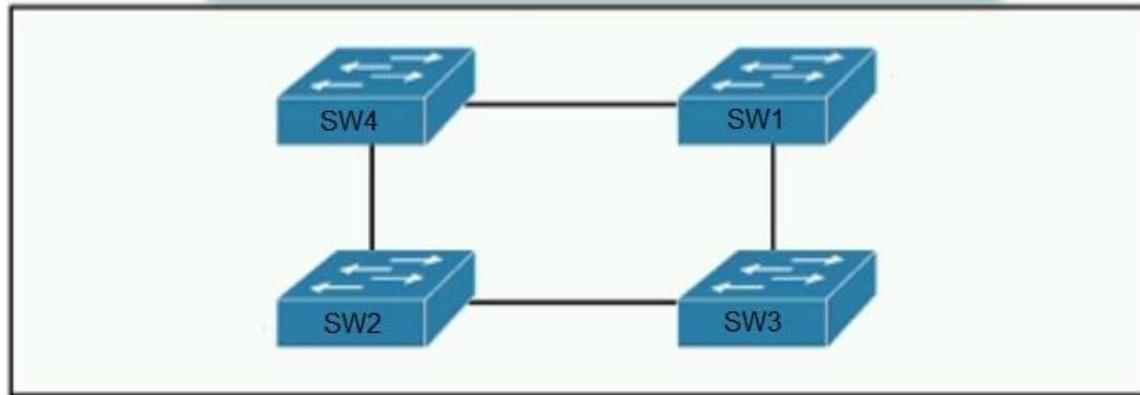
An engineer needs to configure LLDP to send the port description time length value (TLV). What command sequence must be implemented?

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

**Answer:** B

**QUESTION 290**

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



SW1: 0C:E0:38:00:94:04

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

**Answer:** C

**Explanation:**

The lowest MAC address will determine which bridge becomes the root bridge. In this case SW3 in decimal is 12.15.21.26.60.157 which is the lowest MAC address.

**QUESTION 291**

Which device permits or denies network traffic based on a set of rules?

- A. firewall

- B. switch
- C. access point
- D. wireless controller

**Answer:** A

**QUESTION 292**

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

**Answer:** B

**Explanation:**

8 bits =  $(2^8 - 2) = 254$  IP addresses, and it's not enough.  
9 bits =  $(2^9 - 2) = 510$  IP addresses, and this is enough.

You have a class C subnet (192.168.0.0). This means a subnet mask like this:

255.255.255.0

But you need 9 bits for the hosts, so you've got left with a subnet mask like this:

255.255.1111111x.xxxxxxx = 255.255.254.0

This means you will use VLSM subnetting.

**QUESTION 293**

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

**Answer:** D

**QUESTION 294**

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

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

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

**Answer:** C

**Explanation:**

The router will use the default route since there is no entry for the destination address/subnet entry in the routine table.

#### QUESTION 295

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

**Answer:** D

**Explanation:**

Although the spanning-tree vlan 10 root primary command will ensure a switch will have a bridge priority value lower than other bridges introduced to the network, the spanning-tree vlan 10 priority 0 command ensures the bridge priority takes precedence over all other priorities.

#### QUESTION 296

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
```

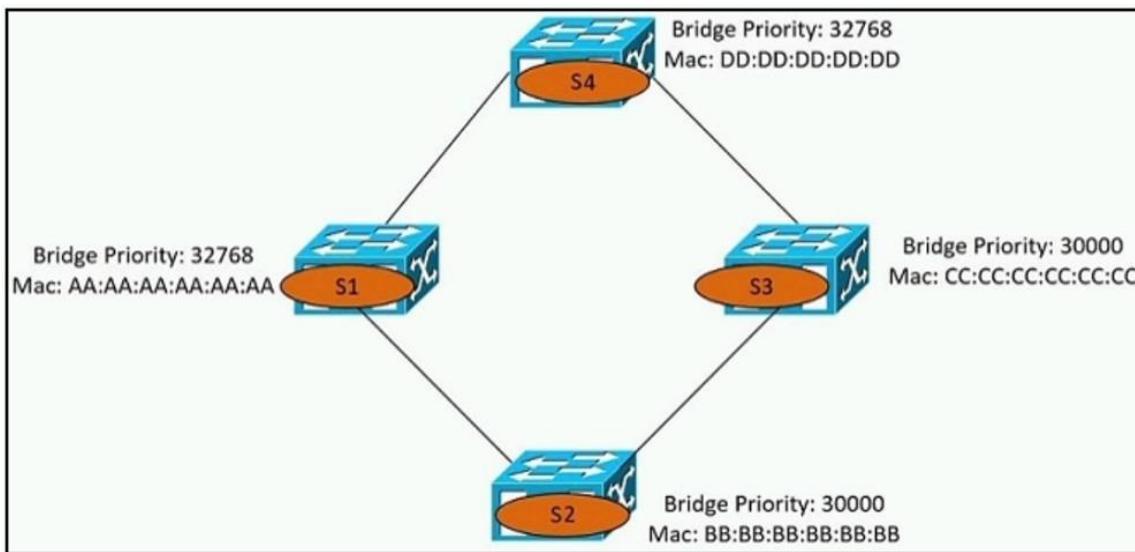
- R1(config)#username admin privilege 15 secret p@ss1234  
R1(config-if)#line vty 0 4  
R1(config-line)#login local
- R1(config)#username admin secret p@ss1234  
R1(config-if)#line vty 0 4  
R1(config-line)#login local  
R1(config)#enable secret p@ss1234
- R1(config)#username admin  
R1(config-if)#line vty 0 4  
R1(config-line)#password p@ss1234  
R1(config-line)#transport input telnet
- R1(config)#username admin  
R1(config-if)#line vty 0 4  
R1(config-line)#password p@ss1234

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

**Answer:** A

**QUESTION 297**

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



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

**Answer:** B

**Explanation:**

Lower priority means it is preferred compared to a higher. If there is a tie in priority then the lowest MAC address will determine which bridge becomes the root. Because S2 has the lowest MAC address, S2 becomes the root bridge.

#### QUESTION 298

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

```
10.0.0.0/24 is subnetted, 1 subnets
C 10.0.0.0 is directly connected, FastEthernet0/1
C 172.160.0/16 is directly connected, FastEthernet0/0
D 192.168.0.0/24 [90/30720] via 172.16.0.2, 00:00:03, FastEthernet0/0
```

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

**Answer:** D

**Explanation:**

D = EIGRP, O = OSPF, L = Local, S = Static, C = Directly Connected

#### QUESTION 299

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

**Answer:** B

**Explanation:**

SNMP works in conjunction with TFTP to backup configuration files. This is accomplished by downloading a current copy of your router's configuration file to a TFTP server via SNMP.

### QUESTION 300

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

- A. configure the 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

**Answer:** AE

**Explanation:**

Timers match by default.

The process ID can be the same or not.

The router ID mustn't be the same.

### QUESTION 301

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

**Answer:** B

**Explanation:**

The control plane is the part of a network that controls how data is forwarded, while the data plane controls the actual forwarding process.

Making packet forwarding decisions is 'how data is forwarded'.

### QUESTION 302

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.

**Answer:** A**Explanation:**

Public WAN infrastructure: Service providers provide Internet access using broadband services such as DSL, cable, and satellite access. Broadband connections are typically used to connect small offices and telecommuting employees to a corporate site over the Internet. Data traveling between corporate sites over the public WAN infrastructure should be protected using VPNs.

**QUESTION 303**

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

**Answer:** C**Explanation:**

You can configure an interface to convert the dynamic MAC addresses to sticky secure MAC addresses and to add them to the running configuration by enabling sticky learning. To enable sticky learning, enter the switchport port-security mac-address sticky command.

**QUESTION 304**

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

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

**Answer:** CE**QUESTION 305**

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

**Answer:** B**Explanation:**

Root Port selection is based on the port having lowest cost to the Root Bridge (CAT1). For PVST (Per VLAN Spanning Tree) path cost will depend on bandwidth of links and cost value is as shown below for most commonly used links.

<https://mrncciew.com/2013/07/07/stp-root-port-selection/>

**QUESTION 306**

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

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

**Answer:** B

**QUESTION 307**

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 207.165.200.250, Serial0/0/0
O 172.16.3.0/28 [110/84437] via 207.165.200.254, 00:00:28, Serial0/0/1
 207.165.200.0/24 is variably subnetted, 6 subnets, 2 masks
C 207.165.200.244/30 is directly connected, Serial0/1/0
L 207.165.200.245/32 is directly connected, Serial0/1/0
C 207.165.200.248/30 is directly connected, Serial0/0/0
L 207.165.200.249/32 is directly connected, Serial0/0/0
C 207.165.200.252/30 is directly connected, Serial0/0/1
L 207.165.200.253/32 is directly connected, Serial0/0/1
```

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

**Answer:** B

**Explanation:**

The longest matching route to 172.16.3.14 is the 182.16.3.0/28 route, using Serial 0/0/1 with a next hop of 207.165.200.254.

**QUESTION 308**

What is a benefit for external users who consume public cloud resources?

- A. implemented over a dedicated WAN
- B. located in the same data center as the users
- C. all hosted on physical servers
- D. accessed over the Internet

**Answer:** D

**QUESTION 309**

## Drag and Drop Question

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.

```
C:\ipconfig/all

Windows IP Configuration

Host Name : Inspiron15
Primary Dns Suffix :
Node Type : Mixed
IP Routing Enabled : No
WINS Proxy Enabled. : No

Wireless LAN adapter Local Area Connection* 12:

Media State : Media disconnected
Connection-specific DNS Suffix . . .
Description : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. : 1A-76-3F-7C-57-DF
DHCP Enabled. : Yes
Autoconfiguration Enabled : Yes

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix . . .
Description : Dell Wireless 1783 802.11b/g/n <2.4Gz>
Physical Address. : B8-76-3F-7C-57-DF
DHCP Enabled. : No
Autoconfiguration Enabled. : Yes
Link-local IPv6 Address : fe80::e09f:9839:6e86:f755x12<Preferred>
 : 192.168.1.20<Preferred>
 : 255.255.255.0
 : 192.168.1.1
DHCPv6 IAID : 263747135
DHCPv6 Client DUID. : 00-01-00-01-18-E6-32-43-D8-76-3F-7C-57-DF

 : 192.168.1.15
 : 192.168.1.16
NetBIOS over Tcpip. : Enabled
```

|                   |                                          |
|-------------------|------------------------------------------|
| 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                              |

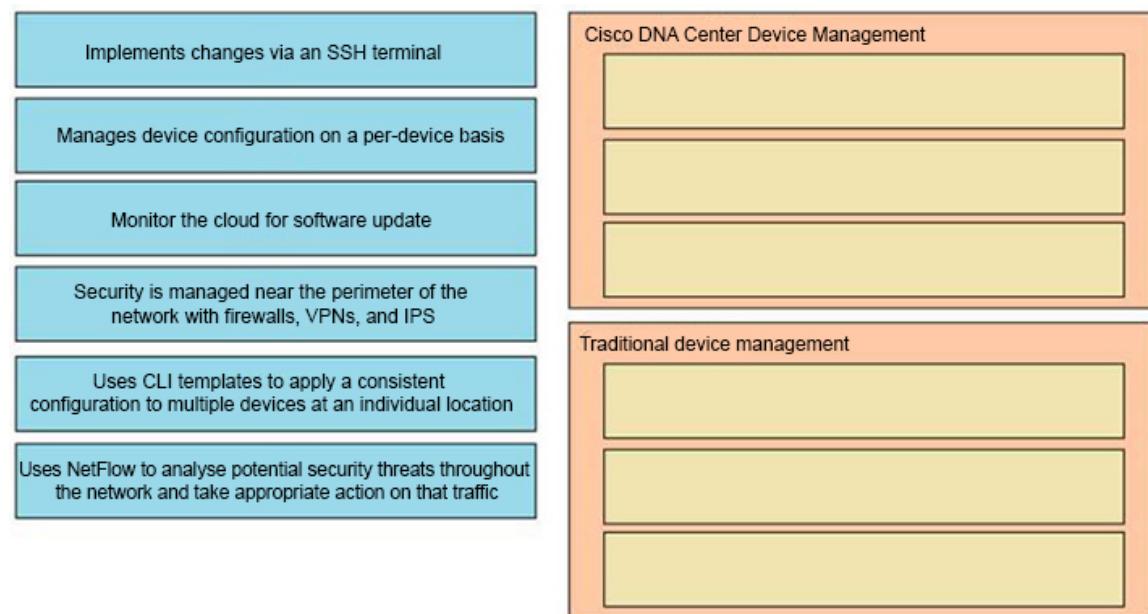
**Answer:**

|  |                   |
|--|-------------------|
|  | 192.168.1.255     |
|  | 192.168.1.1       |
|  | 192.168.1.20      |
|  | 192.168.1.254     |
|  | B8-76-3F-7C-57-DF |

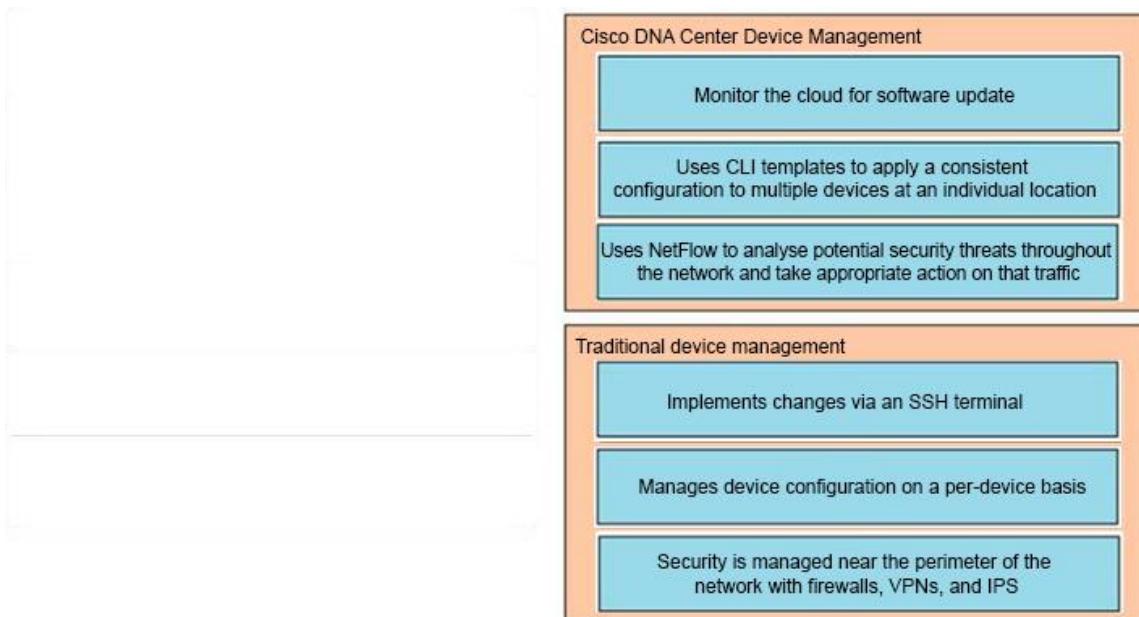
**QUESTION 310**

Drag and Drop Question

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



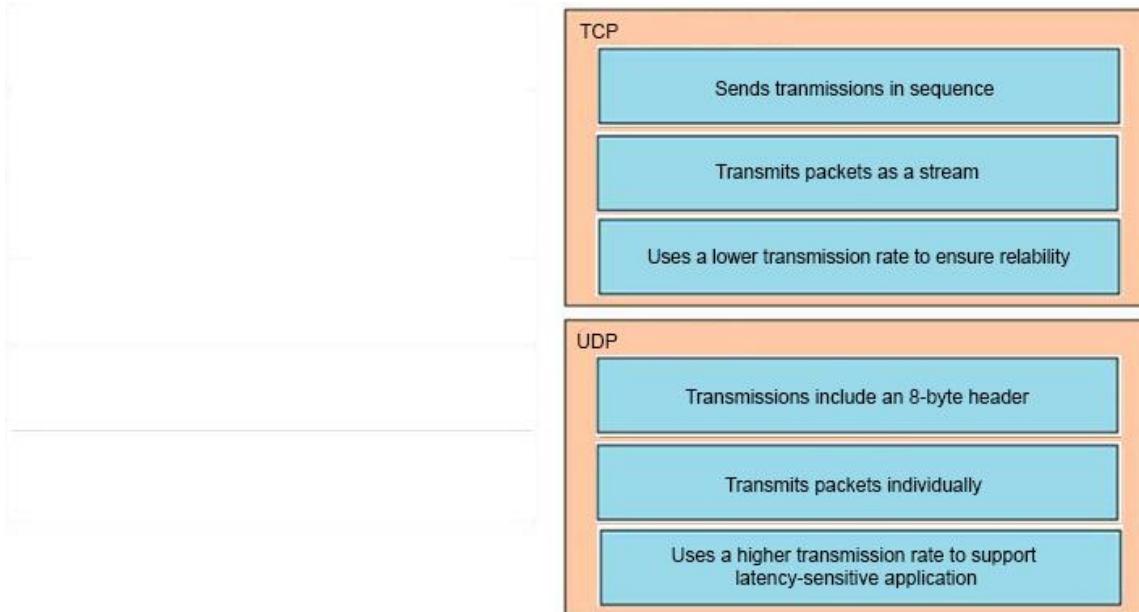
**Answer:**


**QUESTION 311**

Drag and Drop Question

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


**Answer:**


**QUESTION 312**

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

**Answer:** C

**QUESTION 313**

A manager asks a network engineer to advise which cloud service models are used so employees do not have to waste their time installing, managing, and updating software which is only used occasionally. Which cloud service model does the engineer recommend?

- A. infrastructure-as-a-service
- B. platform-as-a-service
- C. business process as service to support different types of service
- D. software-as-a-service

**Answer:** D

**QUESTION 314**

A port security violation has occurred on a switch port due to the maximum MAC address count being exceeded. Which command must be configured to increment the security-violation count and forward an SNMP trap?

- A. switchport port-security violation access

- B. switchport port-security violation protect
- C. switchport port-security violation restrict
- D. switchport port-security violation shutdown

**Answer:** C

**QUESTION 315**

Refer to the exhibit. Which type of configuration is represented in the output?

```
cisco_ospf_vrf {"R1 default":
 ensure => 'present',
 auto_cost => '100',
}
```

- A. Ansible
- B. JSON
- C. Chef
- D. Puppet

**Answer:** D

**QUESTION 316**

What are two functions of a Layer 2 switch? (Choose two)

- A. acts as a central point for association and authentication servers
- B. selects the best route between networks on a WAN
- C. moves packets within a VLAN
- D. moves packets between different VLANs
- E. makes forwarding decisions based on the MAC address of a packet

**Answer:** CE

**QUESTION 317**

Which spanning-tree enhancement avoids the learning and listening states and immediately places ports in the forwarding state?

- A. BPDUfilter
- B. PortFast
- C. Backbonefast
- D. BPDUguard

**Answer:** B

**Explanation:**

PortFast

Spanning Tree Portfast causes layer 2 switch interfaces to enter forwarding state immediately, bypassing the listening and learning states. It should be used on ports connected directly to end hosts like servers or workstations. Note: If portfast isn't enabled, DHCP timeouts can occur while STP converges, causing more problems.

**QUESTION 318**

What is a recommended approach to avoid co-channel congestion while installing access points that use the 2.4 GHz frequency?

- A. different nonoverlapping channels
- B. different overlapping channels
- C. one overlapping channel
- D. one nonoverlapping channel

**Answer:** D

**Explanation:**

Each AP operates in one channel. The goal is that neighboring APs don't use the same channel, so you need multiple non-overlapping channels, or you have co-channel interference, which slows down your wireless operation. (Adjacent channel interference causes collisions)

**QUESTION 319**

Which function is performed by the collapsed core layer in a two-tier architecture?

- A. enforcing routing policies
- B. marking interesting traffic for data policies
- C. attaching users to the edge of the network
- D. applying security policies

**Answer:** A

**QUESTION 320**

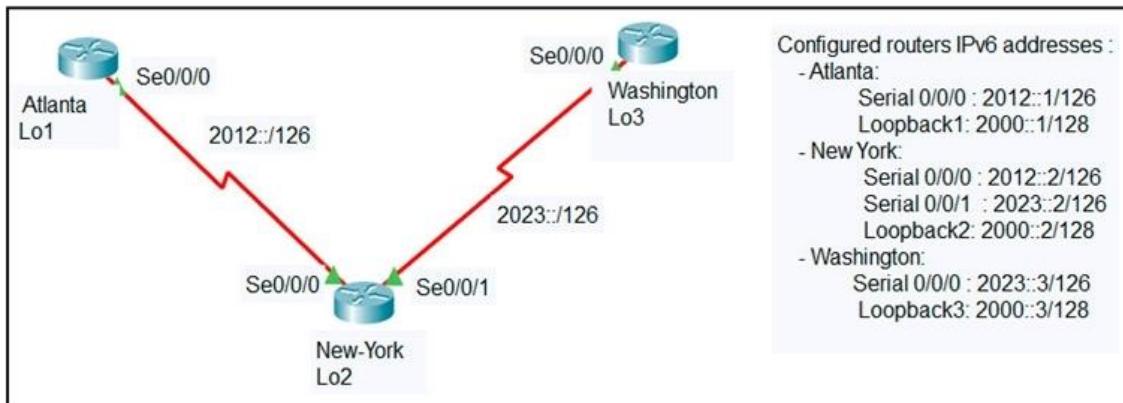
What are two functions of a server on a network? (Choose two)

- A. achieves redundancy by exclusively using virtual server clustering
- B. runs applications that send and retrieve data for workstations that make requests
- C. handles requests from multiple workstations at the same time
- D. runs the same operating system in order to communicate with other servers
- E. housed solely in a data center that is dedicated to a single client

**Answer:** BC

**QUESTION 321**

Refer to the exhibit. An engineer configured the New York router with static routes that point to the Atlanta and Washington sites. Which command must be configured on the Atlanta and Washington routers so that both sites are able to reach the loopback2 interface on the New York router?



- A. ipv6 route ::/0 Serial 0/0/1
- B. ipv6 route 0/0 Serial 0/0/0
- C. ipv6 route ::/0 Serial 0/0/0
- D. ip route 0.0.0.0.0.0.0 Serial 0/0/0
- E. ipv6 route ::/0 2000::2

**Answer:** C

**Explanation:**

Network + Interface (Source interface) or Next Hop (IP Address Neighbor).

So, you have 4 possibilities:

Atlanta = ipv6 route::/0 2012::2/126

or

Atlanta = ipv6 route::/0 Serial 0/0/0

Washington= ipv6 route::/0 2023::2/126

or

Washington= ipv6 route::/0 Serial 0/0/0

### QUESTION 322

Drag and Drop Question

Drag and drop the AAA terms from the left onto the descriptions on the right.

|                |                            |
|----------------|----------------------------|
| accounting     | tracks activity            |
| authentication | updates session attributes |
| authorization  | verifies access rights     |
| CoA            | verifies identity          |

**Answer:**

accounting

CoA

authorization

authentication

**QUESTION 323**

An engineer is configuring switch SW1 to act an NTP server when all upstream NTP server connectivity fails. Which configuration must be used?

- A. SW1# config t  
SW1(config)#ntp peer 192.168.1.1  
SW1(config)#ntp access-group peer accesslist1
- B. SW1# config t  
SW1(config)#ntp master  
SW1(config)#ntp server192.168.1.1
- C. SW1# config t  
SW1(config)#ntp backup  
SW1(config)#ntp server192.168.1.1
- D. SW1# config t  
SW1(config)#ntp server192.168.1.1  
SW1(config)#ntp access-group peer accesslist1

**Answer:** B

**Explanation:**

The "NTP Master" command sets this device (SW1) as an NTP server, the second command "NTP server 192.168.1.1" synchronises this device to 192.168.1.1's time. if the upstream connectivity to 192.168.1.1 is lost, this device will continue to act as a NTP server for the rest of the hosts in the network.

**QUESTION 324**

In software-defined architectures, which plane is distributed and responsible for traffic forwarding?

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

**Answer:** D

**QUESTION 325**

When using Rapid PVST+, which command guarantees the switch is always the root bridge for VLAN 200?

- A. spanning-tree vlan 200 priority 614440
- B. spanning-tree vlan 200 priority 38572422
- C. spanning-tree vlan 200 priority 0
- D. spanning-tree vlan 200 root primary

**Answer:** C

**QUESTION 326**

An engineer requires a scratch interface to actively attempt to establish a trunk link with a neighbor switch. What command must be configured?

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

**Answer:** B

**Explanation:**

The command switchport mode dynamic desirable, which asks the switch to both negotiate as well as to begin the negotiation process, rather than waiting on another device.

**QUESTION 327**

Which protocol prompts the Wireless LAN Controller to generate its own local web administration SSL certificate for GUI access?

- A. HTTPS
- B. RADIUS
- C. TACACS+
- D. HTTP

**Answer:** A

**Explanation:**

You can protect communication with the GUI by enabling HTTPS. HTTPS protects HTTP browser sessions by using the Secure Sockets Layer (SSL) protocol.

When you enable HTTPS, the controller generates its own local web administration SSL certificate and automatically applies it to the GUI. You also have the option of downloading an externally generated certificate.

**QUESTION 328**

What are two recommendations for protecting network ports from being exploited when located in an office space outside of an IT closet? (Choose two)

- A. configure static ARP entries
- B. enable the PortFast feature on ports

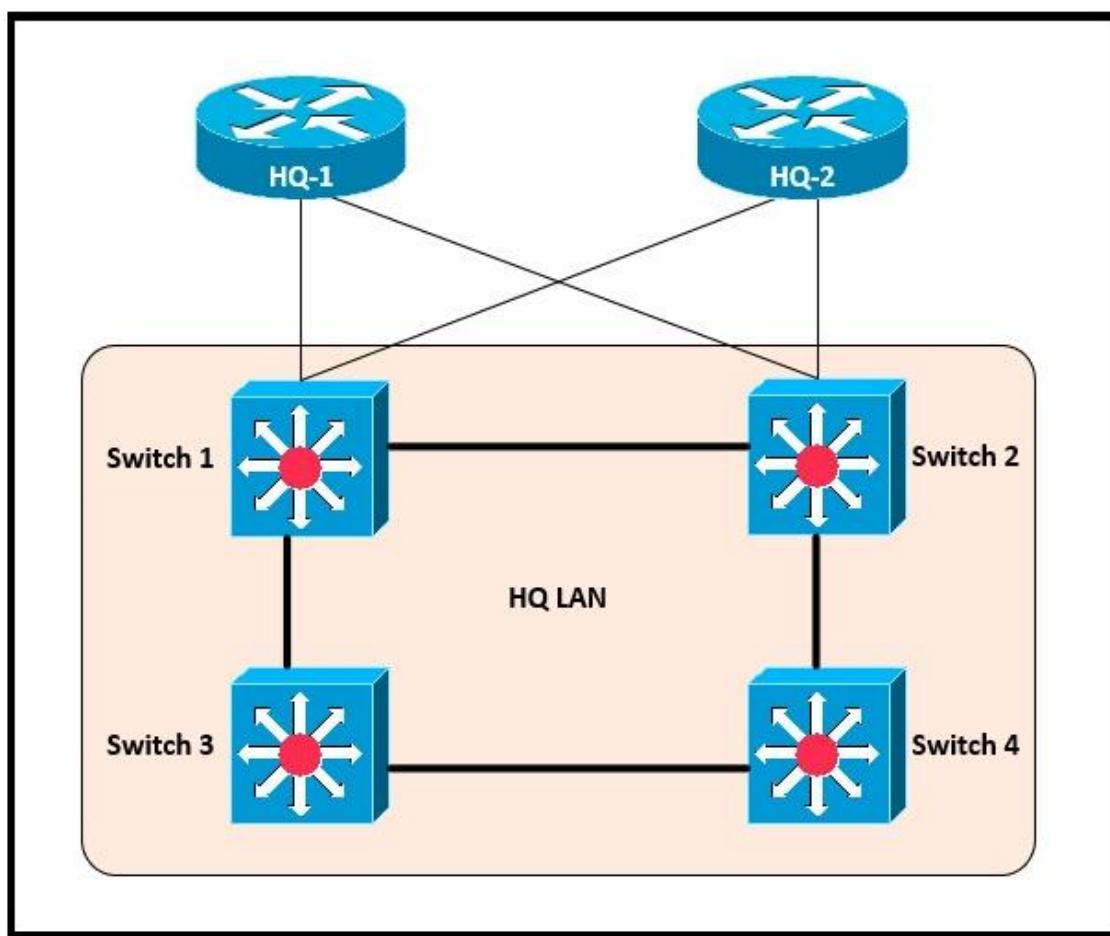
- C. implement port-based authentication
- D. configure ports to a fixed speed
- E. shut down unused ports

**Answer:** CE

**QUESTION 329**

Refer to the exhibit. After the election process what is the root bridge in the HQ LAN?

Switch 1: 0C:E0:38:81:32:58  
Switch 2: 0C:0E:15:22:1A:61  
Switch 3: 0C:0E:15:1D:3C:9A  
Switch 4: 0C:E0:19:A1:4D:16



- A. Switch 1
- B. Switch 2
- C. Switch 3
- D. Switch 4

**Answer:** C

**Explanation:**

The root bridge is determined by the lowest bridge ID, which consists of the priority value and the MAC address. Because the priority values of all of the switches are not available, the MAC address is used to determine the root bridge. Because S3 has the lowest MAC address, S3 becomes the root bridge.

**QUESTION 330**

What is the primary function of a Layer 3 device?

- A. to analyze traffic and drop unauthorized traffic from the Internet
- B. to transmit wireless traffic between hosts
- C. to pass traffic between different networks
- D. forward traffic within the same broadcast domain

**Answer:** C

**Explanation:**

<https://community.cisco.com/t5/networking-documents/communication-at-network-layer-layer-3/ta-p/3128129>

Router internally has two tables one for layer 2 information (MAC Address / ARP Table) and layer 3 information (Routing Table). Routing table is used for inter-network communication.

**QUESTION 331**

What is the same for both copper and fiber interfaces when using SFP modules?

- A. They support an inline optical attenuator to enhance signal strength
- B. They provide minimal interruption to services by being hot-swappable
- C. They offer reliable bandwidth up to 100 Mbps in half duplex mode
- D. They accommodate single-mode and multi-mode in a single module

**Answer:** B

**Explanation:**

<https://www.cisco.com/c/en/us/products/collateral/interfaces-modules/gigabit-ethernet-gbic-sfp-modules/datasheet-c78-366584.html>

1000BASE-T SFP for copper networks

The 1000BASE-T SFP operates on standard Category 5 unshielded twisted-pair copper cabling of link lengths up to 100 m (328 ft). Cisco 1000BASE-T SFP modules support 10/100/1000 auto negotiation and Auto MDI/MDIX.

Features and benefits

- Hot swappable to maximize uptime and simplify serviceability
- Flexibility of media and interface choice on a port-by-port basis, so you can “pay as you populate”
- Robust design for enhanced reliability
- Supports Digital Optical Monitoring (DOM) capability

**QUESTION 332**

What is a function of TFTP in network operations?

- A. transfers a backup configuration file from a server to a switch using a username and password
- B. transfers files between file systems on a router
- C. transfers a configuration files from a server to a router on a congested link
- D. transfers IOS images from a server to a router for firmware upgrades

**Answer:** D

**Explanation:**

<https://geek-university.com/ccna/trivial-file-transfer-protocol-tftp/>

### QUESTION 333

Which CRUD operation modifies an existing table or view?

- A. read
- B. create
- C. replace
- D. update

**Answer:** D

### QUESTION 334

An engineer must configure interswitch VLAN communication between a Cisco switch and a third-party switch. Which action should be taken?

- A. configure IEEE 802.1p
- B. configure IEEE 802.1q
- C. configure ISL
- D. configure DSCP

**Answer:** B

**Explanation:**

VLAN trunking offers two options, ISL and 802.1Q. ISL is Cisco proprietary while 802.1Q is standards based and supported by multiple vendors.

### QUESTION 335

What is a function of a remote access VPN?

- A. used cryptographic tunneling to protect the privacy of data for multiple users simultaneously
- B. used exclusively when a user is connected to a company's internal network
- C. establishes a secure tunnel between two branch sites
- D. allows the users to access company internal network resources through a secure tunnel

**Answer:** D

### QUESTION 336

What is a DHCP client?

- A. a workstation that requests a domain name associated with its IP address
- B. a host that is configured to request an IP address automatically
- C. a server that dynamically assigns IP addresses to hosts.
- D. a router that statically assigns IP addresses to hosts.

**Answer:** B

**Explanation:**

The "CLIENT" (Meaning a computer or device on the network) requests IP address information from the DHCP "SERVER".

**QUESTION 337**

Which two functions are performed by the core layer in a three-tier architecture? (Choose two)

- A. Provide uninterrupted forwarding service.
- B. Police traffic that is sent to the edge of the network.
- C. Provide direct connectivity for end user devices.
- D. Ensure timely data transfer between layers.
- E. Inspect packets for malicious activity.

**Answer:** AD

**Explanation:**

Cisco is very clear about the purpose of this layer. Its only role is to forward traffic, the fastest it can. Here you don't apply any policy, as you must try to reduce the load of the core so it can focus on routing.

<https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Campus/campover.html#wp708831>

**QUESTION 338**

Refer to the exhibit. A network administrator must permit SSH access to remotely manage routers in a network. The operations team resides on the 10.20.1.0/25 network. Which command will accomplish this task?

```
interface GigabitEthernet0/1
ip address 192.168.1.2 255.255.255.0
ip access-group 2699 in
!
access-list 2699 deny icmp any 10.10.1.0 0.0.0.255 echo
access-list 2699 deny ip any 10.20.1.0 0.0.0.255
access-list 2699 permit ip any 10.10.1.0 0.0.0.255
access-list 2699 permit tcp any 10.20.1.0 0.0.0.127 eq 22
```

- A. access-list 2699 permit udp 10.20.1.0 0.0.0.255
- B. no access-list 2699 deny tcp any 10.20.1.0 0.0.0.127 eq 22
- C. access-list 2699 permit tcp any 10.20.1.0 0.0.0.255 eq 22
- D. no access-list 2699 deny ip any 10.20.1.0 0.0.0.255

**Answer:** D

**Explanation:**

Already a statement is there in last to allow SSH Traffic for network 10.20.1.0 0.0.0.127, but Second statement says deny ip any 10.20.1.0 0.0.0.255, so how it will work once it is denied. So the right answer is remove the --- no access-list 2699 deny ip any 10.20.1.0 0.0.0.255.

**QUESTION 339**

Which configuration management mechanism uses TCP port 22 by default when communicating with managed nodes?

- A. Ansible

- B. Python
- C. Puppet
- D. Chef

**Answer:** A

**QUESTION 340**

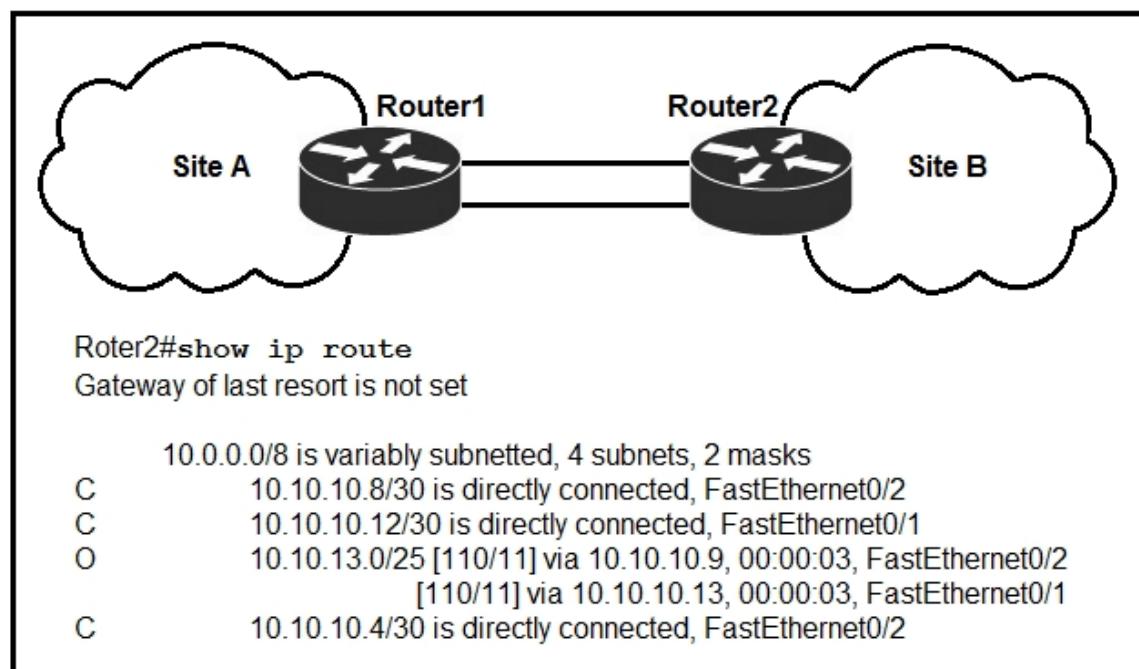
What is a practice that protects a network from VLAN hopping attacks?

- A. Enable dynamic ARP inspection
- B. Configure an ACL to prevent traffic from changing VLANs
- C. Assign all access ports to VLANs other than the native VLAN
- D. Implement port security on internet-facing VLANs

**Answer:** C

**QUESTION 341**

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



- A. It load-balances traffic out of Fa0/1 and Fa0/2.
- B. It is unreachable and discards the traffic.
- C. It sends packets out of interface Fa0/2.
- D. It sends packets out of interface Fa0/1.

**Answer:** B

**QUESTION 342**

What is the purpose of traffic shaping?

- A. to mitigate delays over slow links
- B. to provide fair queuing for buffered flows
- C. to limit the bandwidth that a flow can use to
- D. be a marking mechanism that identifies different flows

**Answer:** B

**Explanation:**

Traffic shaping retains excess packets in a queue and then schedules the excess for later transmission over increments of time.

<https://www.cisco.com/c/en/us/support/docs/quality-of-service-qos/qos-policing/19645-policevsshape.html#policingvsshaping>

#### QUESTION 343

Refer to the exhibit. Which command configures a floating static route to provide a backup to the primary link?

```
Router#show ip route
Codes: L - local, 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
 Gateway of last resort is 209.165.202.131 to network 0.0.0.0

S* 0.0.0.0/0 [1/0] via 209.165.202.131
 209.165.200.0/27 is subnetted, 1 subnets
S 209.165.200.224 [254/0] via 209.165.202.129
 209.165.201.0/27 is subnetted, 1 subnets
S 209.165.201.0 [1/0] via 209.165.202.130
```

- A. ip route 0.0.0.0 0.0.0.0 209.165.202.131
- B. ip route 209.165.201.0 255.255.255.224 209.165.202.130
- C. ip route 0.0.0.0 0.0.0.0 209.165.200.224
- D. ip route 209.165.200.224 255.255.255.224 209.165.202.129 254

**Answer:** D

**Explanation:**

D is the only answer that is a static floating route.

#### QUESTION 344

Where does the configuration reside when a helper address is configured to support DHCP?

- A. on the router closest to the server
- B. on the router closest to the client
- C. on every router along the path
- D. on the switch trunk interface

**Answer:** B

**Explanation:**

[https://techhub.hpe.com/eginfolib/networking/docs/switches/K-KA-KB/15-18/5998-8164\\_mrg/content/ch12s04.html](https://techhub.hpe.com/eginfolib/networking/docs/switches/K-KA-KB/15-18/5998-8164_mrg/content/ch12s04.html)

<https://community.cisco.com/t5/routing/configure-dhcp-relay-ip-helper-address-need-help/td-p/4127915>

the IP helper goes on the first layer 3 device in the path towards the DHCP server. In your case, that appears to be the 3850. Put the helper address on the Vlan interfaces, e.g.:

interface Vlan60

ip address 10.233.190.254 255.255.255.0

**--> ip helper-address x.x.x.x**

no ip redirects

no ip unreachables

#### QUESTION 345

How does the dynamically-learned MAC address feature function?

- A. The CAM table is empty until ingress traffic arrives at each port
- B. Switches dynamically learn MAC addresses of each connecting CAM table.
- C. The ports are restricted and learn up to a maximum of 10 dynamically-learned addresses
- D. It requires a minimum number of secure MAC addresses to be filled dynamically

**Answer:** A

#### QUESTION 346

What facilitates a Telnet connection between devices by entering the device name?

- A. SNMP
- B. DNS lookup
- C. syslog
- D. NTP

**Answer:** B

#### QUESTION 347

Drag and Drop Question

Drag the IPv6 DNS record types from the left onto the description on the right.

|       |                                                         |
|-------|---------------------------------------------------------|
| AAAA  | aliases one name to another                             |
| CNAME | associates the domain serial number with its owner      |
| NS    | correlates a domain with its authoritative name servers |
| PTR   | correlates a host name with an IP address               |
| SOA   | supports reverse name lookups                           |

**Answer:**

|       |       |
|-------|-------|
| AAAA  | CNAME |
| CNAME | SOA   |
| NS    | NS    |
| PTR   | AAAA  |
| SOA   | PTR   |

#### QUESTION 348

Drag and Drop Question

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

**Answer Area**

|              |                                                                         |
|--------------|-------------------------------------------------------------------------|
| MIB          | collection of variables that can be monitored                           |
| SNMP agent   | unsolicited message                                                     |
| SNMP manager | responds to status requests and requests for information about a device |
| SNMP trap    | resides on an NMS                                                       |

**Answer:**

**Answer Area**

|              |              |
|--------------|--------------|
| MIB          | MIB          |
| SNMP agent   | SNMP trap    |
| SNMP manager | SNMP agent   |
| SNMP trap    | SNMP manager |

**Explanation:**

MIB: collection of variables that can be monitored

SNMP agent: responds to status requests and requests for information about a device

SNMP manager: The SNMP manager is part of an NMS

SNMP trap: unsolicited messages that are sent by the SNMP agent and alert the NMS to a condition on the network

**QUESTION 349**

Drag and Drop Question

Refer to the exhibit. An engineer is required to verify that the network parameters are valid for the users wireless LAN connectivity on a /24 subnet. Drag and drop the values from the left onto the network parameters on the right. Not all values are used.

```
C:\>ipconfig/all

Windows IP Configuration

Host Name : Inspiron15
Primary Dns Suffix :
Node Type : Mixed
IP Routing Enabled. : No
WINS Proxy Enabled. : No

Wireless LAN adapter Local Area Connection* 12:

Media State : Media disconnected
Connection-specific DNS Suffix :
Description : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. : 1A-76-3F-7C-57-DF
DHCP Enabled. : Yes
Autoconfiguration Enabled : Yes

Wireless LAN adapter Wi-Fi:

Connection-specific DNS Suffix :
Description : Dell Wireless 1703 802.11b/g/n <2.4GHz>
Physical Address. : B8-76-3F-7C-57-DF
DHCP Enabled. : No
Autoconfiguration Enabled : Yes
Link-local IPv6 Address : fe80::e09f:9839:6e86:f755%12<Preferred>
. : 192.168.1.20<Preferred>
. : 255.255.255.0
. : 192.168.1.1
. : 263747135
DHCPv6 IAID : 00-01-00-01-18-E6-32-43-B8-76-3F-7C-57-DF
. : 192.168.1.15
. : 192.168.1.16
NetBIOS over Tcpip. : Enabled
```

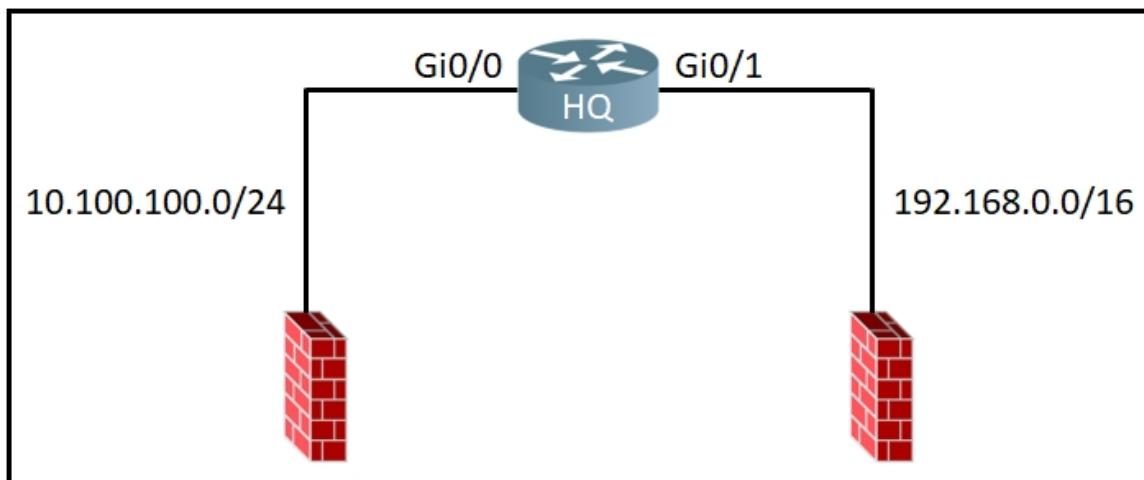
|                   |                                          |
|-------------------|------------------------------------------|
| 192.168.1.1       | broadcast address                        |
| 192.168.1.20      | default gateway                          |
| 192.168.1.254     | host IP address                          |
| 192.168.1.255     | last assignable IP address in the subnet |
| B8-76-3F-7C-57-DF | MAC address                              |
| 1A-76-3F-7C-57-DF | Network address                          |
| 192.168.1.0       |                                          |

**Answer:**

|                   |                   |
|-------------------|-------------------|
| 192.168.1.1       | 192.168.1.255     |
| 192.168.1.20      | 192.168.1.1       |
| 192.168.1.254     | 192.168.1.20      |
| 192.168.1.255     | 192.168.1.254     |
| B8-76-3F-7C-57-DF | B8-76-3F-7C-57-DF |
| 1A-76-3F-7C-57-DF | 192.168.1.0       |
| 192.168.1.0       |                   |

**QUESTION 350**

Refer to the exhibit. An access list is required to permit traffic from any host on interface G0/0 and deny traffic from interface G0/1. Which access list must be applied?



- A. ip access-list standard 99  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.0.255.255
- B. ip access-list standard 99  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.255.255.255
- C. ip access-list standard 199  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.255.255.255
- D. ip access-list standard 199  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.0.255.255

**Answer:** A

**QUESTION 351**

What does a switch use to build its MAC address table?

- A. VTP
- B. DTP
- C. egress traffic
- D. ingress traffic

**Answer:** D

**QUESTION 352**

Which device tracks the state of active connections in order to make a decision to forward a packet through?

- A. wireless access point
- B. firewall
- C. wireless LAN controller
- D. router

**Answer:** B

**QUESTION 353**

How do servers connect to the network in a virtual environment?

- A. wireless to an access point that is physically connected to the network
- B. a cable connected to a physical switch on the network
- C. a virtual switch that links to an access point that is physically connected to the network
- D. a software switch on a hypervisor that is physically connected to the network

**Answer:** D

**QUESTION 354**

What is recommended for the wireless infrastructure design of an organization?

- A. group access points together to increase throughput on a given channel
- B. configure the first three access points are configured to use Channels 1, 6, and 11
- C. include at least two access points on nonoverlapping channels to support load balancing
- D. assign physically adjacent access points to the same Wi-Fi channel

**Answer:** B

**QUESTION 355**

Which 802.11 frame type is indicated by a probe response after a client sends a probe request?

- A. action
- B. management
- C. control
- D. data

**Answer:** B

**Explanation:**

Management frames: Used for joining and leaving a wireless cell. Management frame types include association request, association response, and reassociation request, just to name a few.

Control frames: Used to acknowledge when data frames are received.

Data frames: Frames that contain data.

### QUESTION 356

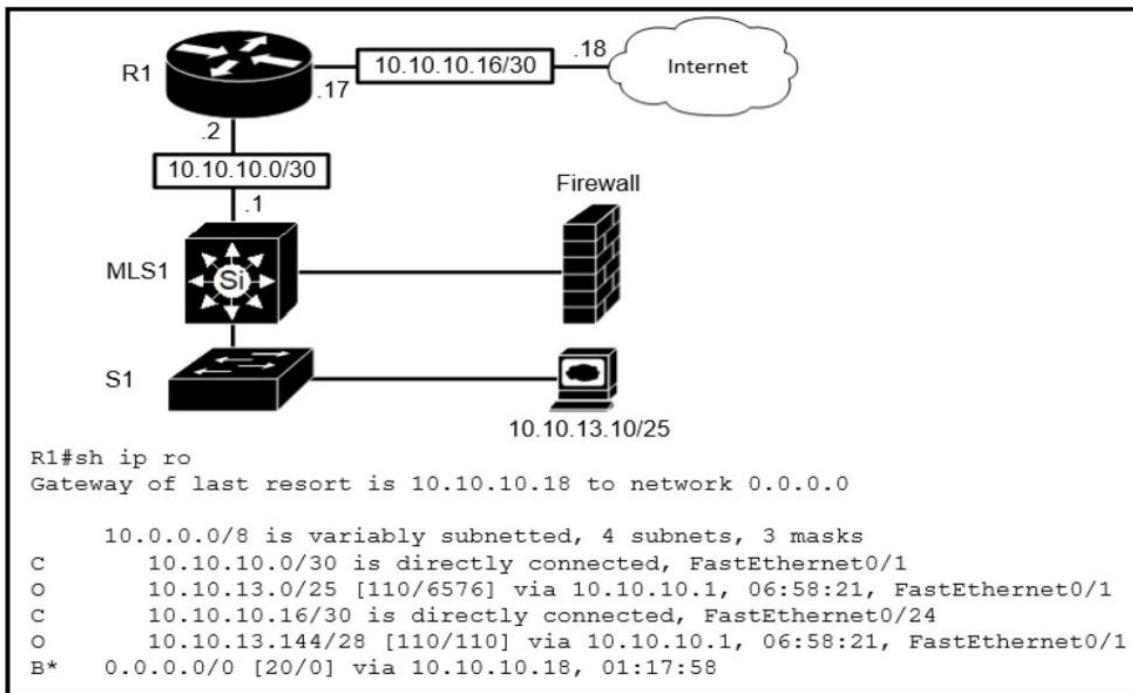
Which network plane is centralized and manages routing decisions?

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

**Answer:** C

### QUESTION 357

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



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

**Answer:** B

**Explanation:**

It can reach the internet with the directly connected route but only if it's specified to go directly to 10.10.10.18. The internet itself is filled with unknown addresses, so any other unknown address will need to use the default route.

**QUESTION 358**

How does a switch process a frame received on Fa0/1 with the destination MAC address of 0e38.7363.657b when the table is missing the address?

- A. It drops the frame immediately.
- B. It forwards the frame back out of interface Fa0/1.
- C. It floods the frame to all interfaces except Fa0/1.
- D. It holds the frame until the MAC address timer expires and then drops the frame.

**Answer:** C

**QUESTION 359**

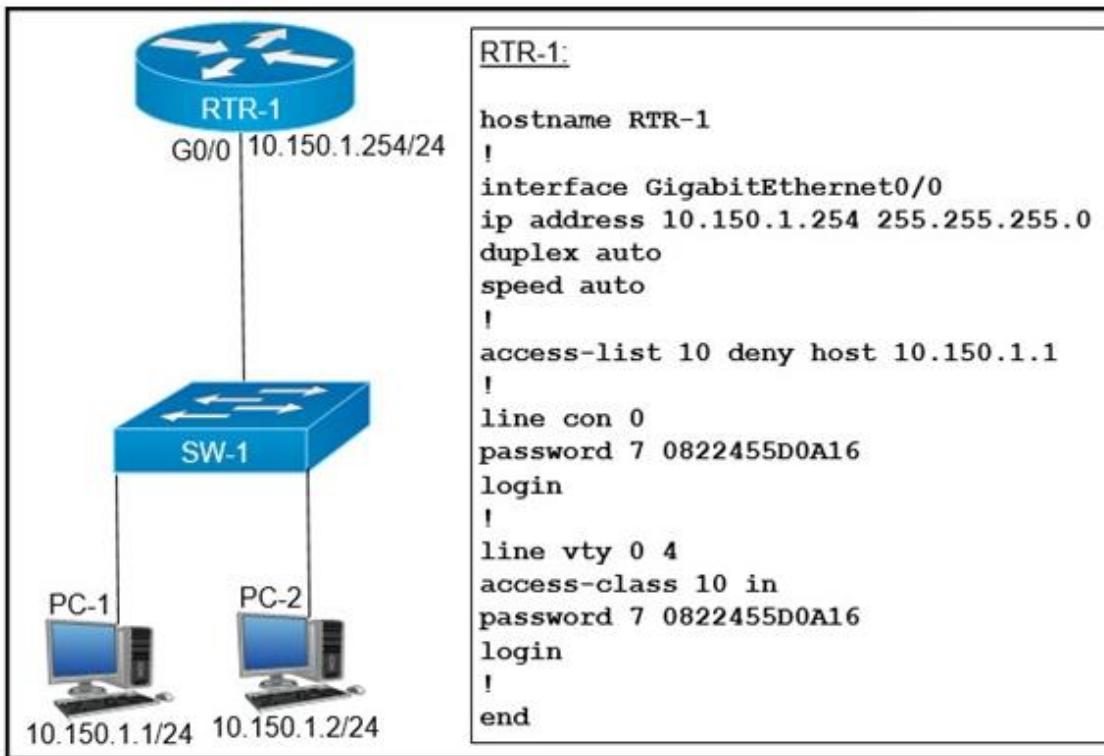
Which function does the range of private IPv4 addresses perform?

- 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

**Answer:** A

**QUESTION 360**

Refer to the exhibit. An access list is created to deny Telnet access from host PC-1 to RTR-1 and allow access from all other hosts. A Telnet attempt from PC-2 gives this message: "% Connection refused by remote host". Without allowing Telnet access from PC-1, which action must be taken to permit the traffic?



- A. Add the access-list 10 permit any command to the configuration
- B. Remove the access-class 10 in command from line vty 0.4.
- C. Add the ip access-group 10 out command to interface g0/0.
- D. Remove the password command from line vty 0.4.

**Answer:** A

**Explanation:**

At the bottom of any ACL there is an Implicit DENY ALL (DENY ANY ANY) rule. So after specifying the first ACL rule we should include an explicit PERMIT ALL (PERMIT ANY ANY) to explicitly permit other Traffic.

#### QUESTION 361

Which protocol does an IPv4 host use to obtain a dynamically assigned IP address?

- A. ARP
- B. DHCP
- C. CDP
- D. DNS

**Answer:** B

#### QUESTION 362

What is a benefit of VRRP?

- A. It provides traffic load balancing to destinations that are more than two hops from the source.
- B. It provides the default gateway redundancy on a LAN using two or more routers.

- C. It allows neighbors to share routing table information between each other.
- D. It prevents loops in a Layer 2 LAN by forwarding all traffic to a root bridge, which then makes the final forwarding decision.

**Answer:** B

**QUESTION 363**

Refer to the exhibit. What is the result if Gig1/11 receives an STP BPDU?

```
switch(config)#interface gigabitEthernet 1/11
switch(config-if)#switchport mode access
switch(config-if)#spanning-tree portfast
switch(config-if)#spanning-tree bpduguard enable
```

- A. The port transitions to STP blocking
- B. The port transitions to the root port
- C. The port immediately transitions to STP forwarding.
- D. The port goes into error-disable state

**Answer:** D

**Explanation:**

BPDU Guard feature protects the port from receiving STP BPDUs, however the port can transmit STP BPDUs. When a STP BPDU is received on a BPDU Guard enabled port, the port is shutdown and the state of the port changes to ErrDis (Error-Disable) state.

**QUESTION 364**

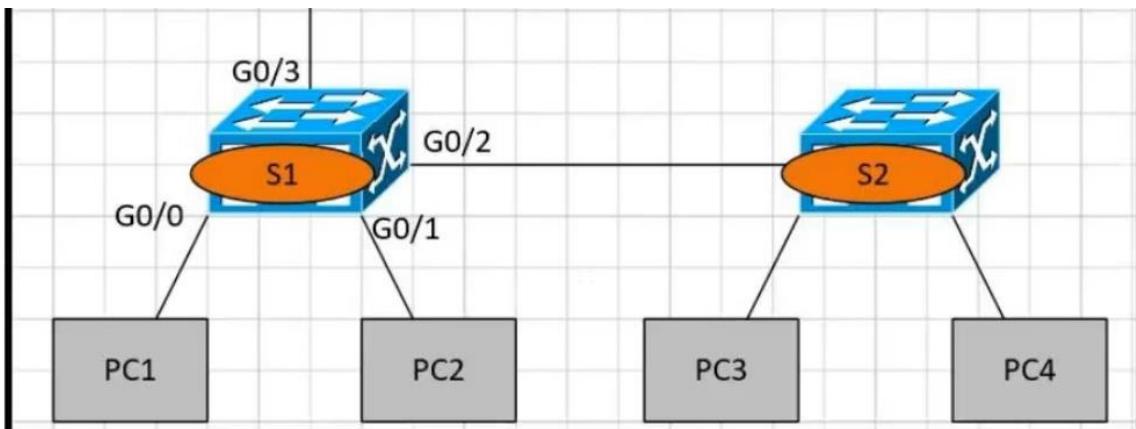
Which type of security program is violated when a group of employees enters a building using the ID badge of only one person?

- A. intrusion detection
- B. user awareness
- C. physical access control
- D. network authorization

**Answer:** C

**QUESTION 365**

Refer to the exhibit. PC1 is trying to ping PC3 for the first time and sends out an ARP to S1. Which action is taken by S1?



- A. It forwards it out G0/3 only
- B. It is flooded out every port except G0/0.
- C. It drops the frame.
- D. It forwards it out interface G0/2 only.

**Answer:** B

#### QUESTION 366

Which technology can prevent client devices from arbitrarily connecting to the network without state remediation?

- A. 802.1x
- B. IP Source Guard
- C. MAC Authentication Bypass
- D. 802.11n

**Answer:** A

**Explanation:**

802.1X is a network authentication protocol that opens ports for network access when an organization authenticates a user's identity and authorizes them for access to the network. The user's identity is determined based on their credentials or certificate, which is confirmed by the RADIUS server.

#### QUESTION 367

In which situation is private IPv4 addressing appropriate for a new subnet on the network of an organization?

- A. There is limited unique address space, and traffic on the new subnet will stay local within the organization.
- B. The network has multiple endpoint listeners, and it is desired to limit the number of broadcasts.
- C. Traffic on the subnet must traverse a site-to-site VPN to an outside organization.
- D. The ISP requires the new subnet to be advertised to the internet for web services.

**Answer:** A

#### QUESTION 368

Refer to the exhibit. A network administrator has been tasked with securing VTY access to a router. Which access-list entry accomplishes this task?

```
access-list 101 permit ospf any any
access-list 101 permit tcp any any eq 179
access-list 101 permit tcp any eq 179 any
access-list 101 permit gre any any
access-list 101 permit esp any any

access-list 101 deny ospf any any
access-list 101 permit tcp 10.1.1.0 0.0.0.255 172.16.1.0 0.0.0.255 eq telnet
access-list 101 permit udp 10.1.1.0 0.0.0.255 172.16.1.0 0.0.0.255 eq 500
access-list 101 permit udp 10.1.1.0 0.0.0.255 172.16.1.0 0.0.0.255 eq 4500
access-list 101 deny ip any any log

interface Ethernet0/0
ip address 10.1.1.25 255.255.255.0
ip access-group 101 in
```

- A. access-list 101 permit tcp 10.1.10 0.0.0.255 172.16.10 0.0.0.255 eq ssh
- B. access-list 101 permit tcp 10.11.0 0.0.0.255 172.16.10 0.0.0.255 eq scp
- C. access-list 101 permit tcp 10.11.0 0.0.0.255 172.16.10 0.0.0.255 eq telnet
- D. access-list 101 permit tcp 10.1.10 0.0.0.255 172.16.10 0.0.0.255 eq https

**Answer:** A

#### QUESTION 369

Aside from discarding, which two states does the switch port transition through while using RSTP (802.1w)? (Choose two)

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

**Answer:** CD

**Explanation:**

STP goes from blocked, listening, learning, and forwarding and RSTP goes from Discarding, Learning, and Forwarding.

#### QUESTION 370

When implementing a router as a DHCP server, which two features must be configured? (Choose two)

- A. relay agent information
- B. database agent
- C. address pool
- D. smart-relay
- E. manual bindings

**Answer:** BC

**QUESTION 371**

An engineer must configure traffic for a VLAN that is untagged by the switch as it crosses a trunk link. Which command should be used?

- A. switchport trunk allowed vlan 10
- B. switchport trunk native vlan 10
- C. switchport mode trunk
- D. switchport trunk encapsulation dot1q

**Answer:** B

**Explanation:**

The switchport trunk native vlan command specifies the native (untagged) VLAN for a Layer 2 interface operating in trunk mode on a Cisco IOS device. This command only takes effect for interfaces that are operating in trunk mode.

**QUESTION 372**

What is a role of wireless controllers in an enterprise network?

- A. centralize the management of access points in an enterprise network
- B. support standalone or controller-based architectures
- C. serve as the first line of defense in an enterprise network
- D. provide secure user logins to devices on the network.

**Answer:** A

**QUESTION 373**

What is the maximum bandwidth of a T1 point-to-point connection?

- A. 1.544 Mbps
- B. 2.048 Mbps
- C. 34.368 Mbps
- D. 43.7 Mbps

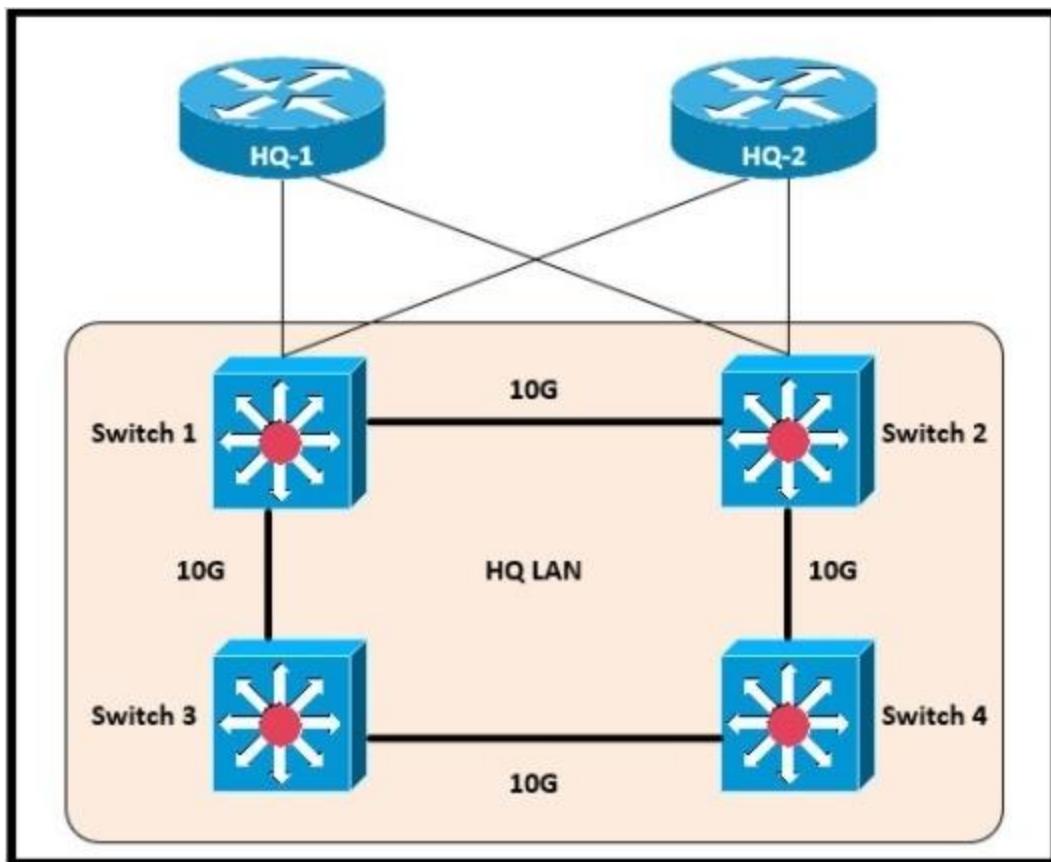
**Answer:** A

**Explanation:**

A Point to Point T1 service is a private data connection securely connecting two or more locations with T1 data speeds (1.54Mbps).

**QUESTION 374**

Refer to the exhibit. Which switch becomes the root of the spanning tree for VLAN 110?



```

Switch 1
VLAN 110 - 32778 0018.184e.3c00
Switch 2
VLAN 110 - 24586 001a.e3ff.a680
Switch 3
VLAN 110 - 28682 0022.55cf.cc00
Switch 4
VLAN 110 - 64000 0e38.7363.657f

```

- A. Switch 1
- B. Switch 2
- C. Switch 3
- D. Switch 4

**Answer:** B

**Explanation:**

The root bridge is the bridge with the lowest Bridge ID. All the decisions like which ports are the root ports (the port with the best path to the root bridge) are made from the perspective of the root bridge. In case of a tie (not the case in this example) then the root bridge will be the switch with the lowest MAC address.

#### QUESTION 375

Where does a switch maintain DHCP snooping information?

- A. in the MAC address table
- B. in the CAM table
- C. in the binding database
- D. in the frame forwarding database

**Answer:** C

**Explanation:**

A DHCP table is built that includes the source MAC address of a device on an untrusted port and the IP address assigned by the DHCP server to that device. The MAC address and IP address are bound together. Therefore, this table is called the DHCP snooping binding table.

**QUESTION 376**

Refer to the exhibit. What is represented by "R1" and "SW1" within the JSON output?

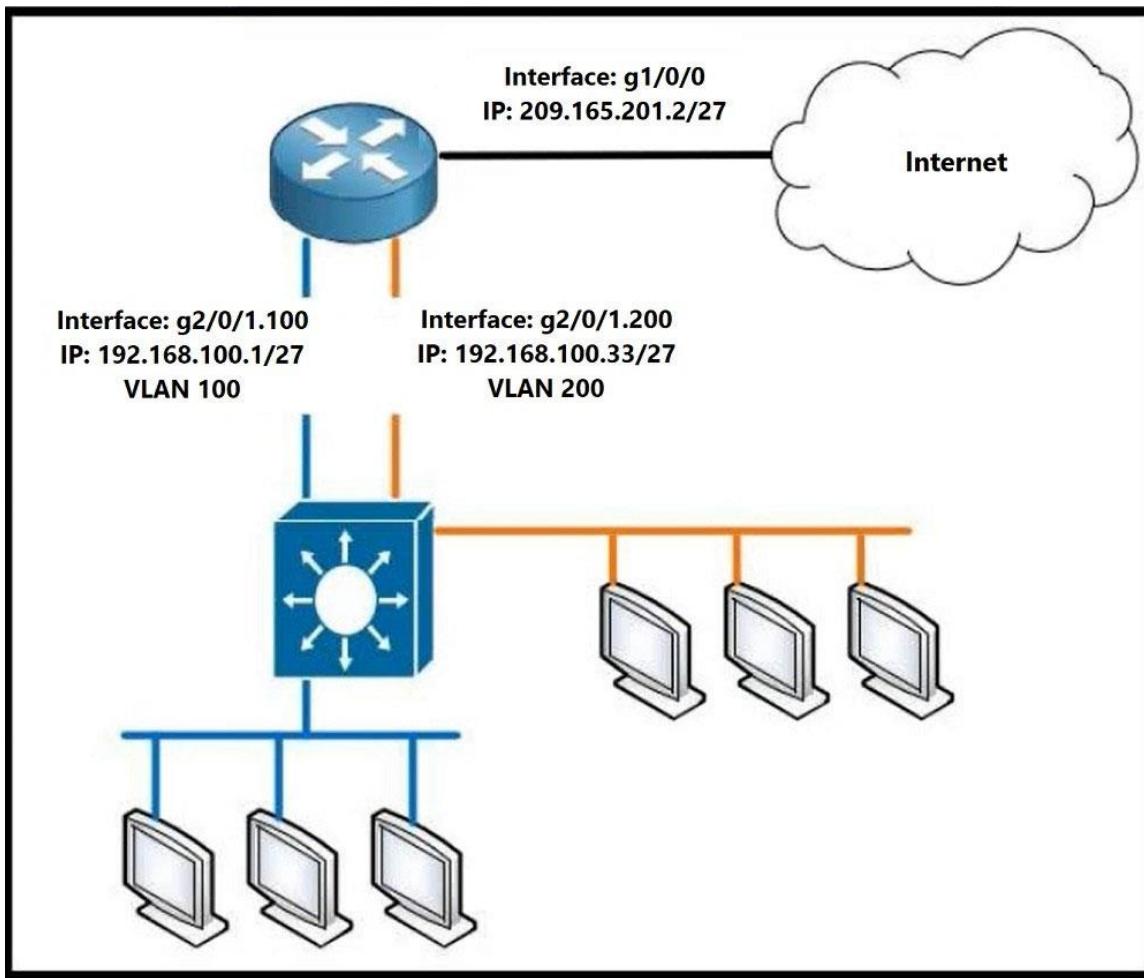
```
{
 "Routers": ["R1", "R2", "R3"],
 "Switches": ["SW1", "SW2", "SW3"]
}
```

- A. key
- B. array
- C. value
- D. object

**Answer:** C

**QUESTION 377**

Refer to the exhibit. Which configuration must be applied to the router that configures PAT to translate all addresses in VLAN 200 while allowing devices on VLAN 100 to use their own IP addresses?



- A. Router1(config)#access-list 99 permit 192.168.100.32 0.0.0.31  
 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload  
 Router1(config)#interface gi2/0/1.200  
 Router1(config)#ip nat inside  
 Router1(config)#interface gi1/0/0  
 Router1(config)#ip nat outside
- B. Router1(config)#access-list 99 permit 192.168.100.0 0.0.0.255  
 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload  
 Router1(config)#interface gi2/0/1.200  
 Router1(config)#ip nat inside  
 Router1(config)#interface gi1/0/0  
 Router1(config)#ip nat outside
- C. Router1(config)#access-list 99 permit 209.165.201.2 255.255.255.255  
 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload  
 Router1(config)#interface gi2/0/1.200  
 Router1(config)#ip nat inside  
 Router1(config)#interface gi1/0/0  
 Router1(config)#ip nat outside
- D. Router1(config)#access-list 99 permit 209.165.201.2 0.0.0.0  
 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload  
 Router1(config)#interface gi2/0/1.200  
 Router1(config)#ip nat inside

```
Router1(config)#interface gi1/0/0
Router1(config)#ip nat outside
```

**Answer:** D

**QUESTION 378**

Which CRUD operation corresponds to the HTTP GET method?

- A. read
- B. update
- C. create
- D. delete

**Answer:** A

**Explanation:**

GET: This method retrieves the information identified by the request URI. In the context of the RESTful web services, this method is used to retrieve resources. This is the method used for read operations (the R in CRUD).

<https://hub.packtpub.com/crud-operations-rest/>

**QUESTION 379**

Refer to the exhibit. Which prefix did router R1 learn from internal EIGRP?

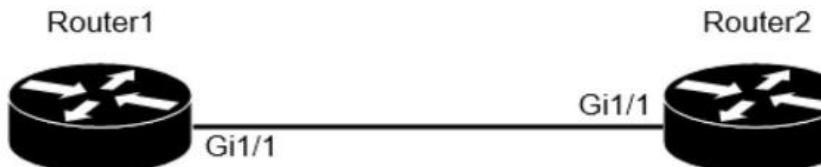
```
R1# show ip route | begin gateway
Gateway of last resort is not set
 172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C 172.16.1.0/24 is directly connected, FastEthernet0/0
L 172.16.1.1/32 is directly connected, FastEthernet0/0
EX 172.16.2.0/24 [170/2] via 207.165.200.250, 00:00:25, Serial0/0/0
O 192.168.1.0/24 [110/84437] via 207.165.200.254, 00:00:17, Serial0/0/1
D 192.168.2.0/24 [90/184437] via 207.165.200.254, 00:00:15. Serial0/0/1
E1 192.168.3.0/24 [110/1851437] via 207.165.200.254, 00:00:19, Serial0/0/1
 207.165.200.0/24 is variably subnetted, 4 subnets, 2 masks
C 207.165.200.248/30 is directly connected, Serial0/0/0
L 207.165.200.249/32 is directly connected, Serial0/0/0
C 207.165.200.252/30 is directly connected, Serial0/0/1
L 207.165.200.253/32 is directly connected, Serial0/0/1
```

- A. 192.168.10/24
- B. 192.168.3.0/24
- C. 192.168.2.0/24
- D. 172.16 1.0/24

**Answer:** C

**QUESTION 380**

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?



```

Router1(config)#interface GigabitEthernet1/1
Router1(config-if)#description ***Connection to Router2***
Router1(config-if)#ip address 10.10.10.1 255.255.255.252
Router1(config-if)#ip ospf hello-interval 5
Router1(config)#router ospf 1000
Router1(config-router)#router-id 1.1.1.1
Router1(config-router)#network 10.10.10.0 0.0.0.3 area 0

Router2(config)#interface GigabitEthernet1/1
Router2(config-if)#description ***Connection to Router1***
Router2(config-if)#ip address 10.10.10.2 255.255.255.252
Router2(config)#router ospf 1001
Router2(config-router)#router-id 2.2.2.2
Router2(config-router)#network 10.10.10.0 0.0.0.3 area 0
Router2(config-router)#passive-interface default
Router2(config-router)#no passive-interface GigabitEthernet1/1

```

- 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.

**Answer:** B

**Explanation:**

Ospf processes can differ on each router and neighborship will form Ospf area must be the same to form adjacency Hello and dead timers must match to form adjacency.

Ospf Default hello timer is 10 and dead timer is 40.

In This case R1 hello timer was modified to 5 seconds, Timers was not changed on R2 hence using the default timers.

#### QUESTION 381

What does a router do when configured with the default DNS lookup settings, and a URL is entered on the CLI?

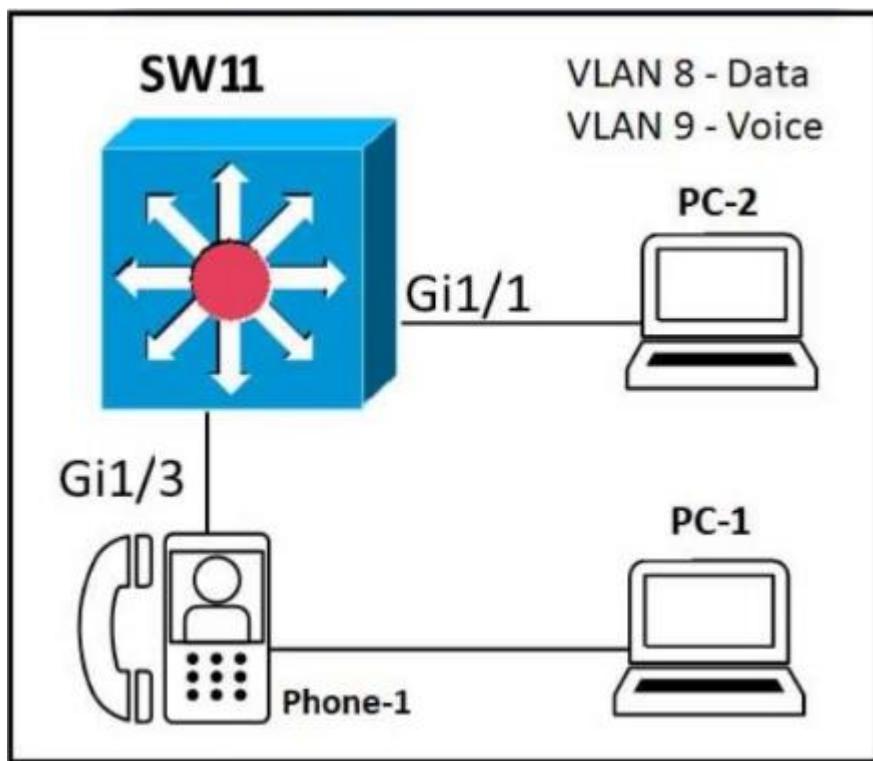
- A. initiates a ping request to the URL
- B. prompts the user to specify the desired IP address
- C. continuously attempts to resolve the URL until the command is cancelled
- D. sends a broadcast message in an attempt to resolve the URL

**Answer:** D

#### QUESTION 382

Refer to the exhibit. An administrator must configure interfaces Gi1/1 and Gi1/3 on switch SW11. PC-1 and PC-2 must be placed in the Data VLAN and Phone-1 must be placed in the Voice VLAN.

Which configuration meets these requirements?



- **interface gigabitethernet1/1**  
switchport mode access  
switchport access vlan 8  
!  
**interface gigabitethernet1/3**  
switchport mode access  
switchport voice vlan 8  
switchport access vlan 9
  
- **interface gigabitethernet1/1**  
switchport mode access  
switchport access vlan 9  
!  
**interface gigabitethernet1/3**  
switchport mode trunk  
switchport trunk vlan 8  
switchport trunk vlan 9
  
- **interface gigabitethernet1/1**  
switchport mode access  
switchport access vlan 8  
!  
**interface gigabitethernet1/3**  
switchport mode access  
switchport access vlan 8  
switchport voice vlan 9
  
- **interface gigabitethernet1/1**  
switchport mode access  
switchport access vlan 8  
!  
**interface gigabitethernet1/3**  
switchport mode trunk  
switchport trunk vlan 8  
switchport voice vlan 9

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

**Answer:** C

#### QUESTION 383

Which condition must be met before an NMS handles an SNMP trap from an agent?

- A. The NMS software must be loaded with the MIB associated with the trap.
- B. The NMS must be configured on the same router as the SNMP agent
- C. The NMS must receive a trap and an inform message from the SNMP agent within a configured interval
- D. The NMS must receive the same trap from two different SNMP agents to verify that it is reliable.

**Answer:** A

**QUESTION 384**

What is the effect when loopback interfaces and the configured router ID are absent during the OSPF Process configuration?

- A. No router ID is set, and the OSPF protocol does not run.
- B. The highest up/up physical interface IP address is selected as the router ID.
- C. The lowest IP address is incremented by 1 and selected as the router ID.
- D. The router ID 0.0.0.0 is selected and placed in the OSPF process.

**Answer:** B

**QUESTION 385**

Which device controls the forwarding of authentication requests for users when connecting to the network using a lightweight access point?

- A. TACACS server
- B. wireless access point
- C. RADIUS server
- D. wireless LAN controller

**Answer:** D

**QUESTION 386**

A network administrator must enable DHCP services between two sites. What must be configured for the router to pass DHCPDISCOVER messages on to the server?

- A. a DHCP Relay Agent
- B. DHCP Binding
- C. a DHCP Pool
- D. DHCP Snooping

**Answer:** A

**QUESTION 387**

A network administrator needs to aggregate 4 ports into a single logical link which must negotiate layer 2 connectivity to ports on another switch.

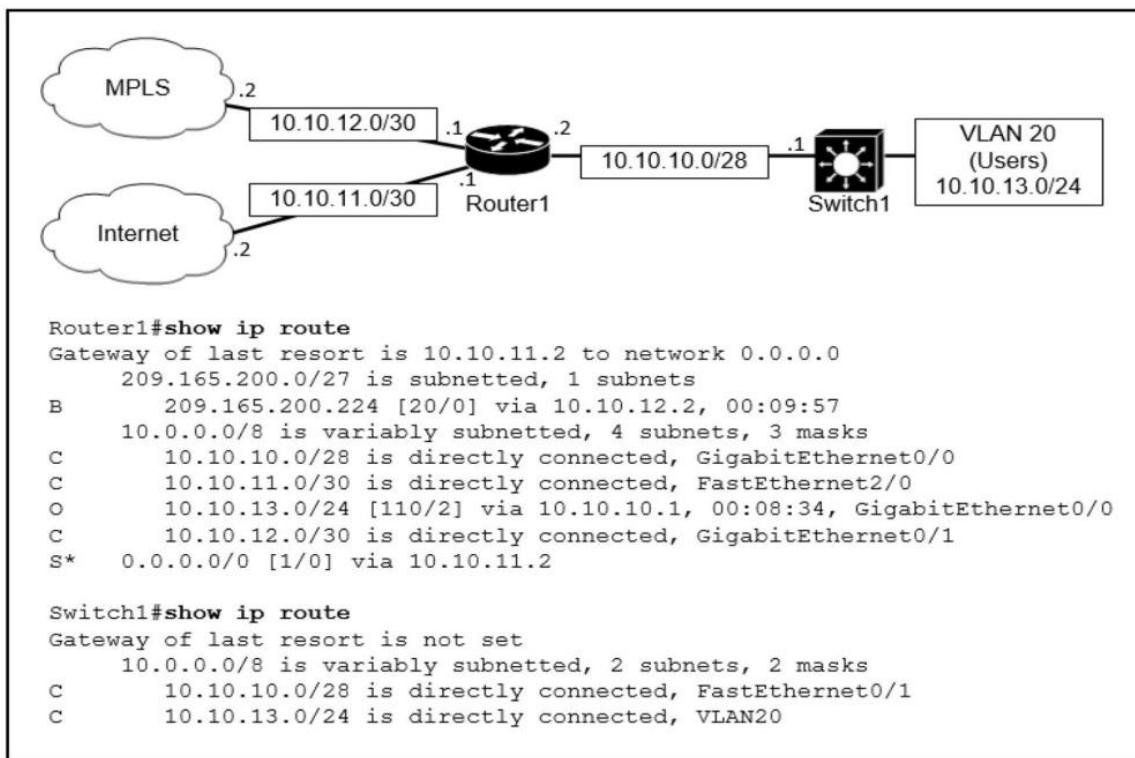
What must be configured when using active mode on both sides of the connection?

- A. 802.1q trunks
- B. Cisco vPC
- C. LLDP
- D. LACP

**Answer:** D

**QUESTION 388**

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



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

**Answer:** C

**Explanation:**

For internet traffic... the destination IP's can vary. Hence in this topology, it is using the default gateway 0.0.0.0. Path selection does not meet any other criteria so it has to use gateway of last resort.

### QUESTION 389

How does a Cisco Unified Wireless network respond to Wi-Fi channel overlap?

- A. It alternates automatically between 2.4 GHz and 5 GHz on adjacent access points
- B. It allows the administrator to assign channels on a per-device or per-interface basis.
- C. It segregates devices from different manufacturers onto different channels.
- D. It analyzes client load and background noise and dynamically assigns a channel.

**Answer:** D

**Explanation:**

[https://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/8-3/b\\_RRM\\_White\\_Paper/dca.html](https://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/8-3/b_RRM_White_Paper/dca.html)

### QUESTION 390

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

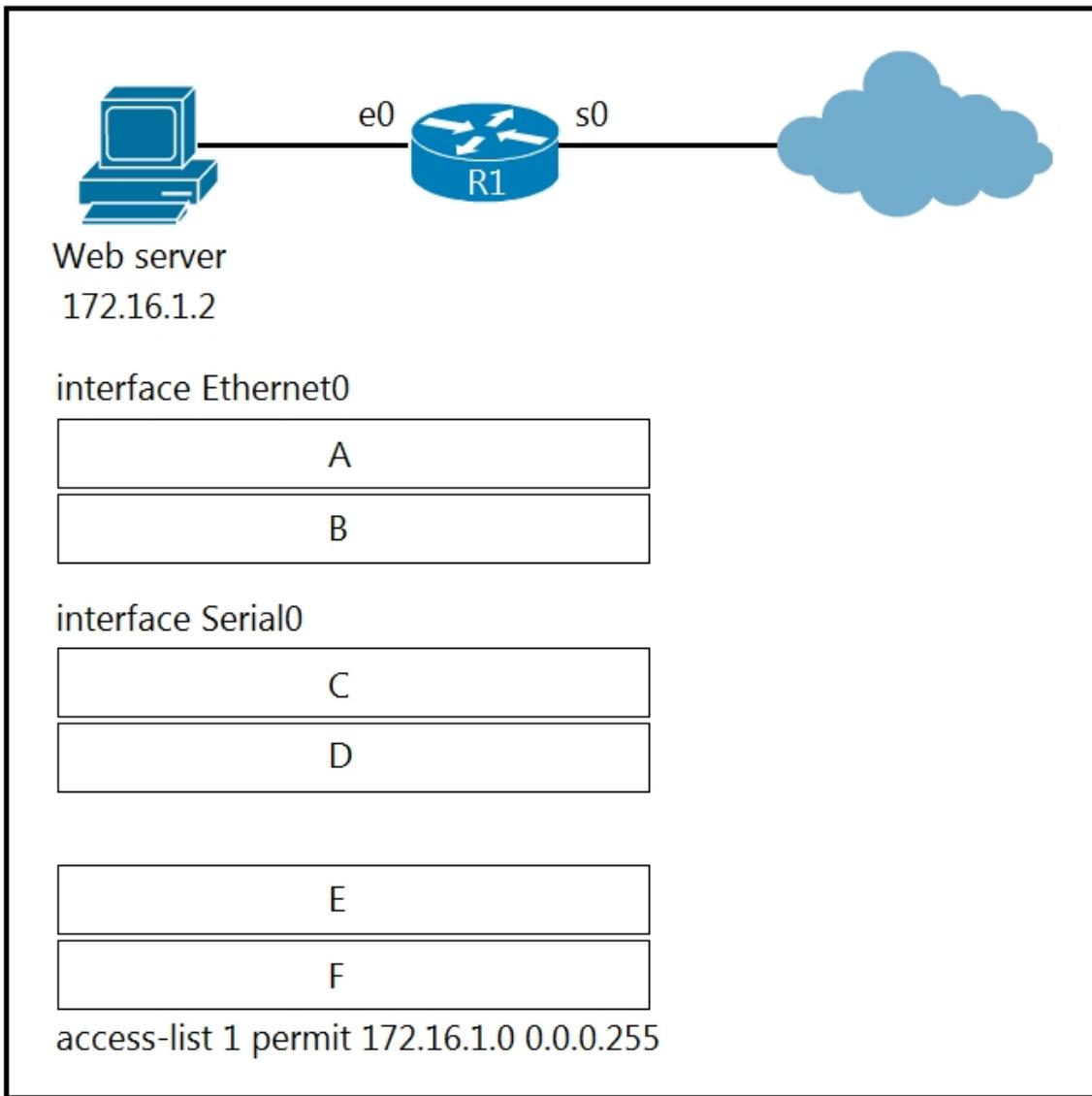
- A. TCP is reliable and is a connection-oriented protocol; UDP is not reliable and is a connectionless protocol
- B. TCP is not reliable and is a connection-oriented protocol; UDP is reliable and is a connectionless protocol
- C. TCP is not reliable and is a connectionless protocol; UDP is reliable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

**Answer:** A

**QUESTION 391**

Drag and Drop Question

Refer to the exhibit. An engineer is configuring the router to provide static NAT for the webserver. Drag and drop the configuration commands from the left onto the letters that correspond to its position in the configuration on the right.



|                                                                         |            |
|-------------------------------------------------------------------------|------------|
| ip address 172.16.1.1 255.255.255.0                                     | position A |
| ip address 45.83.2.214 255.255.255.240                                  | position B |
| ip nat inside                                                           | position C |
| ip nat inside source list 1 interface s0 overload                       | position D |
| ip nat inside source static tcp 172.16.1.2 80 45.83.2.214 80 extendable | position E |
| ip nat outside                                                          | position F |

**Answer:**

|                                                                            |                                                                            |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------|
| ip address 172.16.1.1 255.255.255.0                                        | ip address 172.16.1.1 255.255.255.0                                        |
| ip address 45.83.2.214 255.255.255.240                                     | ip nat inside                                                              |
| ip nat inside                                                              | ip address 45.83.2.214 255.255.255.240                                     |
| ip nat inside source list 1 interface s0<br>overload                       | ip nat outside                                                             |
| ip nat inside source static tcp 172.16.1.2<br>80 45.83.2.214 80 extendable | ip nat inside source static tcp 172.16.1.2<br>80 45.83.2.214 80 extendable |
| ip nat outside                                                             | ip nat inside source list 1 interface s0<br>overload                       |

**QUESTION 392**

Drag and Drop Question

Drag and drop the QoS congestion management terms from the left onto the description on the right.

|       |                                                                                       |
|-------|---------------------------------------------------------------------------------------|
| CBWGQ | places packets into one of four priority-based queue                                  |
| CQ    | provides guaranteed bandwidth to a specified class of traffic                         |
| FIFO  | provides minimum guaranteed bandwidth to one or more flows                            |
| PQ    | services a specified number of bytes in one queue before continuing to the next queue |
| WFQ   | uses store-and-forward queuing                                                        |

**Answer:**

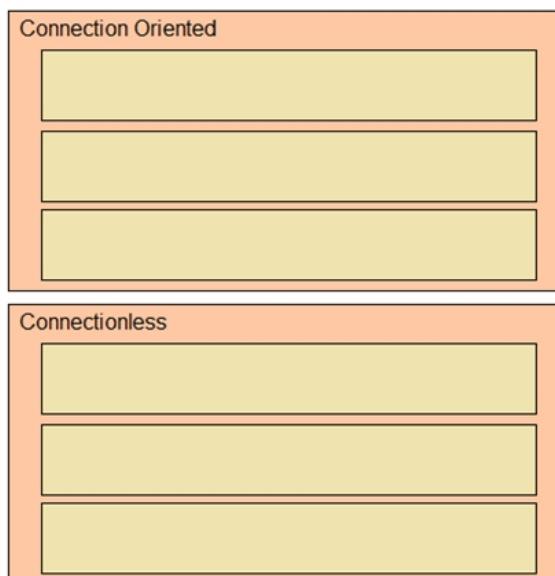
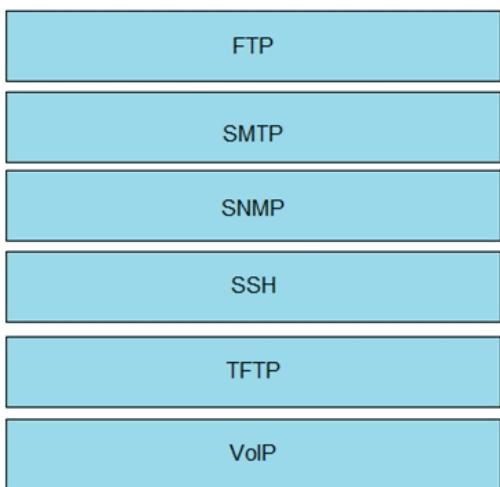


**QUESTION 393**

Drag and Drop Question

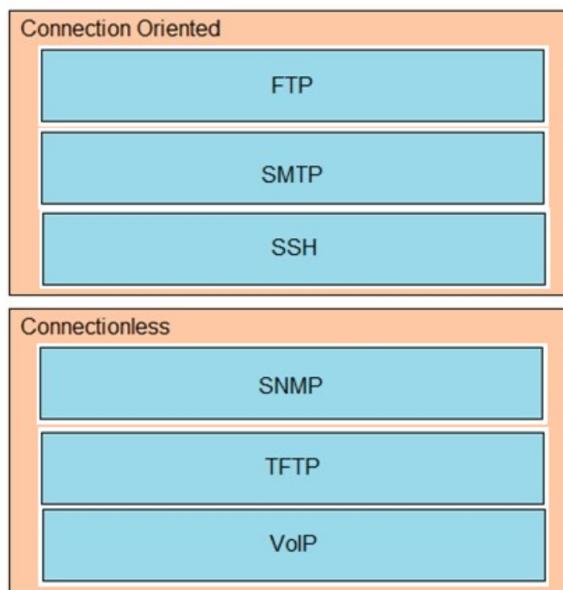
Drag and drop the network protocols from the left onto the correct transport services on the right.

**Answer Area**



**Answer:**

**Answer Area**



**QUESTION 394**

With REST API, which standard HTTP header tells a server which media type is expected by the client?

- A. Accept-Encoding: gzip, deflate
- B. Accept-Patch: text/example; charset=utf-8
- C. Content-Type: application/json; charset=utf-8
- D. Accept: application/json

**Answer:** D

**Explanation:**

Accept header is a way for a client to specify the media type of the response content it is expecting and Content-type is a way to specify the media type of request being sent from the client to the server.

**QUESTION 395**

Drag and Drop Question

Drag and drop the SNMP manager and agent identifier commands from the left onto the functions on the right

|                     |                                                   |
|---------------------|---------------------------------------------------|
| show snmp chassis   | displays information about the SNMP recipient     |
| show snmp community | displays the IP address of the remote SNMP device |
| show snmp engineID  | displays the SNMP security model in use           |
| show snmp group     | displays the SNMP access string                   |
| show snmp host      | displays the SNMP server serial number            |

**Answer:**

|                     |
|---------------------|
| show snmp host      |
| show snmp engineID  |
| show snmp group     |
| show snmp community |
| show snmp chassis   |

**QUESTION 396**

Drag and Drop Question

Drag and drop the DHCP snooping terms from the left onto the descriptions on the right.

|                           |                                                                            |
|---------------------------|----------------------------------------------------------------------------|
| DHCP server               | list of hosts on the network that are unknown to the administrative domain |
| snooping binding database | network component that propagates IP addresses to hosts on the network     |
| spurious DHCP server      | internal device under the control of the network administrator             |
| trusted                   | unknown DHCP server within an administrative domain                        |
| untrusted                 | default state of all interface                                             |

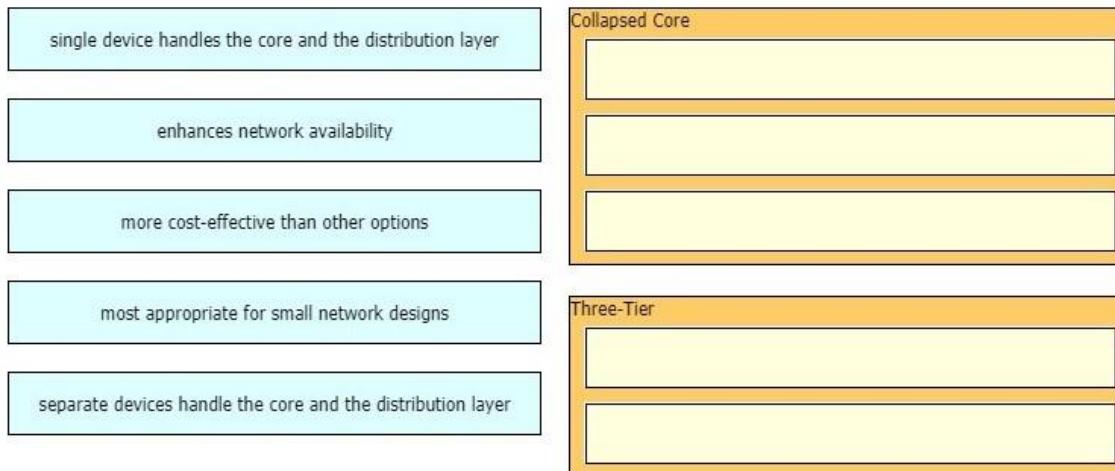
**Answer:**

|                           |                                                                            |
|---------------------------|----------------------------------------------------------------------------|
| snooping binding database | list of hosts on the network that are unknown to the administrative domain |
| DHCP server               | network component that propagates IP addresses to hosts on the network     |
| trusted                   | internal device under the control of the network administrator             |
| spurious DHCP server      | unknown DHCP server within an administrative domain                        |
| untrusted                 | default state of all interface                                             |

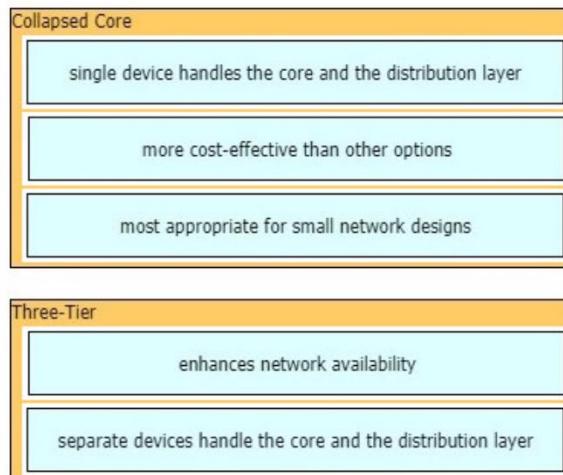
### QUESTION 397

Drag and Drop Question

Drag and drop the characteristics of network architectures from the left onto the type of architecture on the right.



**Answer:**



### QUESTION 398

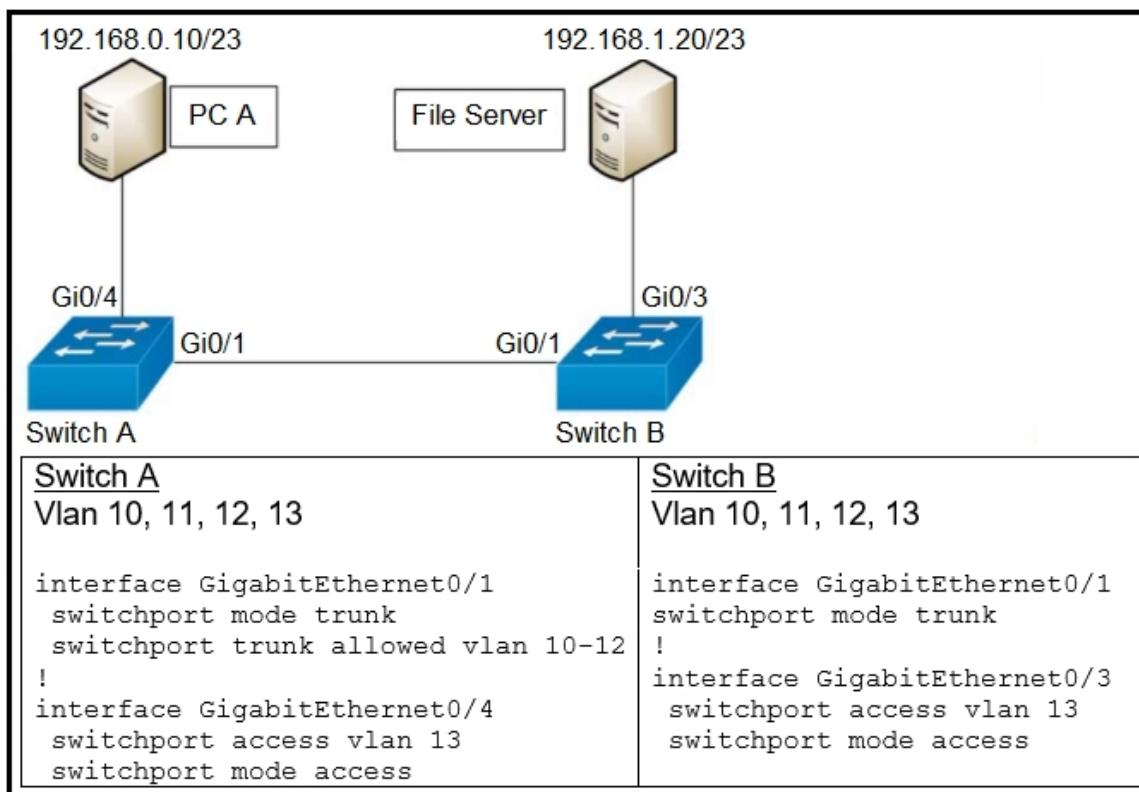
What is a DNS lookup operation?

- A. DNS server pings the destination to verify that it is available
- B. serves requests over destination port 53
- C. DNS server forwards the client to an alternate IP address when the primary IP is down
- D. responds to a request for IP address to domain name resolution to the DNS server

**Answer:** D

### QUESTION 399

Refer to the exhibit. A network engineer must configured communication between PC A and the File Server. To prevent interruption for any other communications, which command must be configured?



- A. Switch trunk allowed vlan 12
- B. Switchport trunk allowed vlan none
- C. Switchport trunk allowed vlan add 13
- D. Switchport trunk allowed vlan remove 10-11

**Answer:** C

**Explanation:**

The switchport trunk allowed vlan command is used to specify the list of VLANs that are allowed on a trunk port. When a Layer 2 interface on a Cisco IOS device is configured to operate in trunk mode, the default setting is for the interface to carry all of the VLANs defined on the switch.

#### QUESTION 400

Which implementation provides the strongest encryption combination for the wireless environment?

- A. WPA2 + AES
- B. WPA + AES
- C. WEP
- D. WPA + TKIP

**Answer:** A

#### QUESTION 401

What is a characteristic of a SOHO network?

- A. connects each switch to every other switch in the network
- B. enables multiple users to share a single broadband connection
- C. provides high throughput access for 1000 or more users
- D. includes at least three tiers of devices to provide load balancing and redundancy

**Answer:** B

**QUESTION 402**

Refer to the exhibit. After running the code in the exhibit, which step reduces the amount of data that the NETCONF server returns to the NETCONF client, to only the interface's configuration?

```
import ncclient

with ncclient.manager.connect(host='192.168.1.1', port=830, username='root',
 password='teset123!', allow_agent=False) as m:
 print(m.get_config('running').data_xml)
```

- A. Use the lxml library to parse the data returned by the NETCONF server for the interface's configuration.
- B. Create an XML filter as a string and pass it to get\_config() method as an argument.
- C. Create a JSON filter as a string and pass it to the get\_config() method as an argument.
- D. Use the JSON library to parse the data returned by the NETCONF server for the interface's configuration.

**Answer:** D

**QUESTION 403**

Which resource is able to be shared among virtual machines deployed on the same physical server?

- A. disk
- B. applications
- C. VM configuration file
- D. operating system

**Answer:** A

**QUESTION 404**

Which WAN topology provides a combination of simplicity quality, and availability?

- A. partial mesh
- B. full mesh
- C. point-to-point
- D. hub-and-spoke

**Answer:** A

**Explanation:**

Full mesh and more so partial mesh from an enterprise perspective is anything but simple. Simplicity is the key word as in it's something a SOHO for example would prefer.

A dedicated point-to-point connection is still more available than a normal (consumer) broadband connection, which most people and companies use (with VPN).

**QUESTION 405**

Which command on a port enters the forwarding state immediately when a PC is connected to it?

- A. switch(config)#spanning-tree portfast default
- B. switch(config)#spanning-tree portfast bpduguard default
- C. switch(config-if)#spanning-tree portfast trunk
- D. switch(config-if)#no spanning-tree portfast

**Answer:** A

**Explanation:**

Portfast (spanning-tree portfast command) does two things for us:

- Interfaces with portfast enabled that come up will go to forwarding mode immediately, the interface will skip the listening and learning state.
- A switch will never generate a topology change notification for an interface that has portfast enabled.

<https://networklessons.com/switching/cisco-portfast-configuration>

<https://www.dummies.com/programming/networking/cisco/spanning-tree-protocol-stp-and-portfast/>

**QUESTION 406**

What are two functions of an SDN controller? (Choose two)

- A. Layer 2 forwarding
- B. coordinating VTNs
- C. tracking hosts
- D. managing the topology
- E. protecting against DDoS attacks

**Answer:** BD

**QUESTION 407**

What is a network appliance that checks the state of a packet to determine whether the packet is legitimate?

- A. Layer 2 switch
- B. load balancer
- C. firewall
- D. LAN controller

**Answer:** C

**QUESTION 408**

When DHCP is configured on a router, which command must be entered so the default gateway is automatically distributed?

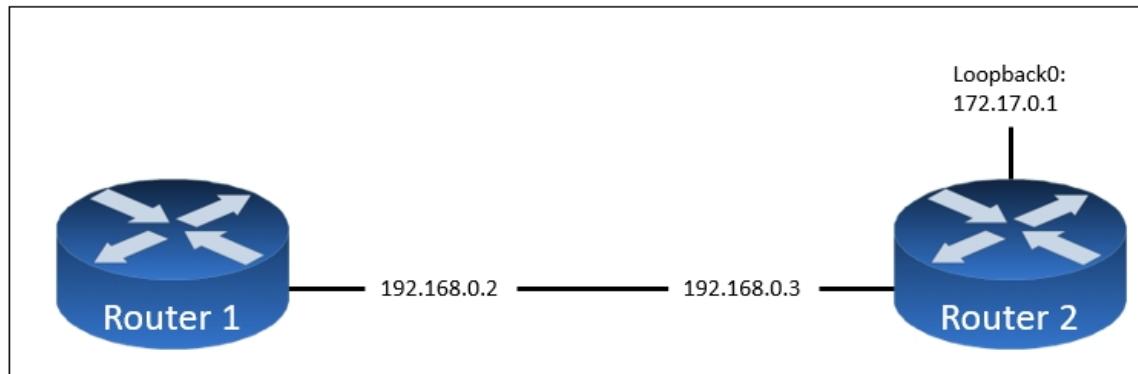
- A. default-router

- B. default-gateway
- C. ip helper-address
- D. dns-server

**Answer:** A

#### QUESTION 409

Refer to the exhibit. The ntp server 192.168.0.3 command has been configured on router 1 to make it an NTP client of router 2. Which command must be configured on router 2 so that it operates in server-only mode and relies only on its internal clock?



- A. Router2(config)#ntp passive
- B. Router2(config)#ntp server 172.17.0.1
- C. Router2(config)#ntp master 4
- D. Router2(config)#ntp server 192.168.0.2

**Answer:** C

**Explanation:**

ntp master {stratum-level}: NTP server mode - the device acts only as an NTP server, and not as an NTP client. The device gets its time information from the internal clock on the device.

ntp server {address | hostname}: NTP client/server mode - the device acts as both client and server. First, it acts as an NTP client, to synchronize time with a server. Once synchronized, the device can then act as an NTP server, to supply time to other NTP clients.

#### QUESTION 410

What is an appropriate use for private IPv4 addressing?

- A. on the public-facing interface of a firewall
- B. to allow hosts inside to communicate in both directions with hosts outside the organization
- C. on internal hosts that stream data solely to external resources
- D. on hosts that communicate only with other internal hosts

**Answer:** D

#### QUESTION 411

Why does a switch flood a frame to all ports?

- A. The frame has zero destination MAC addresses.

- B. The source MAC address of the frame is unknown
- C. The source and destination MAC addresses of the frame are the same
- D. The destination MAC address of the frame is unknown.

**Answer:** D

**Explanation:**

Switches tend to flood frame with the Unknown Destination MAC Address out all ports apart from the Originating (apart from the one it received) port.

#### QUESTION 412

If a switch port receives a new frame while it is actively transmitting a previous frame, how does it process the frames?

- A. The new frame is delivered first, the previous frame is dropped, and a retransmission request is sent.
- B. The previous frame is delivered, the new frame is dropped, and a retransmission request is sent.
- C. The new frame is placed in a queue for transmission after the previous frame.
- D. The two frames are processed and delivered at the same time.

**Answer:** C

#### QUESTION 413

How is the native VLAN secured in a network?

- A. separate from other VLANs within the administrative domain
- B. give it a value in the private VLAN range
- C. assign it as VLAN 1
- D. configure it as a different VLAN ID on each end of the link

**Answer:** A

#### QUESTION 414

What is the purpose of a southbound API in a control based networking architecture?

- A. Facilities communication between the controller and the applications
- B. Facilities communication between the controller and the networking hardware
- C. allows application developers to interact with the network
- D. integrates a controller with other automation and orchestration tools.

**Answer:** B

**Explanation:**

In a controller-based network architecture, the controller needs to communicate to the networking devices.

#### QUESTION 415

What causes a port to be placed in the err-disabled state?

- A. latency

- B. port security violation
- C. shutdown command issued on the port
- D. nothing plugged into the port

**Answer:** B

**Explanation:**

This mode is the default violation mode; when in this mode, the switch will automatically force the switchport into an error disabled (err-disable) state when a violation occurs. While in this state, the switchport forwards no traffic. The switchport can be brought out of this error disabled state by issuing the errdisable recovery cause CLI command or by disabling and reenabling the switchport.

#### QUESTION 416

Which switch technology establishes a network connection immediately when it is plugged in?

- A. PortFast
- B. BPDU guard
- C. UplinkFast
- D. BackboneFast

**Answer:** A

**Explanation:**

PortFast causes a switch or trunk port to enter the spanning tree forwarding state immediately, bypassing the listening and learning states.

You can use PortFast on switch or trunk ports that are connected to a single workstation, switch, or server to allow those devices to connect to the network immediately, instead of waiting for the port to transition from the listening and learning states to the forwarding state.

<https://www.ccexpert.us/routing-switching/portfast-uplinkfast-and-backbonefast.html>

#### QUESTION 417

Which technology is appropriate for communication between an SDN controller and applications running over the network?

- A. OpenFlow
- B. REST API
- C. NETCONF
- D. Southbound API

**Answer:** B

**Explanation:**

use northbound (REST API) in communication between your applications and controller.

use southbound (OpenFlow, OpFlex, RESTCONF, NETCONF) in communication between controller and network devices.

#### QUESTION 418

What is a characteristic of private IPv4 addressing?

- A. traverse the Internet when an outbound ACL is applied
- B. issued by IANA in conjunction with an autonomous system number
- C. composed of up to 65,536 available addresses

- D. used without tracking or registration

**Answer:** D

**QUESTION 419**

Which security program element involves installing badge readers on data-center doors to allow workers to enter and exit based on their job roles?

- A. role-based access control
- B. biometrics
- C. multifactor authentication
- D. physical access control

**Answer:** D

**Explanation:**

Access control readers give access to the building based on established credentials. Things like a key card, key fob, or biometrics like fingerprints are all considered established credentials.

**QUESTION 420**

Which network action occurs within the data plane?

- A. compare the destination IP address to the IP routing table.
- B. run routing protocols (OSPF, EIGRP, RIP, BGP)
- C. make a configuration change from an incoming NETCONF RPC
- D. reply to an incoming ICMP echo request

**Answer:** A

**Explanation:**

The role of ICMP is to provide information about the path the data is taking from its point of origin to its destination. It has the same basic structure as an IP packet, but despite that, it's not really goodput. It's there to control 'how things are done', therefore, is part of the control plane.

**QUESTION 421**

When should an engineer implement a collapsed-core architecture?

- A. for small networks with minimal need for growth
- B. the access and distribution layers must be on the same device
- C. for large networks that are connected to multiple remote sites
- D. only when using VSS technology

**Answer:** C

**QUESTION 422**

What uses HTTP messages to transfer data to applications residing on different hosts?

- A. OpenFlow
- B. OpenStack
- C. OpFlex
- D. REST

**Answer:** D**Explanation:**

A RESTful API is an architectural style for an application program interface (API) that uses HTTP requests to access and use data. That data can be used to GET, PUT, POST and DELETE data types, which refers to the reading, updating, creating and deleting of operations concerning resources.

<https://searchapparchitecture.techtarget.com/definition/RESTful-API>

**QUESTION 423**

What is a role of access points in an enterprise network?

- A. connect wireless devices to a wired network
- B. support secure user logins to devices or the network
- C. integrate with SNMP in preventing DDoS attacks
- D. serve as a first line of defense in an enterprise network

**Answer:** A**QUESTION 424**

Which protocol does an access point use to draw power from a connected switch?

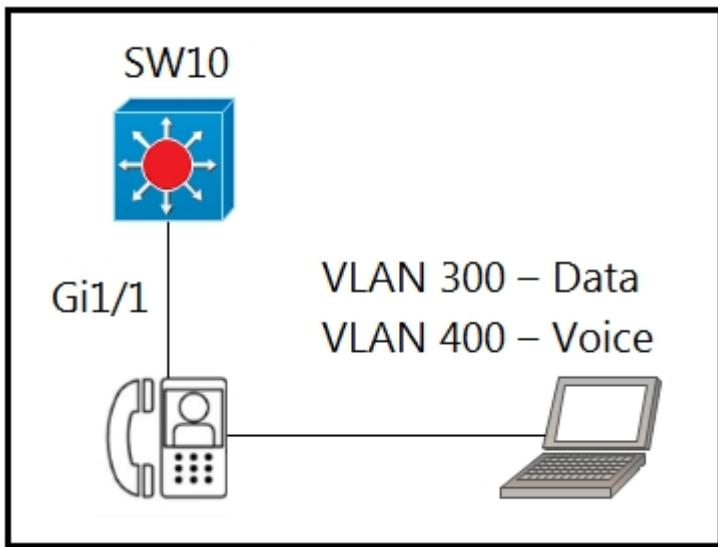
- A. Internet Group Management Protocol
- B. Adaptive Wireless Path Protocol
- C. Cisco Discovery Protocol
- D. Neighbor Discovery Protocol

**Answer:** C**Explanation:**

PoE switches support Cisco pre-standard PD detection mechanisms, and any Standards based compliant PDs. Most Cisco made PDs, pre-standard or standard, support Cisco Discovery Protocol (CDP). Once power is applied to a port that contains a pre-standard or standard Cisco PD, CDP is used in order to determine the actual power requirement, and the system power budget is adjusted accordingly.

**QUESTION 425**

Refer to the exhibit. An engineer must configure GigabitEthernet1/1 to accommodate voice and data traffic. Which configuration accomplishes this task?



- A. interface gigabitethernet1/1  
switchport mode access  
switchport access vlan 300  
switchport voice vlan 400
- B. interface gigabitethernet1/1  
switchport mode trunk  
switchport trunk vlan 300  
switchport trunk vlan 400
- C. interface gigabitethernet1/1  
switchport mode access  
switchport voice vlan 300  
switchport access vlan 400
- D. interface gigabitethernet1/1  
switchport mode trunk  
switchport trunk vlan 300  
switchport voice vlan 400

**Answer:** A

#### QUESTION 426

When a WLAN with WPA2 PSK is configured in the Wireless LAN Controller GUI which format is supported?

- A. Unicode
- B. base64
- C. decimal
- D. ASCII

**Answer:** D

#### QUESTION 427

Which networking function occurs on the data plane?

- A. forwarding remote client/server traffic
- B. facilitates spanning-tree elections
- C. processing inbound SSH management traffic
- D. sending and receiving OSPF Hello packets

**Answer:** A

**Explanation:**

Networking devices operate in two planes; the data plane and the control plane. The control plane maintains Layer 2 and Layer 3 forwarding mechanisms using the CPU. The data plane forwards traffic flows

#### **QUESTION 428**

An engineer needs to add an old switch back into a network.

To prevent the switch from corrupting the VLAN database which action must be taken?

- A. Add the switch in the VTP domain with a lower revision number
- B. Add the switch with DTP set to dynamic desirable
- C. Add the switch in the VTP domain with a higher revision number
- D. Add the switch with DTP set to desirable

**Answer:** A

**Explanation:**

Before adding a VTP client to a VTP domain, always verify that its VTP configuration revision number is lower than the configuration revision number of the other switches in the VTP domain. Switches in a VTP domain always use the VLAN configuration of the switch with the highest VTP configuration revision number.

#### **QUESTION 429**

What does an SDN controller use as a communication protocol to relay forwarding changes to a southbound API?

- A. OpenFlow
- B. Java
- C. REST
- D. XML

**Answer:** A

**Explanation:**

Southbound APIs facilitate control over the network and enable the SDN Controller to dynamically make changes according to real-time demands and needs.

OpenFlow, which was developed by the Open Networking Foundation (ONF), is the first and probably most well-known southbound interface. 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. With OpenFlow, entries can be added and removed to the internal flow-table of switches and routers to make the network more responsive to real-time traffic demands.

#### **QUESTION 430**

What is a similarity between OM3 and OM4 fiber optic cable?

- A. Both have a 50 micron core diameter

- B. Both have a 9 mic on core diameter
- C. Both have a 62.5 micron core diameter
- D. Both have a 100 micron core diameter

**Answer:** A

**QUESTION 431**

Which JSON data type is an unordered set of attribute-value pairs?

- A. array
- B. string
- C. object
- D. Boolean

**Answer:** C

**QUESTION 432**

A network engineer must configure the router R1 GigabitEthernet1/1 interface to connect to the router R2 GigabitEthernet1/1 interface. For the configuration to be applied the engineer must compress the address 2001:0db8:0000:0000:0500:000a:400F:583B.

Which command must be issued on the interface?

- A. ipv6 address 2001:0db8::5:a:4F:583B
- B. ipv6 address 2001:db8::500:a:400F:583B
- C. ipv6 address 2001 db8:0::500:a:4F:583B
- D. ipv6 address 2001::db8:0000::500:a:400F:583B

**Answer:** B

**QUESTION 433**

What is the benefit of using FHRP?

- A. reduced management overhead on network routers
- B. balancing traffic across multiple gateways in proportion to their loads
- C. higher degree of availability
- D. reduced ARP traffic on the network

**Answer:** C

**QUESTION 434**

Which two QoS tools provides congestion management? ( Choose two )

- A. CAR
- B. CBWFQ
- C. PQ
- D. PBR
- E. FRTS

**Answer:** BC

**Explanation:**

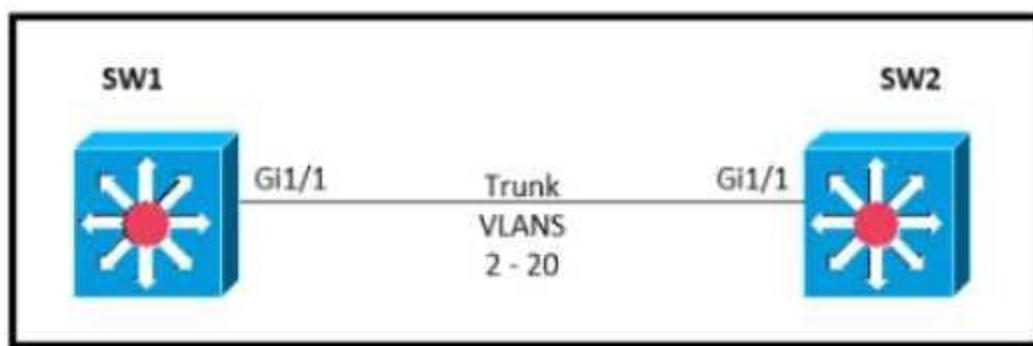
Type of queuing methods are available:

- First-In-First-Out (FIFO)
- Priority Queuing (PQ)
- Custom Queuing (CQ)
- Weighted Fair Queueing (WFQ)
- Class-Based Weighted Fair Queueing (CBWFQ)
- Low-Latency Queueing (LLQ)

<https://www.orbit-computer-solutions.com/qos-congestion-management-tools/>

**QUESTION 435**

Refer to the exhibit. Which command must be executed for Gi1.1 on SW1 to become a trunk port if Gi1/1 on SW2 is configured in desirable or trunk mode?



- A. switchport mode trunk
- B. switchport mode dot1-tunnel
- C. switchport mode dynamic auto
- D. switchport mode dynamic desirable

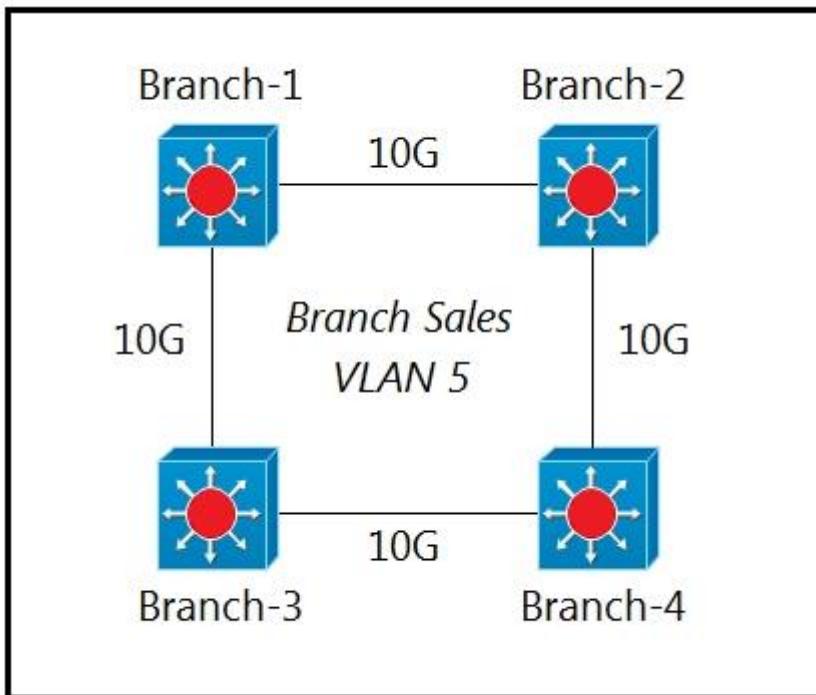
**Answer:** C

**QUESTION 436**

Refer to the exhibit. Only four switches are participating in the VLAN spanning-tree process.

Branch-1 priority 614440  
Branch-2: priority 39082416  
Branch-3: priority 0  
Branch-4: root primary

Which switch becomes the permanent root bridge for VLAN 5?



- A. Branch-1
- B. Branch-2
- C. Branch-3
- D. Branch-4

**Answer:** C

**Explanation:**

Ideally the root bridge is placed on a core switch, and a secondary root bridge is designated to minimize changes to the overall spanning tree. Root bridge placement is accomplished by lowering the system priority on the root bridge to the lowest value possible, raising the secondary root bridge to a value slightly higher than that of the root bridge, and (ideally) increasing the system priority on all other switches. This ensures consistent placement of the root bridge.

#### QUESTION 437

A network administrator must to configure SSH for remote access to router R1. The requirement is to use a public and private key pair to encrypt management traffic to and from the connecting client. Which configuration, when applied, meets the requirements?

- A. R1#enable R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate ec keysizze 1024
- B. R1#enable R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate ec keysizze 2048
- C. R1#enable R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key encrypt rsa name myKey
- D. R1#enable R1#configure terminal  
R1(config)#ip domain-name cisco.com

R1(config)#crypto key generate rsa modulus 1024

**Answer:** D

**Explanation:**

crypto key generate rsa [general-keys | usage-keys | signature | encryption] [label key-label] [exportable] [modulus modulus-size] [storage devicename :] [redundancy] [on devicename :]

modulus modulus-size

By default, the modulus of a certification authority (CA) key is 1024 bits. The recommended modulus for a CA key is 2048 bits. The range of a CA key modulus is from 350 to 4096 bits. As the default key is 1024 bits.

#### QUESTION 438

When deploying syslog, which severity level logs informational message?

- A. 0
- B. 2
- C. 4
- D. 6

**Answer:** D

**Explanation:**

Number of the desired severity level at which messages should be logged. Messages at or numerically lower than the specified level are logged. Severity levels are as follows:

- 0 —emergency: System unusable
- 1 —alert: Immediate action needed
- 2 —critical: Critical condition—default level
- 3 —error: Error condition
- 4 —warning: Warning condition
- 5 —notification: Normal but significant condition
- 6 —informational: Informational message only
- 7 —debugging: Appears during debugging only

#### QUESTION 439

An engineer observes high usage on the 2.4GHz channels and lower usage on the 5GHz channels. What must be configured to allow clients to preferentially use 5GHz access points?

- A. Re-Anchor Roamed Clients
- B. 11ac MU-MIMO
- C. OEAP Split Tunnel
- D. Client Band Select

**Answer:** D

**Explanation:**

Band Select is Cisco's terminology for Band Steering. When enabled it encourages stations onto the 5 GHz band. This is achieved by suppressing 2.4 GHz probe response frames to station probe requests and by responding with 5 GHz probe response frames first.

#### QUESTION 440

An administrator must secure the WLC from receiving spoofed association requests.

Which steps must be taken to configure the WLC to restrict the requests and force the user to wait 10 ms to retry an association request?

- A. Enable Security Association Teardown Protection and set the SA Query timeout to 10
- B. Enable MAC filtering and set the SA Query timeout to 10
- C. Enable 802.1x Layer 2 security and set the Comeback timer to 10
- D. Enable the Protected Management Frame service and set the Comeback timer to 10

**Answer:** C

**Explanation:**

Step 1. You need to enable protected management frame under the SSID configured with 802.1x/PSK. You have three options as shown in the image.

Step 2. You then need to specify the Comeback timer and SA query timeout. Comeback timer specifies the time which an associated client must wait before the association can be tried again when first denied with a status code 30. SA query timeout specifies the amount of time the WLC waits for a response from the client for the query process. If there is no response from the client, its association is deleted from the controller. This is done as shown in the image.

<https://www.cisco.com/c/en/us/support/docs/wireless-mobility/wireless-lan-wlan/212576-configure-802-11w-management-frame-prote.html#anc8>

#### **QUESTION 441**

What are two improvements provided by automation for network management in an SDN environment? (Choose two)

- A. Data collection and analysis tools establish a baseline for the network
- B. Artificial intelligence identifies and prevents potential design failures.
- C. Machine learning minimizes the overall error rate when automating troubleshooting processes
- D. New devices are onboarded with minimal effort
- E. Proprietary Cisco APIs leverage multiple network management tools.

**Answer:** BE

#### **QUESTION 442**

Refer to the exhibit. Shortly after SiteA was connected to SiteB over a new single-mode fiber path, users at SiteA report intermittent connectivity issues with applications hosted at SiteB. What is the cause of the intermittent connectivity issue?

```

SiteA#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
 Hardware is BUILT-IN-EPA-8x10G, address is 780c.f02a.db91 (bia 780a.f02b.db91)
 Description: Connection to SiteB
 Internet address is 10.10.10.1/30
 MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
 reliability 166/255, txload 1/255, rxload 1/255
 Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
 5 minute input rate 264797000 bits/sec, 26672 packets/sec
 5 minute output rate 122464000 bits/sec, 15724 packets/sec

SiteB#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
 Hardware is BUILT-IN-EPA-8x10G, address is 780c.f02c.db26 (bia 780c.f02c.db26)
 Description: Connection to SiteA
 Internet address is 10.10.10.2/30
 MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
 reliability 255/255, txload 1/255, rxload 1/255
 Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
 5 minute input rate 122464000 bits/sec, 15724 packets/sec
 5 minute output rate 264797000 bits/sec, 26672 packets/sec

```

- A. Interface errors are incrementing
- B. An incorrect SFP media type was used at SiteA
- C. High usage is causing high latency
- D. The sites were connected with the wrong cable type

**Answer:** A

**Explanation:**

reliability 255/255: When the input and output errors increase, they affect the reliability counter. This indicates how likely it is that a packet can be delivered or received successfully. Reliability is calculated like this: reliability = number of packets / number of total frames. The value of 255 is the highest value meaning that the interface is very reliable at the moment. The calculation above is done every 5 minutes.

#### QUESTION 443

Which technology allows for multiple operating systems to be run on a single host computer?

- A. virtual routing and forwarding
- B. network port ID v sualization
- C. virtual device on exts
- D. server visualization

**Answer:** D

#### QUESTION 444

How does authentication differ from authorization?

- A. Authentication verifies the identity of a person accessing a network, and authorization determines what resource a user can access.
- B. Authentication is used to record what resource a user accesses, and authorization is used to determine what resources a user can access
- C. Authentication is used to determine what resources a user is allowed to access, and authorization is used to track what equipment is allowed access to the network

- D. Authentication is used to verify a person's identity, and authorization is used to create syslog messages for logins.

**Answer:** A

**QUESTION 445**

What occurs when overlapping Wi-Fi channels are implemented?

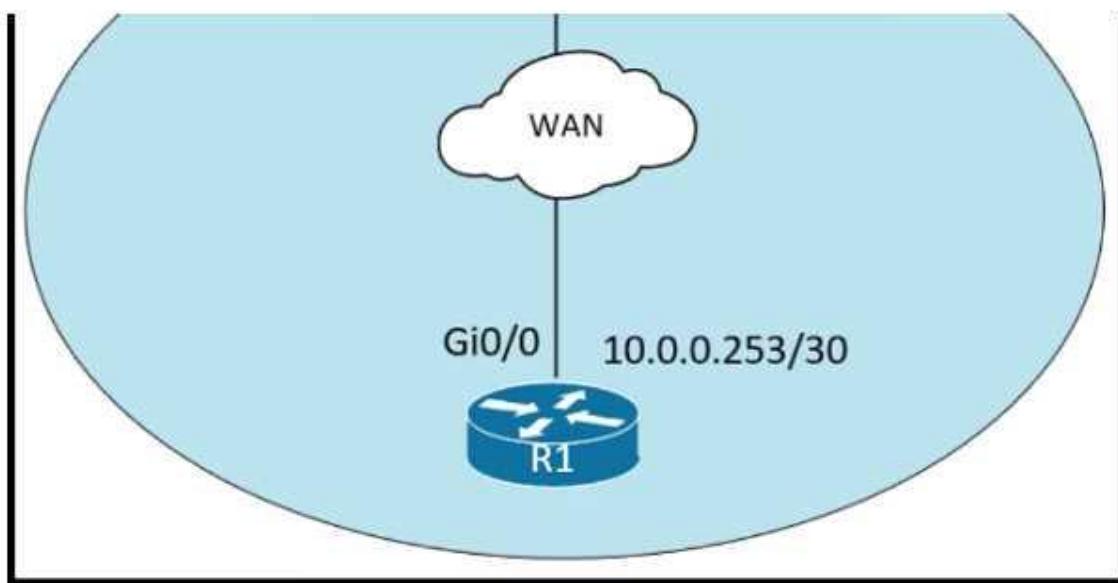
- A. The wireless network becomes vulnerable to unauthorized access.
- B. Wireless devices are unable to distinguish between different SSIDs
- C. Users experience poor wireless network performance.
- D. Network communications are open to eavesdropping.

**Answer:** C

**QUESTION 446**

Refer to the exhibit. An administrator must turn off the Cisco Discovery Protocol on the port configured with address last usable address in the 10.0.0.0/30 subnet.

Which command set meets the requirement?

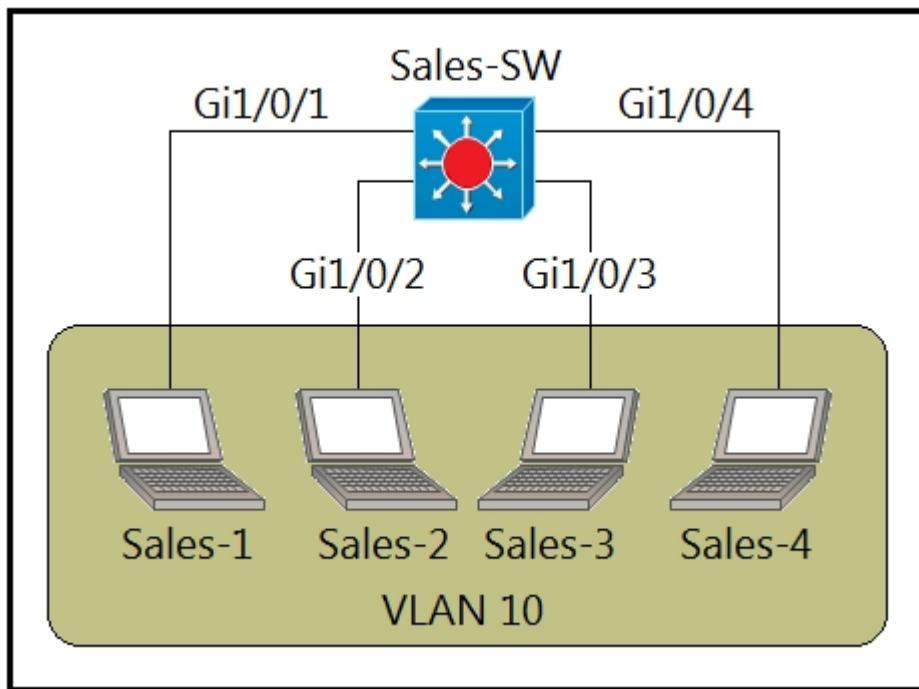


- A. interface gi0/1  
no cdp enable
- B. interface gi0/1  
clear cdp table
- C. interface gi0/0  
no cdp advertise-v2
- D. interface gi0/0  
no cdp run

**Answer:** D

**QUESTION 447**

Refer to the exhibit. The entire contents or the MAC address table are shown. Sales-4 sends a data frame to Sales-1.



Sales-SW#show mac-address-table

Mac Address Table

---

| VLAN | MAC Address    | Type    | Ports   |
|------|----------------|---------|---------|
| 10   | 000c.8590.bb7d | DYNAMIC | Gi1/0/1 |
| 10   | 3939.1170.1bb7 | DYNAMIC | Gi1/0/2 |
| 10   | 00d0.d3b6.957c | DYNAMIC | Gi1/0/3 |

Sales-SW#

What does the switch do as it receives the frame from Sales-4?

- A. Perform a lookup in the MAC address table and discard the frame due to a missing entry.
- B. Insert the source MAC address and port into the forwarding table and forward the frame to Sales- 1.
- C. Map the Layer 2 MAC address to the Layer 3 IP address and forward the frame.
- D. Flood the fr me out of all ports except on the port where Sales-1 is connected.

**Answer:** B

**QUESTION 448**

Which 802.11 management frame type is sent when a client roams between access points on the same SSID?

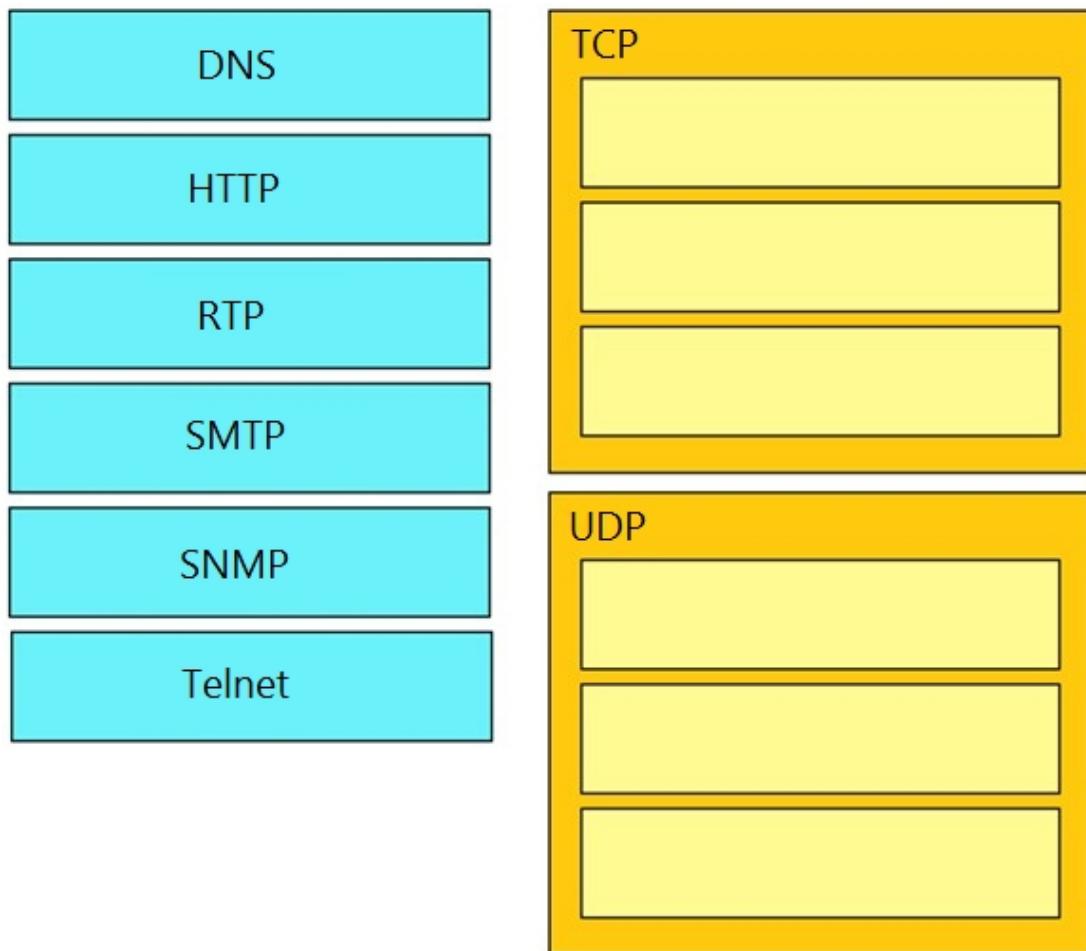
- A. Reassociation Request
- B. Probe Request
- C. Authentication Request
- D. Association Request

**Answer:** A

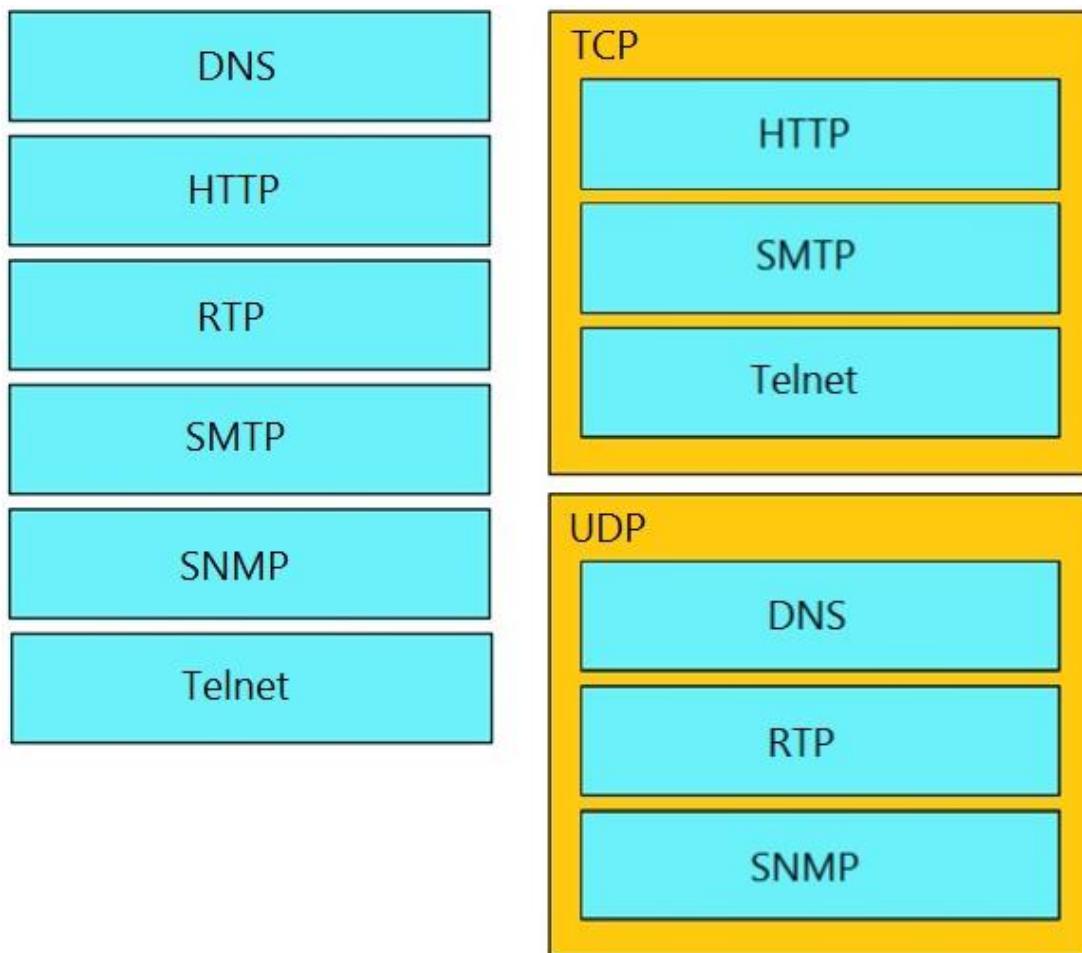
**QUESTION 449**

Drag and Drop Question

Drag and drop the TCP/IP protocols from the left onto their primary transmission protocols on the right.



**Answer:**


**QUESTION 450**

An engineer must configure the IPv6 address 2001:0db8:0000:0000:0700:0003:400F:572B on the serial0/0 interface of the HQ router and wants to compress it for easier configuration. Which command must be issued on the router interface?

- A. ipv6 address 2001:db8::700:3:400F:572B
- B. ipv6 address 2001:db8:0::700:3:4F:572B
- C. ipv6 address 2001:Odb8::7:3:4F:572B
- D. ipv6 address 2001::db8:0000::700:3:400F:572B

**Answer:** A

**QUESTION 451**

What describes the operation of virtual machines?

- A. Virtual machines are responsible for managing and allocating host hardware resources
- B. In a virtual machine environment, physical servers must run one operating system at a time.
- C. Virtual machines are the physical hardware that support a virtual environment.
- D. Virtual machines are operating system instances that are decoupled from server hardware

**Answer:** D

**QUESTION 452**

Which WLC port connects to a switch to pass normal access-point traffic?

- A. redundancy
- B. console
- C. distribution system
- D. service

**Answer:** C

**QUESTION 453**

Which IPv6 address type provides communication between subnets and is unable to route on the Internet?

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

**Answer:** B

**QUESTION 454**

An engineering team asks an implementer to configure syslog for warning conditions and error conditions.

Which command does the implementer configure to achieve the desired result?

- A. logging trap 5
- B. logging trap 2
- C. logging trap 4
- D. logging trap 3

**Answer:** C

**QUESTION 455**

Drag and Drop Question

Drag and drop the 802.11 wireless standards from the left onto the matching statements on the right.

|          |                                                                                            |
|----------|--------------------------------------------------------------------------------------------|
| 802.11a  | Operates in the 2.4 GHz and 5 GHz bands.                                                   |
| 802.11ac | Operates in the 2.4 GHz band only and supports a maximum data rate of 54 Mbps.             |
| 802.11b  | Operates in the 5 GHz band only and supports a maximum data rate that can exceed 100 Mbps. |
| 802.11g  | Supports a maximum data rate of 11 Mbps.                                                   |
| 802.11n  | Operates in the 5 GHz band only and supports a maximum data rate of 54 Mbps.               |

**Answer:**

|          |
|----------|
| 802.11n  |
| 802.11g  |
| 802.11ac |
| 802.11b  |
| 802.11a  |

#### QUESTION 456

What are two characteristics of the distribution layer in a three-tier network architecture? (Choose two.)

- A. serves as the network aggregation point
- B. provides a boundary between Layer 2 and Layer 3 communications
- C. designed to meet continuous, redundant uptime requirements
- D. is the backbone for the network topology
- E. physical connection point for a LAN printer

**Answer:** AB

**Explanation:**

The **distribution layer** aggregates the data received from the access layer switches before it is transmitted to the core layer for routing to its final destination. In Figure 1-6, the distribution layer is the boundary between the Layer 2 domains and the Layer 3 routed network.

<https://www.ciscopress.com/articles/article.asp?p=2202410&seqNum=4>

#### QUESTION 457

What is the purpose of using First Hop Redundancy Protocol in a specific subnet?

- A. Filter traffic based on destination IP addressing
- B. Sends the default route to the hosts on a network
- C. ensures a loop-free physical topology
- D. forwards multicast hello messages between routers

**Answer:** D

**Explanation:**

FHRP is layer 3 protocol whose purpose is to protect the default gateway by offering redundancy of the gateway in a subnet. This is achieved by allowing two or more routers to provide a backup for the first-hop IP router address. If a failure of an active router occurs, the backup router will take over the address. The routers negotiate their roles (Active/Standby) with each other by multicast hello messages to share the VIP (virtual IP address) between the FHRP routers. The terms Active/Standby vary between the different types of FHRP. The active router will act as the default gateway and the standby router acts as a backup the active router.

#### QUESTION 458

Which access layer threat-mitigation technique provides security based on identity?

- A. Dynamic ARP Inspection
- B. using a non-default native VLAN
- C. 802.1x
- D. DHCP snooping

**Answer:** C

#### QUESTION 459

What must be considered when using 802.11 ta?

- A. It is compatible with 802 lib- and 802 11-compliant wireless devices
- B. It is used in place of 802 11b/g when many nonoverlapping channels are required
- C. It is susceptible to interference from 2.4 GHz devices such as microwave ovens.
- D. It is chosen over 802 11b/g when a lower-cost solution is necessary

**Answer:** B

**Explanation:**

802.11a and 802.11b are not compatible since 802.11a operates at the 5GHz frequency band and 802.11b operates at the 2.4GHz band. The 2.4 GHz frequency band with a channel width of 22 MHz only has 3 non-overlapping channels (1, 6 and 11) whereas the 5 GHz band has 23 non-overlapping channels with a 20 MHz channel width. Therefore, 802.11a is preferred over 802.11b and 802.11g when many non-overlapping channels are required since they both operate at 2.4GHz unlike 802.11a.

#### QUESTION 460

When a site-to-site VPN is configured which IPsec mode provides encapsulation and encryption of the entire original IP packet?

- A. IPsec tunnel mode with AH
- B. IPsec transport mode with AH

- C. IPsec tunnel mode with ESP
- D. IPsec transport mode with ESP

**Answer:** C

**QUESTION 461**

What does physical access control regulate?

- A. access to specific networks based on business function
- B. access to servers to prevent malicious activity
- C. access to computer networks and file systems
- D. access to networking equipment and facilities

**Answer:** D

**QUESTION 462**

On workstations running Microsoft Windows, which protocol provides the default gateway for the device?

- A. DHCP
- B. STP
- C. SNMP
- D. DNS

**Answer:** A

**QUESTION 463**

How are VLAN hopping attacks mitigated?

- A. enable dynamic ARP inspection
- B. manually implement trunk ports and disable DTP
- C. activate all ports and place in the default VLAN
- D. configure extended VLANs

**Answer:** B

**QUESTION 464**

What is the role of a firewall in an enterprise network?

- A. Forwards packets based on stateless packet inspection
- B. Processes unauthorized packets and allows passage to less secure segments of the network
- C. determines which packets are allowed to cross from unsecured to secured networks
- D. explicitly denies all packets from entering an administrative domain

**Answer:** C

**QUESTION 465**

Which two primary drivers support the need for network automation? (Choose two.)

- A. Eliminating training needs
- B. Increasing reliance on self-diagnostic and self-healing
- C. Policy-derived provisioning of resources
- D. Providing a single entry point for resource provisioning
- E. Reducing hardware footprint

**Answer:** CD

**QUESTION 466**

What is a function of the Cisco DNA Center Overall Health Dashboard?

- A. It provides a summary of the top 10 global issues.
- B. It provides detailed activity logging for the 10 devices and users on the network.
- C. It summarizes the operational status of each wireless device on the network.
- D. It summarizes daily and weekly CPU usage for servers and workstations in the network.

**Answer:** A

**QUESTION 467**

Which protocol requires authentication to transfer a backup configuration file from a router to a remote server?

- A. DTP
- B. FTP
- C. SMTP
- D. TFTP

**Answer:** B

**QUESTION 468**

After installing a new Cisco ISE server, which task must the engineer perform on the Cisco WLC to connect wireless clients on a specific VLAN based on their credentials?

- A. Enable the Allow AAA Override
- B. Enable the Event-Driven RRM.
- C. Disable the LAG Mode or Next Reboot.
- D. Enable the Authorized MIC APs against auth-list or AAA.

**Answer:** A

**Explanation:**

In order to support centralized access control through a centralized AAA server such as the Cisco Identity Services Engine (ISE) or ACS, the IPv6 ACL can be provisioned on a per-client basis using AAA Override attributes. In order to use this feature, the IPv6 ACL must be configured on the controller and the WLAN must be configured with the AAA Override feature enabled.

[https://www.cisco.com/c/en/us/td/docs/wireless/controller/7-6/configuration-guide/b\\_cg76/b\\_cg76\\_chapter\\_0111001.pdf](https://www.cisco.com/c/en/us/td/docs/wireless/controller/7-6/configuration-guide/b_cg76/b_cg76_chapter_0111001.pdf)

**QUESTION 469**

Which QoS tool is used to optimize voice traffic on a network that is primarily intended for data traffic?

- A. FIFO
- B. WFQ
- C. PQ
- D. WRED

**Answer:** C

**Explanation:**

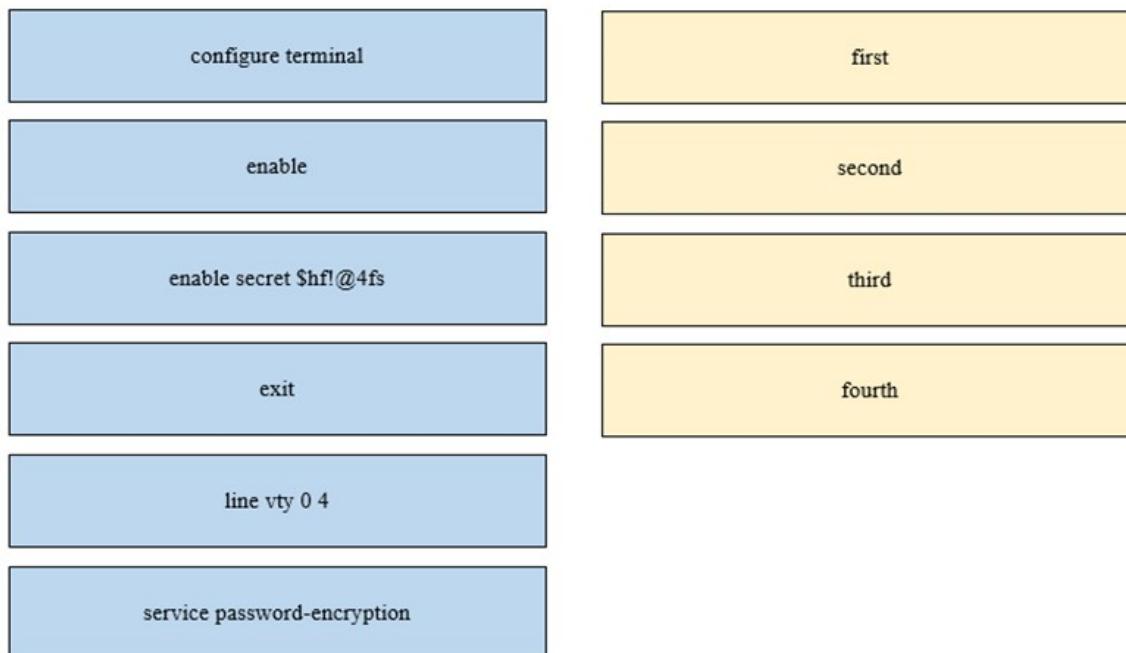
Many popular QoS techniques that serve data traffic very well, such as WFQ and RED, are ineffective for voice applications.

FIFO (first-in, first-out). FIFO entails no concept of priority or classes of traffic. With FIFO, transmission of packets out the interface occurs in the order the packets arrive.

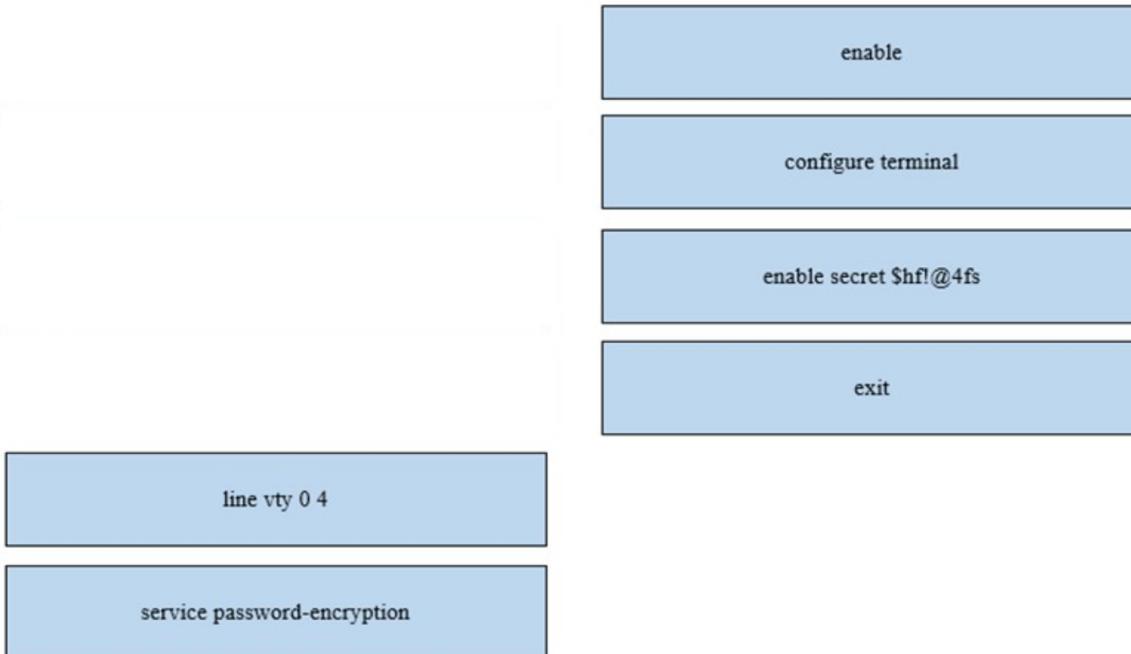
#### QUESTION 470

Drag and Drop Question

An engineer is configuring an encrypted password for the enable command on a router where the local user database has already been configured. Drag and drop the configuration commands from the left into the correct sequence on the right Not all commands are used



**Answer:**



**QUESTION 471**

Where is the interface between the control plane and data plane within the software-defined architecture?

- A. control layer and the infrastructure layer
- B. application layer and the infrastructure layer
- C. application layer and the management layer
- D. control layer and the application layer

**Answer:** A

**QUESTION 472**

An implementer is preparing hardware for virtualization to create virtual machines on a host. What is needed to provide communication between hardware and virtual machines?

- A. hypervisor
- B. router
- C. straight cable
- D. switch

**Answer:** A

**Explanation:**

A computer that hosts VMs requires specialized software called a hypervisor. The hypervisor emulates the computer's CPU, memory, hard disk, network and other hardware resources, creating a pool of resources that can be allocated to the individual VMs according to their specific requirements. The hypervisor can support multiple virtual hardware platforms that are isolated from each other, enabling VMs to run Linux and Windows Server OSes on the same physical host.

**QUESTION 473**

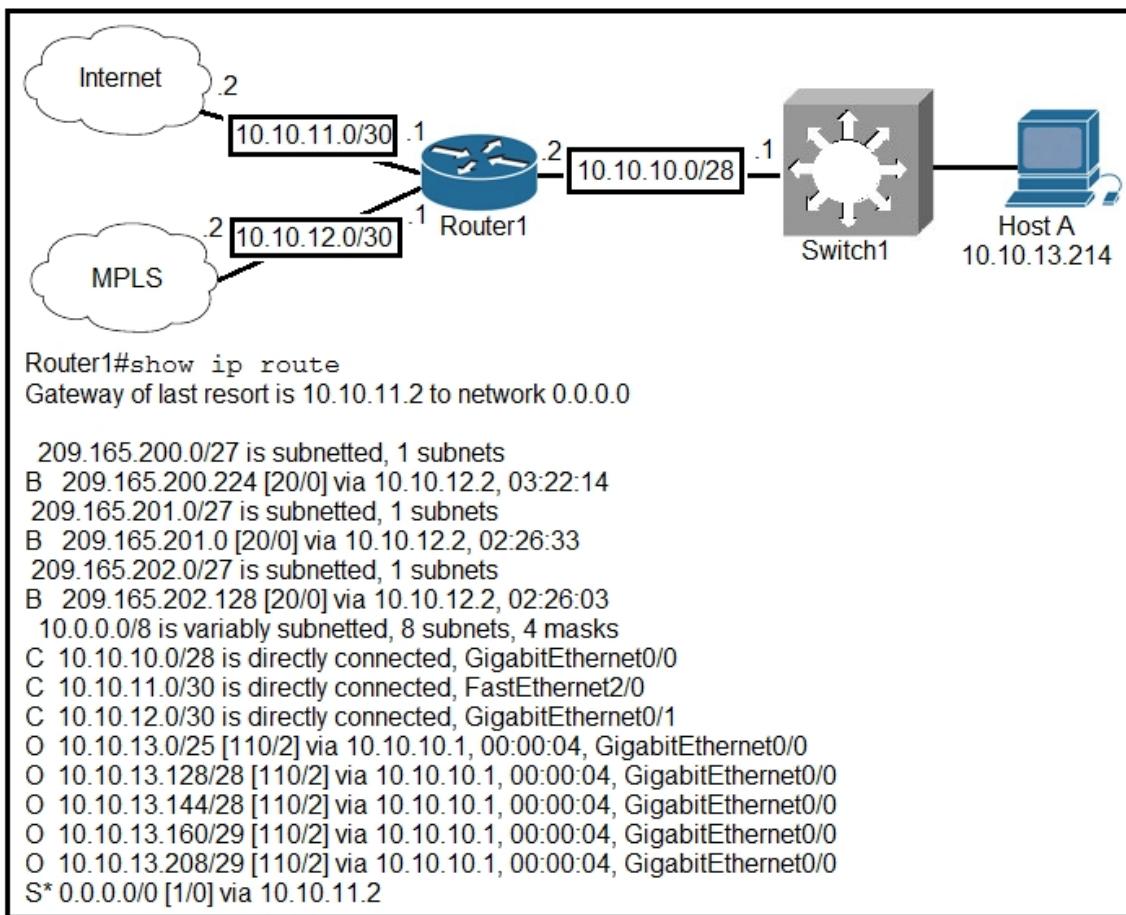
A network analyst is tasked with configuring the date and time on a router using EXEC mode. The date must be set to 12:00am. Which command should be used?

- A. Clock timezone
- B. Clock summer-time-recurring
- C. Clock summer-time date
- D. Clock set

**Answer:** D

**QUESTION 474**

Refer to the exhibit. What is the subnet mask of the route to the 10.10.13.160 prefix?



- A. 255.255.255.240
- B. 255.255.255.128
- C. 255.255.248.0
- D. 255.255.255.248

**Answer:** D

**QUESTION 475**

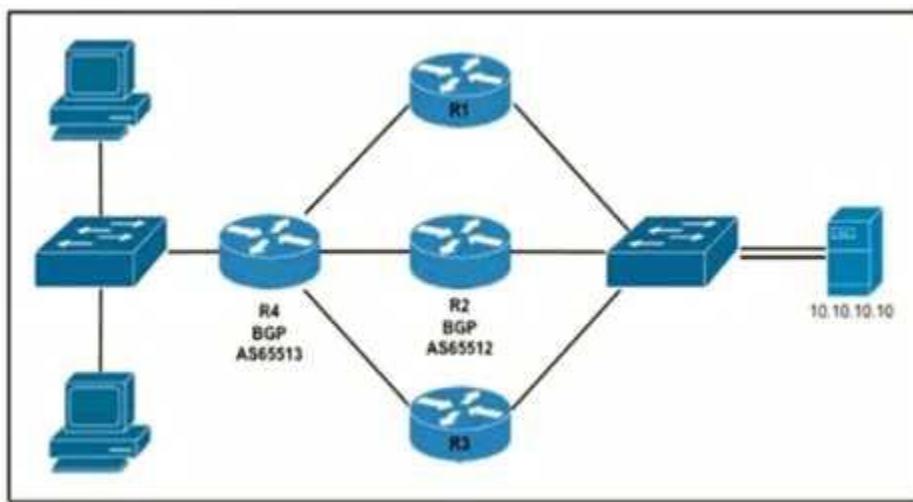
A network administrator is asked to configure VLANs 2, 3 and 4 for a new implementation. Some ports must be assigned to the new VLANs with unused remaining. Which action should be taken for the unused ports?

- A. configure port in the native VLAN
- B. configure ports in a black hole VLAN
- C. configure in a nondefault native VLAN
- D. configure ports as access ports

**Answer:** B

**QUESTION 476**

Refer to the exhibit. Router R4 is dynamically learning the path to the server. If R4 is connected to R1 via OSPF Area 20, to R2 via R2 BGP, and to R3 via EIGRP 777, which path is installed in the routing table of R4?



- A. the path through R1, because the OSPF administrative distance is 110
- B. the path through R2, because the IBGP administrative distance is 200
- C. the path through R2 because the EBGP administrative distance is 20
- D. the path through R3, because the EIGRP administrative distance is lower than OSPF and BGP

**Answer:** C

**QUESTION 477**

Why was the RFC 1918 address space defined?

- A. conserve public IPv4 addressing
- B. preserve public IPv6 address space
- C. reduce instances of overlapping IP addresses
- D. support the NAT protocol

**Answer:** A

**Explanation:**

An RFC1918 address is an IP address that is assigned by an enterprise organization to an internal host. These IP addresses are used in private networks, which are not available, or reachable, from the Internet.

**QUESTION 478**

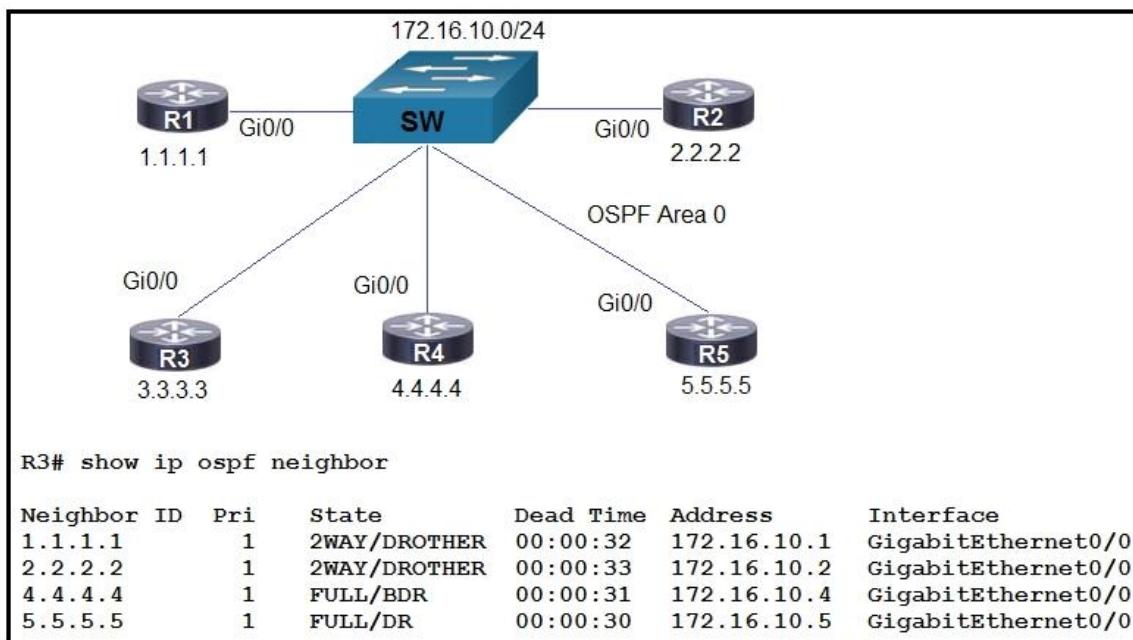
Which HTTP status code is returned after a successful REST API request?

- A. 200
- B. 301
- C. 404
- D. 500

**Answer:** A

**QUESTION 479**

Refer to the exhibit. R5 is the current DR on the network, and R4 is the BDR. Their interfaces are flapping, so a network engineer wants the OSPF network to elect a different DR and BDR. Which set of configurations must the engineer implement?



- A. R4(config)#interface gi0/0  
R4(config-if)#ip ospf priority 20  
R5(config)#interface gi0/0  
R5(config-if)#ip ospf priority 10
- B. R5(config)#interface gi0/0  
R5(config-if)#ip ospf priority 120  
R4(config)#interface gi0/0  
R4(config-if)#ip ospf priority 110
- C. R3(config)#interface gi0/0  
R3(config-if)#ip ospf priority 255  
R2(config)#interface gi0/0  
R2(config-if)#ip ospf priority 240

- D. R2(config)#interface gi0/0  
R2(config-if)#ip ospf priority 259  
R3(config)#interface gi0/0  
R3(config-if)#ip ospf priority 256

**Answer:** C

**QUESTION 480**

What are network endpoints?

- A. act as routers to connect a user to the service provider network
- B. a threat to the network if they are compromised
- C. support inter-VLAN connectivity
- D. enforce policies for campus-wide traffic going to the internet

**Answer:** B

**QUESTION 481**

Refer to the exhibit. Which two prefixes are included in this routing table entry? (Choose two.)

```
R#2show ip route
C 192.168.1.0/26 is directly connected, FastEthernet0/1
```

- A. 192.168.1.17
- B. 192.168.1.61
- C. 192.168.1.64
- D. 192.168.1.127
- E. 192.168.1.254

**Answer:** AB

**Explanation:**

192.168.0-63 because /26 = 64 IP addresses per subnet and 4 subnets (256/64), 0-63, 64-127, 128-191, 192-255.

**QUESTION 482**

Which two components are needed to create an Ansible script that configures a VLAN on a switch? (Choose two.)

- A. cookbook
- B. task
- C. playbook
- D. model
- E. recipe

**Answer:** BC

**Explanation:**

Ansible playbooks: "files that provide actions and logic about what Ansible should do."

"The playbook will list tasks and choices based on those results, like "Configure all branch routers in these locations, and if errors occur for any device, do these extra tasks for that device"."

#### QUESTION 483

Which two events occur automatically when a device is added to Cisco DNA Center? (Choose two.)

- A. The device is assigned to the Global site.
- B. The device is placed into the Unmanaged state.
- C. The device is placed into the Provisioned state.
- D. The device is placed into the Managed state.
- E. The device is assigned to the Local site.

**Answer:** AD

**Explanation:**

**Device in Global Site:** When you successfully add, import, or discover a device, Cisco DNA Center places the device in the **Managed** state and assigns it to the Global site by default. Even if you have defined SNMP server, Syslog server, and NetFlow collector settings for the Global site, Cisco DNA Center does not change these settings on the device.

[https://www.cisco.com/c/en/us/td/docs/cloud-systems-management/network-automation-and-management/dna-center/2-1-2/admin\\_guide/b\\_cisco\\_dna\\_center\\_admin\\_guide\\_2\\_1\\_2/b\\_cisco\\_dna\\_center\\_admin\\_guide\\_2\\_1\\_1\\_chapter\\_010.html](https://www.cisco.com/c/en/us/td/docs/cloud-systems-management/network-automation-and-management/dna-center/2-1-2/admin_guide/b_cisco_dna_center_admin_guide_2_1_2/b_cisco_dna_center_admin_guide_2_1_1_chapter_010.html)

#### QUESTION 484

Which virtual MAC address is used by VRRP group 1?

- A. 0050.0c05.ad81
- B. 0007.c061.bc01
- C. 0000.5E00.0101
- D. 0500.3976.6401

**Answer:** C

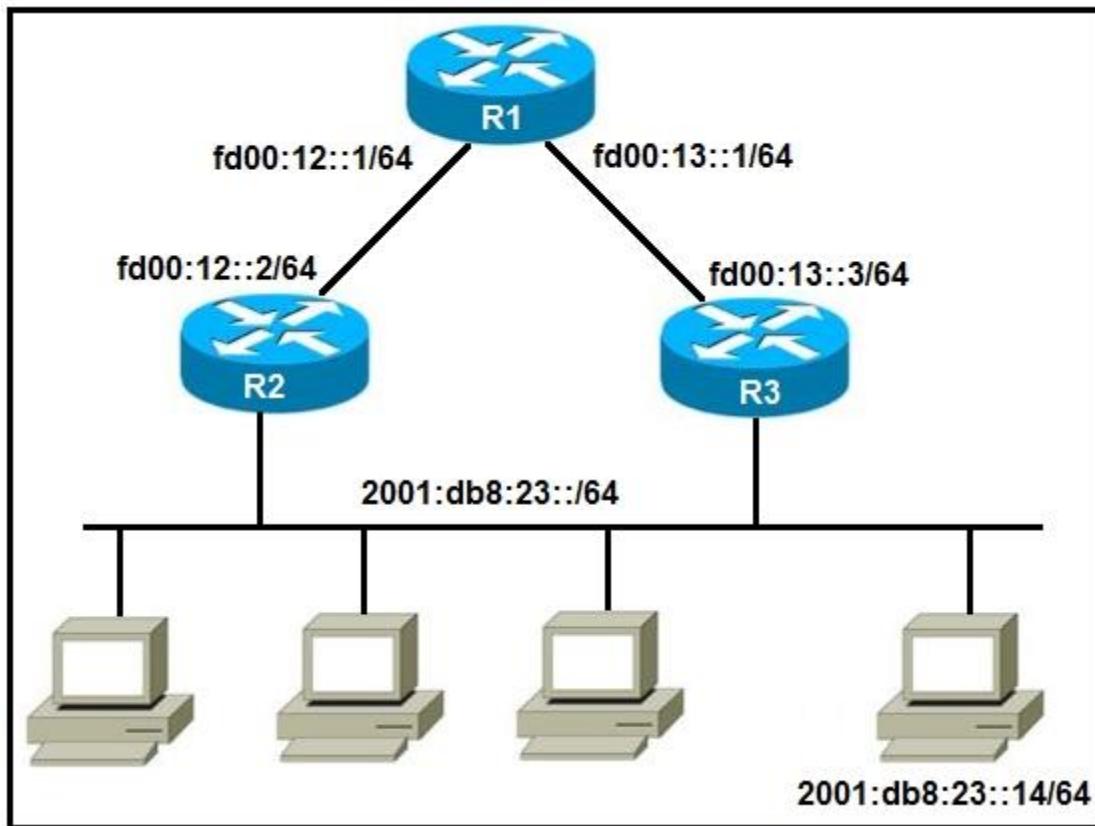
**Explanation:**

A virtual MAC address is generated by the virtual router based on the virtual router ID. The virtual MAC address format is 00-00-5E-00-01-{VRID} (VRRP) and 00-00-5E-00-02-{VRID}.

#### QUESTION 485

Refer to the exhibit. Which two commands, when configured on router R1, fulfill these requirements? (Choose two.)

- Packets toward the entire network 2001:db8:23::/64 must be forwarded through router R2.
- Packets toward host 2001:db8:23::14 preferably must be forwarded through R3.



- A. Ipv6 route 2001:db8:23::/128 fd00:12::2
- B. Ipv6 route 2001:db8:23::14/128 fd00:13::3
- C. Ipv6 route 2001:db8:23::14/64 fd00:12::2
- D. Ipv6 route 2001:db8:23::/64 fd00:12::2 200
- E. Ipv6 route 2001:db8:23::14/64 fd00:12::2 200

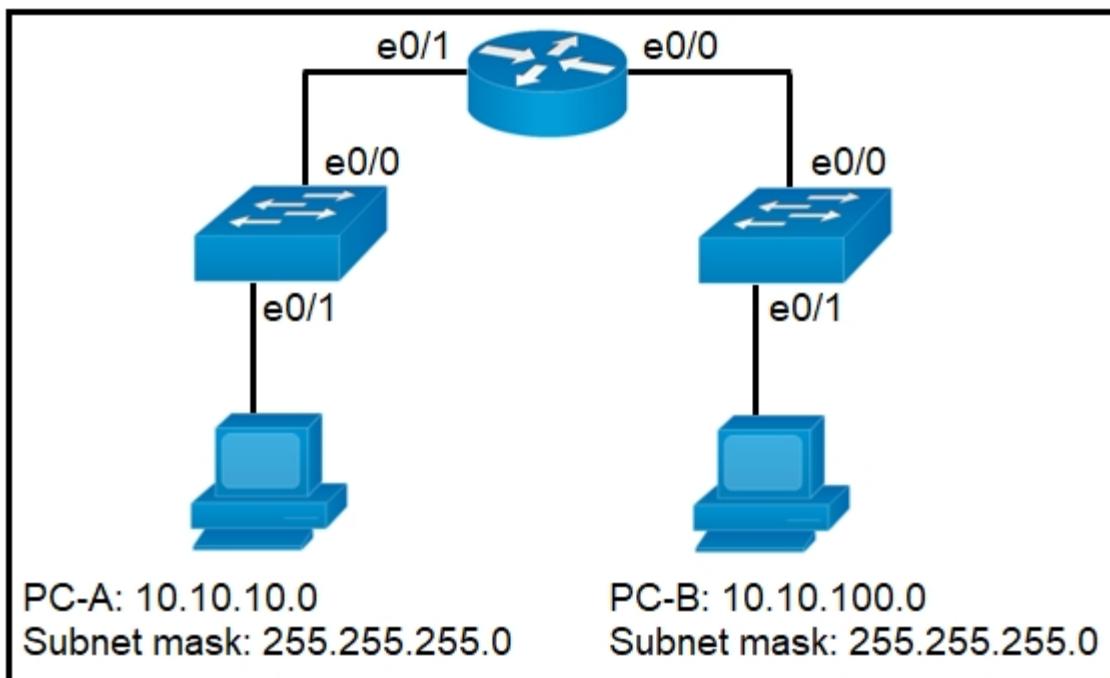
**Answer:** BD

**Explanation:**

Therefore, we use a host route meaning that all bits of the ipv6 destination address must match (prefix-length of /128). Also, the next hop address should be that of R3 (fd00:13::3) since the question asks that packets for the host must be forwarded through it.

#### QUESTION 486

Refer to the exhibit. When PC-A sends traffic to PC-B, which network component is in charge of receiving the packet from PC-A verifying the IP addresses, and forwarding the packet to PC-B?



- A. Layer 2 switch
- B. Router
- C. Load balancer
- D. firewall

**Answer:** B

#### QUESTION 487

In software-defined architecture, which place handles switching for traffic through a Cisco router?

- A. Control
- B. Management
- C. Data
- D. application

**Answer:** C

#### QUESTION 488

Which level of severity must be set to get informational syslogs?

- A. alert
- B. critical
- C. notice
- D. debug

**Answer:** D

**Explanation:**

Specifying a level causes messages at that level and numerically lower levels to be displayed at the destination.

From Table 3 : informational level = 6, debugging level = 7, notice/notifications level = 5  
<https://www.cisco.com/c/en/us/td/docs/routers/access/wireless/software/guide/SysMsgLogging.html>

**QUESTION 489**

When a switch receives a frame for a known destination MAC address, how is the frame handled?

- A. sent to the port identified for the known MAC address
- B. broadcast to all ports
- C. forwarded to the first available port
- D. flooded to all ports except the one from which it originated

**Answer:** A

**Explanation:**

A switch builds its MAC address table by recording the MAC address of each device connected to each of its ports. The switch uses the information in the MAC address table to send frames destined for a specific device out the port, which has been assigned to that device.

<https://www.ciscopress.com/articles/article.asp?p=2181835&seqNum=5>

**QUESTION 490**

How does QoS optimize voice traffic?

- A. reducing bandwidth usage
- B. by reducing packet loss
- C. by differentiating voice and video traffic
- D. by increasing jitter

**Answer:** C

**QUESTION 491**

What is the function of a controller in controller-based networking?

- A. It serves as the centralized management point of an SDN architecture.
- B. It centralizes the data plane for the network.
- C. It is the card on a core router that maintains all routing decisions for a campus.
- D. It is a pair of core routers that maintain all routing decisions for a campus

**Answer:** A

**QUESTION 492**

Which action does the router take as it forwards a packet through the network?

- A. The router replaces the original source and destination MAC addresses with the sending router MAC address as the source and neighbor MAC address as the destination
- B. The router encapsulates the original packet and then includes a tag that identifies the source router MAC address and transmits it transparently to the destination
- C. The router encapsulates the source and destination IP addresses with the sending router IP address as the source and the neighbor IP address as the destination
- D. The router replaces the source and destination labels with the sending router interface label as a

source and the next hop router label as a destination

**Answer:** A

**Explanation:**

Only mac address gets changed when forwarding, IP address always stays the same.

**QUESTION 493**

What are two similarities between UTP Cat 5e and Cat 6a cabling? (Choose two.)

- A. Both operate at a frequency of 500 MHz.
- B. Both support runs of up to 55 meters.
- C. Both support runs of up to 100 meters.
- D. Both support speeds of at least 1 Gigabit.
- E. Both support speeds up to 10 Gigabit.

**Answer:** CD

**QUESTION 494**

What is a characteristic of cloud-based network topology?

- A. wireless connections provide the sole access method to services
- B. onsite network services are provided with physical Layer 2 and Layer 3 components
- C. services are provided by a public, private, or hybrid deployment
- D. physical workstations are configured to share resources

**Answer:** C

**QUESTION 495**

What is the difference in data transmission delivery and reliability between TCP and UDP?

- A. TCP transmits data at a higher rate and ensures packet delivery. UDP retransmits lost data to ensure applications receive the data on the remote end.
- B. UDP sets up a connection between both devices before transmitting data. TCP uses the three-way handshake to transmit data with a reliable connection.
- C. UDP is used for multicast and broadcast communication. TCP is used for unicast communication and transmits data at a higher rate with error checking.
- D. TCP requires the connection to be established before transmitting data. UDP transmits data at a higher rate without ensuring packet delivery.

**Answer:** D

**Explanation:**

UDP speeds up transmissions by enabling the transfer of data before an agreement is provided by the receiving party. As a result, UDP is beneficial in time-sensitive communications, including voice over IP (VoIP), domain name system (DNS) lookup, and video or audio playback.

**QUESTION 496**

How are the switches in a spine-and-leaf topology interconnected?

- A. Each leaf switch is connected to one of the spine switches.

- B. Each leaf switch is connected to two spine switches, making a loop.
- C. Each leaf switch is connected to each spine switch.
- D. Each leaf switch is connected to a central leaf switch, then uplinked to a core spine switch.

**Answer:** C

**Explanation:**

Each leaf switch connects to all spine switches, which creates a large non-blocking fabric, increasing the level of redundancy and reducing traffic bottlenecks.

#### QUESTION 497

Refer to the exhibit. What is the metric of the route to the 192.168.10.33/28 subnet?

```
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 192.168.30.10 to network 0.0.0.0
 192.168.30.0/29 is subnetted, 2 subnets
C 192.168.30.0 is directly connected, FastEthernet0/0
C 192.168.30.8 is directly connected, Serial0/0.1
 192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
O IA 192.168.10.32/28 [110/193] via 192.168.30.10, 00:18:49, Serial0/0.1
O IA 192.168.10.0/27 [110/192] via 192.168.30.10, 00:18:49, Serial0/0.1
 192.168.20.0/30 is subnetted, 1 subnets
O IA 192.168.20.0 [110/128] via 192.168.30.10, 00:18:49, Serial0/0.1
 192.168.50.0/32 is subnetted, 1 subnets
C 192.168.50.1 is directly connected, Loopback0
O*IA 0.0.0.0/0 [110/84] via 192.168.30.10, 00:10:36, Serial0/0.1
```

- A. 84
- B. 110
- C. 128
- D. 192
- E. 193

**Answer:** E

**Explanation:**

What route would you use to send traffic to the 192.168.10.33/28 subnet. 192.168.10.33 is part of the 192.168.10.32/28 subnet and would use that OSPF route. These IPs would also use that same route (.33 - .47)/(AD/METRIC) (110/193).

#### QUESTION 498

Which two protocols must be disabled to increase security for management connections to a Wireless LAN Controller? (Choose two )

- A. Telnet
- B. SSH
- C. HTTP
- D. HTTPS

E. TFTP

**Answer:** AC

**Explanation:**

HTTP and Telnet both are unsecure. That's why we have HTTPS and SSH. TFTP isn't used for WLC topics. Only simple file transferring unencrypted.

#### QUESTION 499

What are two benefits of using the PortFast feature? (Choose two)

- A. Enabled interfaces are automatically placed in listening state
- B. Enabled interfaces come up and move to the forwarding state immediately
- C. Enabled interfaces never generate topology change notifications.
- D. Enabled interfaces that move to the learning state generate switch topology change notifications
- E. Enabled interfaces wait 50 seconds before they move to the forwarding state

**Answer:** BC

**Explanation:**

"A switch will never generate a topology change notification for an interface that has portfast enabled."

<https://networklessons.com/switching/cisco-portfast-configuration>

"Another major benefit of the STP portfast feature is that the access ports bypass the earlier 802.1D STP states (learning and listening) and forward traffic immediately."

<https://www.ciscopress.com/articles/article.asp?p=2995351&seqNum=3>

#### QUESTION 500

Which function is performed by DHCP snooping?

- A. propagates VLAN information between switches
- B. listens to multicast traffic for packet forwarding
- C. provides DDoS mitigation
- D. rate-limits certain traffic

**Answer:** D

**Explanation:**

DHCP snooping is a security feature that acts like a firewall between untrusted hosts and trusted DHCP servers. The DHCP snooping feature performs the following activities: Validates DHCP messages received from untrusted sources and filters out invalid messages.

#### QUESTION 501

When a client and server are not on the same physical network, which device is used to forward requests and replies between client and server for DHCP?

- A. DHCP relay agent
- B. DHCP server
- C. DHCPOFFER
- D. DHCPOFFER

**Answer:** A

**Explanation:**

A DHCP relay agent is any host that forwards DHCP packets between clients and servers. Relay agents are used to forward requests and replies between clients and servers when they are not on the same physical subnet.

## QUESTION 502

Drag and Drop Question

Drag and drop the functions of DHCP from the left onto any of the positions on the right Not all functions are used.

|                                                                          |          |
|--------------------------------------------------------------------------|----------|
| provides local control for network segments using a client-server scheme | function |
| uses authoritative servers for record keeping                            | function |
| maintains an address pool                                                | function |
| associates hostnames to IP address                                       | function |
| offers domain name server configuration                                  |          |
| reduces the administrative burden for onboarding end users               |          |
| assigns IP addresses to local hosts for a configurable lease time        |          |

**Answer:**

|                                                                          |                                                                          |
|--------------------------------------------------------------------------|--------------------------------------------------------------------------|
| provides local control for network segments using a client-server scheme | maintains an address pool                                                |
| uses authoritative servers for record keeping                            | provides local control for network segments using a client-server scheme |
| maintains an address pool                                                | reduces the administrative burden for onboarding end users               |
| associates hostnames to IP address                                       | assigns IP addresses to local hosts for a configurable lease time        |
| offers domain name server configuration                                  |                                                                          |
| reduces the administrative burden for onboarding end users               |                                                                          |
| assigns IP addresses to local hosts for a configurable lease time        |                                                                          |

**QUESTION 503**

Which plane is centralized by an SON controller?

- A. management-plane
- B. control-plane
- C. data-plane
- D. services-plane

**Answer:** B

**QUESTION 504**

An engineer configures interface Gi1/0 on the company PE router to connect to an ISP Neighbor discovery is disabled.

```
interface Gi1/0
description HQ_DC3992-38488
duplex full
speed 100
negotiation auto
lldp transmit
lldp receive
```

Which action is necessary to complete the configuration if the ISP uses third-party network

devices?

- A. Enable LLDP globally
- B. Disable autonegotiation
- C. Disable Cisco Discovery Protocol on the interface
- D. Enable LLDP-MED on the ISP device

**Answer:** A

**Explanation:**

LLDP-MED is used only between network devices (such as switches) and endpoint devices (such as phones). For **network-to-network** connections, **LLDP is used.**

Check table 2, protocol uses:

[https://www.cisco.com/en/US/technologies/tk652/tk701/technologies\\_white\\_paper0900aecd804cd46d.html](https://www.cisco.com/en/US/technologies/tk652/tk701/technologies_white_paper0900aecd804cd46d.html)

### QUESTION 505

What is the benefit of configuring PortFast on an interface?

- A. After the cable is connected, the interface uses the fastest speed setting available for that cable type
- B. After the cable is connected, the interface is available faster to send and receive user data
- C. The frames entering the interface are marked with higher priority and then processed faster by a switch.
- D. Real-time voice and video frames entering the interface are processed faster

**Answer:** B

**Explanation:**

Portfast causes a switch or trunk port to enter the spanning tree forwarding state immediately, bypassing the listening and learning states.

### QUESTION 506

Drag and Drop Question

Drag and drop the DNS lookup components from the left onto the functions on the right.

|                     |                                                                                  |
|---------------------|----------------------------------------------------------------------------------|
| domain              | service that maps hostname to IP addresses                                       |
| cache               | local database of address mappings that improves name resolution performance     |
| name resolver       | in response to client requests, queries a name server for IP address information |
| DNS                 | component of a URL that indicates the location or organization type              |
| no ip domain-lookup | disables DNS services on a Cisco device                                          |

**Answer:**

|                     |                     |
|---------------------|---------------------|
| domain              | DNS                 |
| cache               | cache               |
| name resolver       | name resolver       |
| DNS                 | domain              |
| no ip domain-lookup | no ip domain-lookup |

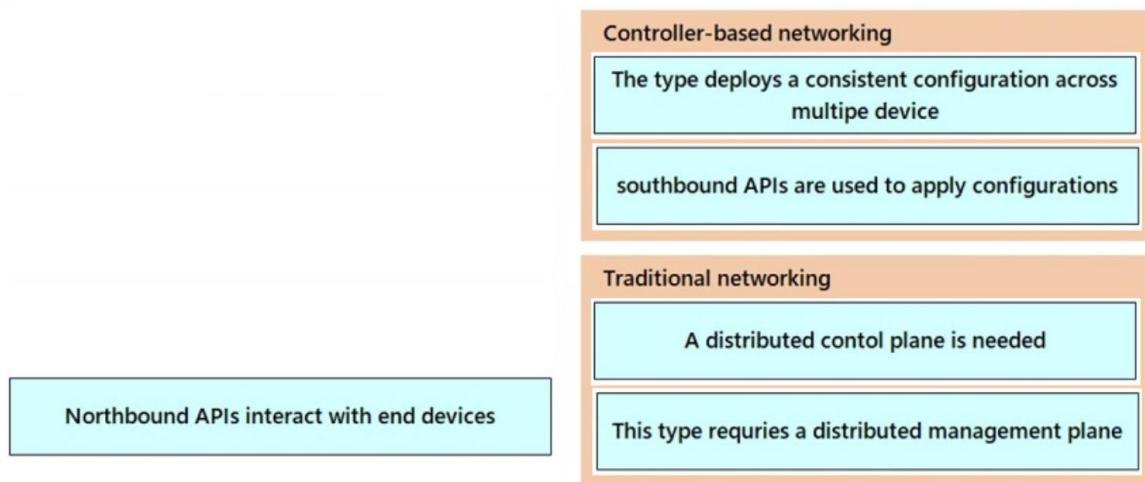
### QUESTION 507

Drag and Drop Question

Drag and drop the statement about networking from the left into the Corresponding networking types on the right. Not all statements are used.

|                                                                    |                             |
|--------------------------------------------------------------------|-----------------------------|
| The type deploys a consistent configuration across multiple device | Controller-based networking |
| A distributed control plane is needed                              |                             |
| This type requires a distributed management plane                  |                             |
| southbound APIs are used to apply configurations                   | Traditional networking      |
| Northbound APIs interact with end devices                          |                             |

**Answer:**



**Explanation:**

On a SND network the control plane is centralized on the SND controller not distributed on the networking devices.

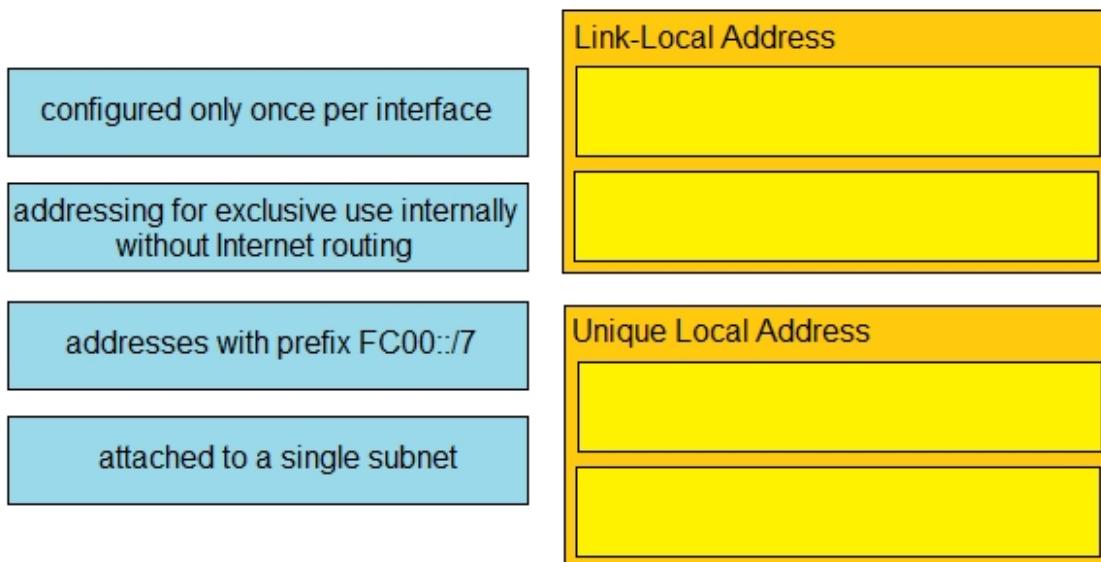
Northbound APIs do not interact with end devices. They allow the SND controller to interact with applications on the application plane.

On a SND network the management plane is not centralized, it is distributed. Network management protocols, such as Telnet, SSH, SNMP, and Syslog operate in the management plane on both traditional network and controller-based network.

**QUESTION 508**

Drag and Drop Question

Drag and drop the IPv6 address type characteristics from the left to the right.



**Answer:**

configured only once per interface

addressing for exclusive use internally  
without Internet routing

addresses with prefix FC00::/7

attached to a single subnet

**Link-Local Address**

attached to a single subnet

configured only once per interface

**Unique Local Address**

addresses with prefix FC00::/7

addressing for exclusive use internally  
without Internet routing

**Explanation:**

"A link-local address is a unicast address that is confined to a single link, a single subnet."

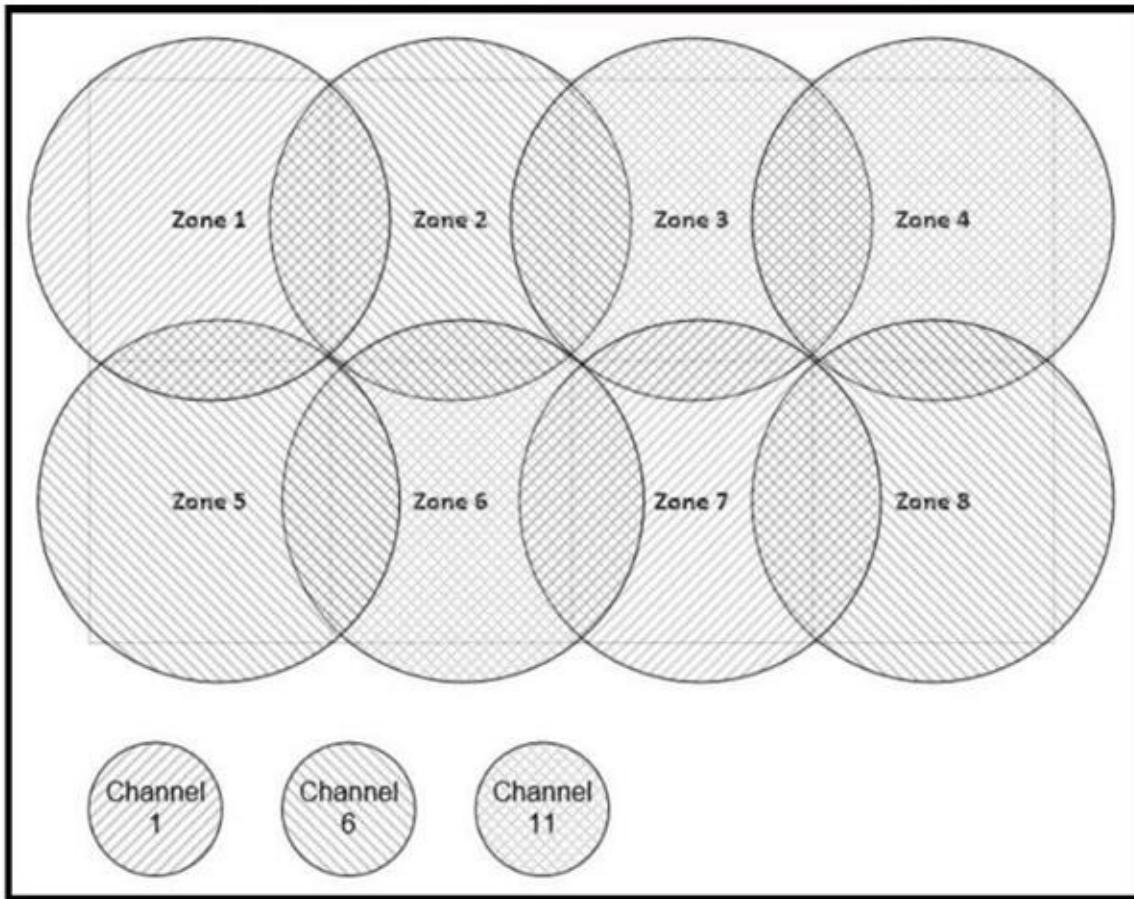
"There can be only one link-local address per interface."

"ULA addresses are for devices that never need access to the Internet and never need to be accessible from the Internet."

<https://www.ciscopress.com/articles/article.asp?p=2803866&seqNum=4>

**QUESTION 509**

Refer to the exhibit. Between which zones do wireless users expect to experience intermittent connectivity?

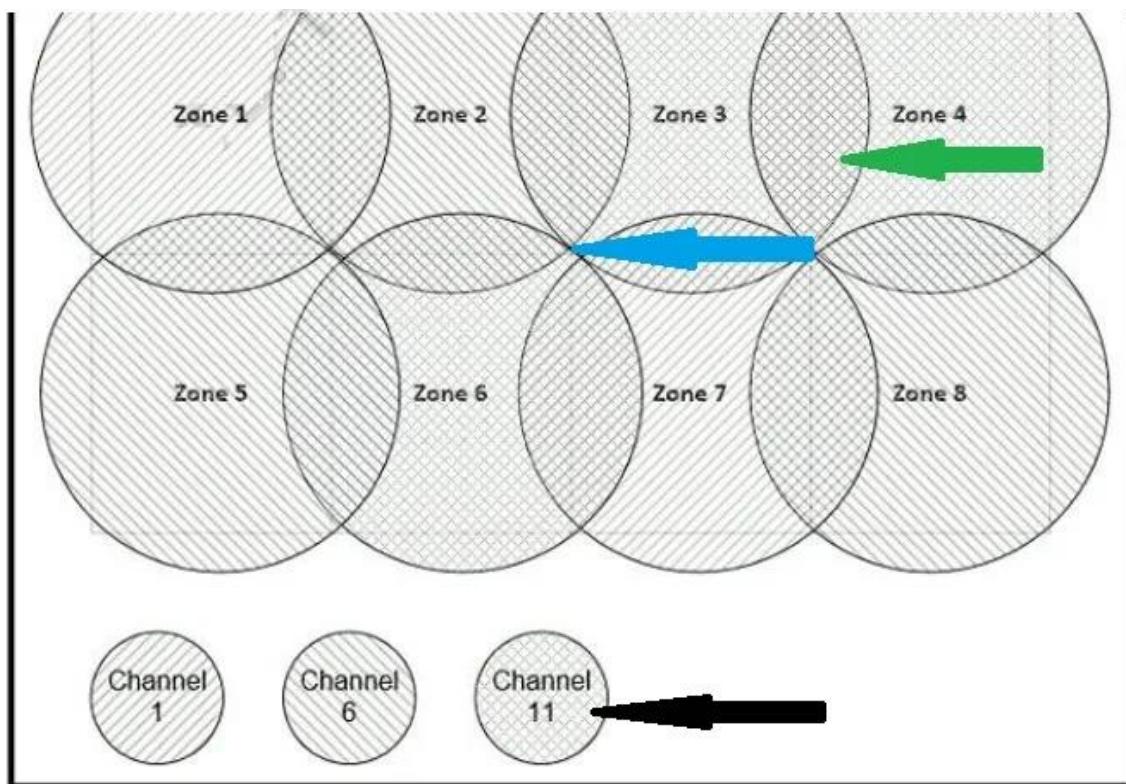


- A. between zones 1 and 2
- B. between zones 2 and 5
- C. between zones 3 and 4
- D. between zones 3 and 6

**Answer:** C

**Explanation:**

Zones 3 and 4 both have Channel 11 that is overlapped.  
Zones 3 and 6 do not overlap at all.

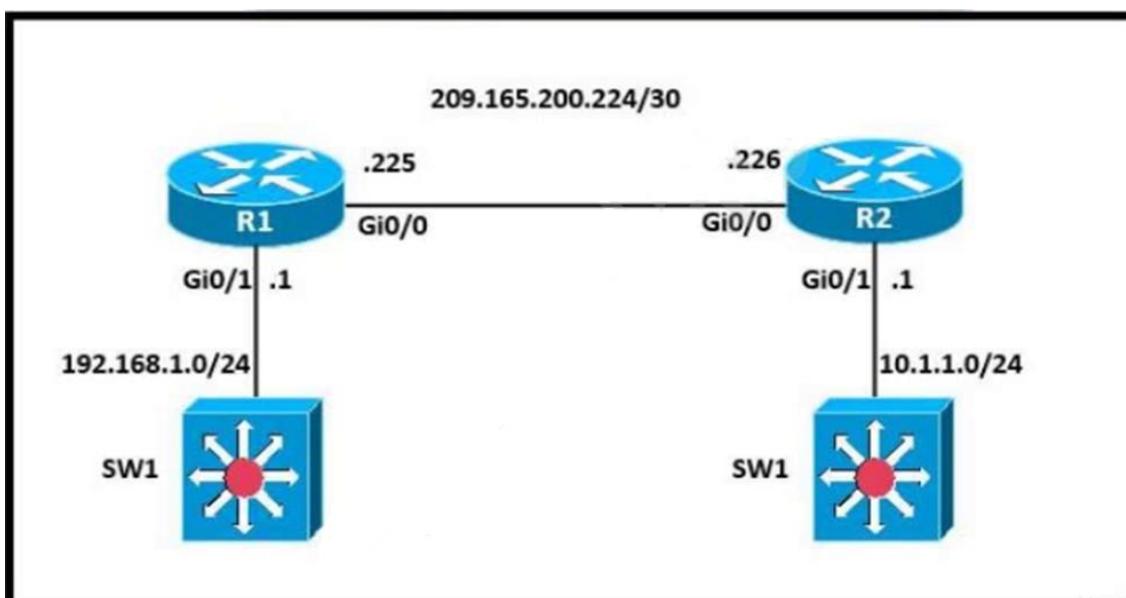

**QUESTION 510**

Refer to the exhibit. A network engineer is in the process of establishing IP connectivity between two sites.

Routers R1 and R2 are partially configured with IP addressing.

Both routers have the ability to access devices on their respective LANs.

Which command set configures the IP connectivity between devices located on both LANs in each site?



- A. R1  
`ip route 192.168.1.1 255.255.255.0 GigabitEthernet0/1`  
 R2  
`ip route 10.1.1.1 255.255.255.0 GigabitEthernet0/1`
- B. R1  
`ip route 192.168.1.0 255.255.255.0 GigabitEthernet0/0`  
 R2  
`ip route 10.1.1.1 255.255.255.0 GigabitEthernet0/0`
- C. R1  
`ip route 0.0.0.0 0.0.0.0 209.165.200.225`  
 R2  
`ip route 0.0.0.0 0.0.0.0 209.165.200.226`
- D. R1  
`ip route 0.0.0.0 0.0.0.0 209.165.200.226`  
 R2  
`ip route 0.0.0.0 0.0.0.0 209.165.200.225`

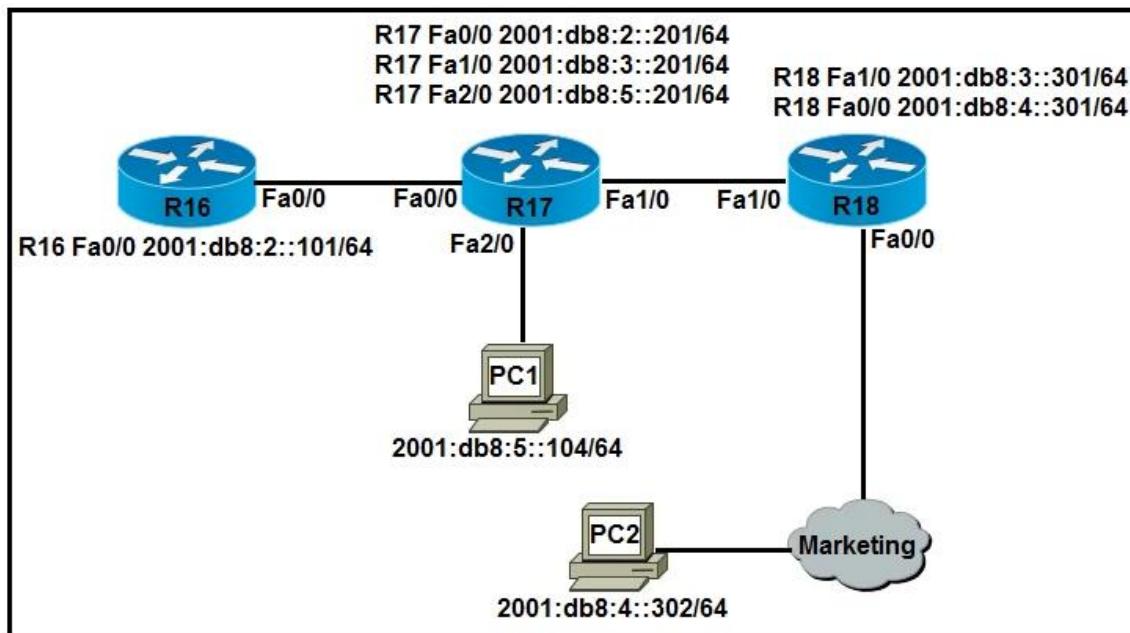
**Answer:** D

**Explanation:**

D is correct as it is stating any route goes through next hop of 209.165.200.226 (on R1) while any route next hops to 209.165.200.225 (On R2).

#### QUESTION 511

Refer to the exhibit. Which IPv6 configuration is required for R17 to successfully ping the WAN interface on R18?



- A.  R17#  
!  
no ip domain lookup  
ip cef  
!  
Interface FastEthernet0/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:3::201/64  
!  
Interface FastEthernet1/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:2::201/64  
!  
no cdp log mismatch duplex  
ipv6 route 2001:DB8:4::/64 2001:DB8:6::101
- B.  R17#  
!  
no ip domain lookup  
ip cef  
ipv6 unicast-routing  
!  
interface FastEthernet0/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:2::201/64  
!  
Interface FastEthernet1/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:3::201/64  
!  
no cdp log mismatch duplex  
ipv6 route 2001:DB8:4::/64 2001:DB8:3::301
- C.  R17#  
!  
no ip domain lookup  
ip cef  
ipv6 cef  
!  
interface FastEthernet0/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:2::201/64  
!  
interface FastEthernet1/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:3::201/64  
!  
no cdp log mismatch duplex  
ipv6 route 2001:DB8:4::/64 2001:DB8:4::302

D.  R17#  
!  
no ip domain lookup  
ip cef  
ipv6 unicast-routing  
!  
interface FastEthernet0/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:2::201/64  
!  
interface FastEthernet1/0  
no ip address  
duplex auto  
speed auto  
ipv6 address 2001:DB8:3::201/64  
!  
no cdp log mismatch duplex  
ipv6 route 2001:DB8:4::/64 2001:DB8:2::201

**Answer:** B

**Explanation:**

ipv6 unicast-routing statement included (IPv6 is enabled on the router). Compared to the exhibit, Fa0/0 and Fa0/1 have correct configurations. The route to subnet 2001:db8:4::/64 points to R18's Fa1/0 (correct next-hop).

### QUESTION 512

Which type of organization should use a collapsed-core architecture?

- A. large and requires a flexible, scalable network design
- B. large and must minimize downtime when hardware fails
- C. small and needs to reduce networking costs currently
- D. small but is expected to grow dramatically in the near future

**Answer:** C

**Explanation:**

A collapsed-core architecture is a limited investment for a small company, and may be efficient and productive for a limited time.

### QUESTION 513

What is a capability of FTP in network management operations?

- A. encrypts data before sending between data resources
- B. devices are directly connected and use UDP to pass file information
- C. uses separate control and data connections to move files between server and client
- D. offers proprietary support at the session layer when transferring data

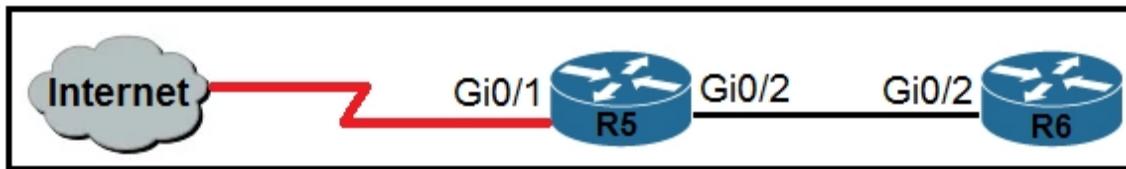
**Answer:** C

**Explanation:**

The File Transfer Protocol (FTP) is a standard communication protocol used for the transfer of computer files from a server to a client on a computer network. FTP is built on a client - server model architecture using separate control and data connections between the client and the server.

**QUESTION 514**

Refer to the exhibit. For security reasons, automatic neighbor discovery must be disabled on the R5 Gi0/1 interface.



These tasks must be completed:

- Disable all neighbor discovery methods on R5 interface Gi0/1.
- Permit neighbor discovery on R5's interface Gi0/2.
- Verify there are no dynamically learned neighbors on R5 interface Gi0/1.
- Display the IP address of R6's interface Gi0/2.

Which configuration must be used?

- A. R5(config)#int Gi0/1  
R5(config-if)#no cdp enable  
R5(config-if)#exit  
R5(config)#lldp run  
R5(config)#no cdp run  
R5#sh cdp neighbor detail  
R5#sh lldp neighbor
- B. R5(config)#int Gi0/1  
R5(config-if)#no cdp enable  
R5(config-if)#exit  
R5(config)#no lldp run  
R5(config)#cdp run  
R5#sh cdp neighbor  
R5#sh lldp neighbor
- C. R5(config)#int Gi0/1  
R5(config-if)#no cdp run  
R5(config-if)#exit  
R5(config)#lldp run  
R5(config)#cdp enable  
R5#sh cdp neighbor  
R5#sh lldp neighbor
- D. R5(config)#int Gi0/1  
R5(config-if)#no cdp enable  
R5(config-if)#exit  
R5(config)#no lldp run  
R5(config)#cdp run  
R5#sh cdp neighbor detail  
R5#sh lldp neighbor

**Answer: B**

**QUESTION 515**

What is a function of a Layer 3 switch?

- A. move frames between endpoints limited to IP addresses
- B. transmit broadcast traffic when operating in Layer 3 mode exclusively
- C. forward Ethernet frames between VLANs using only MAC addresses
- D. flood broadcast traffic within a VLAN

**Answer:** A

**QUESTION 516**

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

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

**Answer:** D

**Explanation:**

[https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Data\\_Center/VMDC/SDN/SDN.html](https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Data_Center/VMDC/SDN/SDN.html)

**QUESTION 517**

Drag and Drop Question

Drag and drop the lightweight access point operation modes from the left onto the descriptions on the right.

|                  |                                                                                          |
|------------------|------------------------------------------------------------------------------------------|
| bridge mode      | allows the access point to communicate with the WLC over a WAN link                      |
| local mode       | allows for packet captures of wireless traffic                                           |
| monitor mode     | rogue detector mode                                                                      |
| Flexconnect mode | preferred for connecting access points in a mesh environment                             |
|                  | receive only mode which acts as a dedicated sensor for RFID and IDS                      |
| sniffer mode     | transmits normally on one channel and monitors other channels for noise and interference |

**Answer:**



**QUESTION 518**

Which protocol is used in Software Defined Access (SDA) to provide a tunnel between two edge nodes in different fabrics?

- A. Generic Router Encapsulation (GRE)
- B. Virtual Local Area Network (VLAN)
- C. Virtual Extensible LAN (VXLAN)
- D. Point-to-Point Protocol (PPP)

**Answer:** C

**Explanation:**

The SD(Cisco® Software-Defined Access)-Access fabric uses the VXLAN data plane to provide transport of the full original Layer 2 frame and additionally uses LISP as the control plane to resolve endpoint-to-location (EID-to-RLOC) mappings. The SD-Access fabric replaces sixteen (16) of the reserved bits in the VXLAN header to transport up to 64,000 SGTs using a modified VXLAN-GPO (sometimes called VXLAN-GBP) format described in <https://tools.ietf.org/html/draft-smith-vxlan-group-policy-04>.

**QUESTION 519**

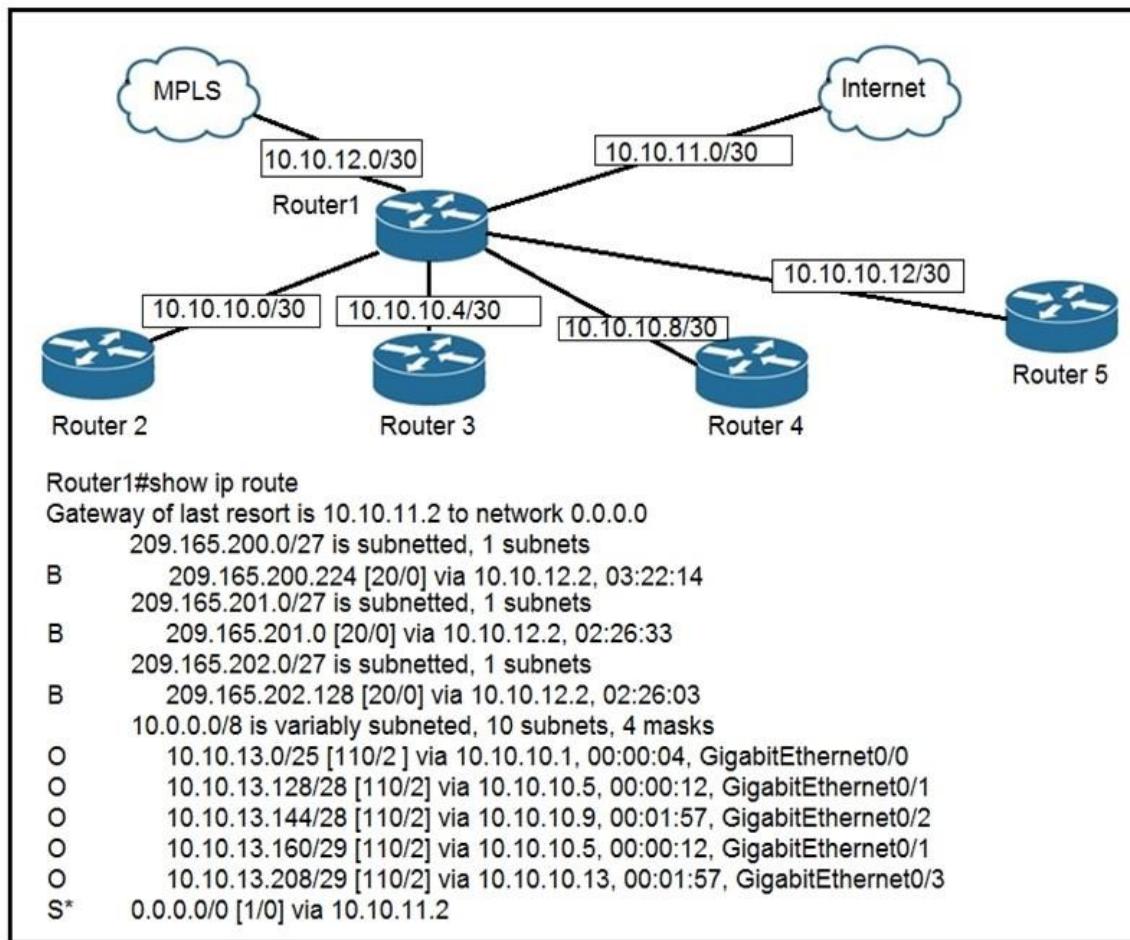
Which plane is centralized by an SDN controller?

- A. management-plane
- B. data-plane
- C. services-plane
- D. control-plane

**Answer:** D

**QUESTION 520**

Refer to the exhibit. Which next-hop IP address does Router1 use for packets destined to host 10.10.13.158?



- A. 10.10.10.5
- B. 10.10.11.2
- C. 10.10.12.2
- D. 10.10.10.9

**Answer:** D

#### QUESTION 521

A Cisco engineer must configure a single switch interface to meet these requirements:

- accept untagged frames and place them in VLAN 20
- accept tagged frames in VLAN 30 when CDP detects a Cisco IP phone

Which command set must the engineer apply?

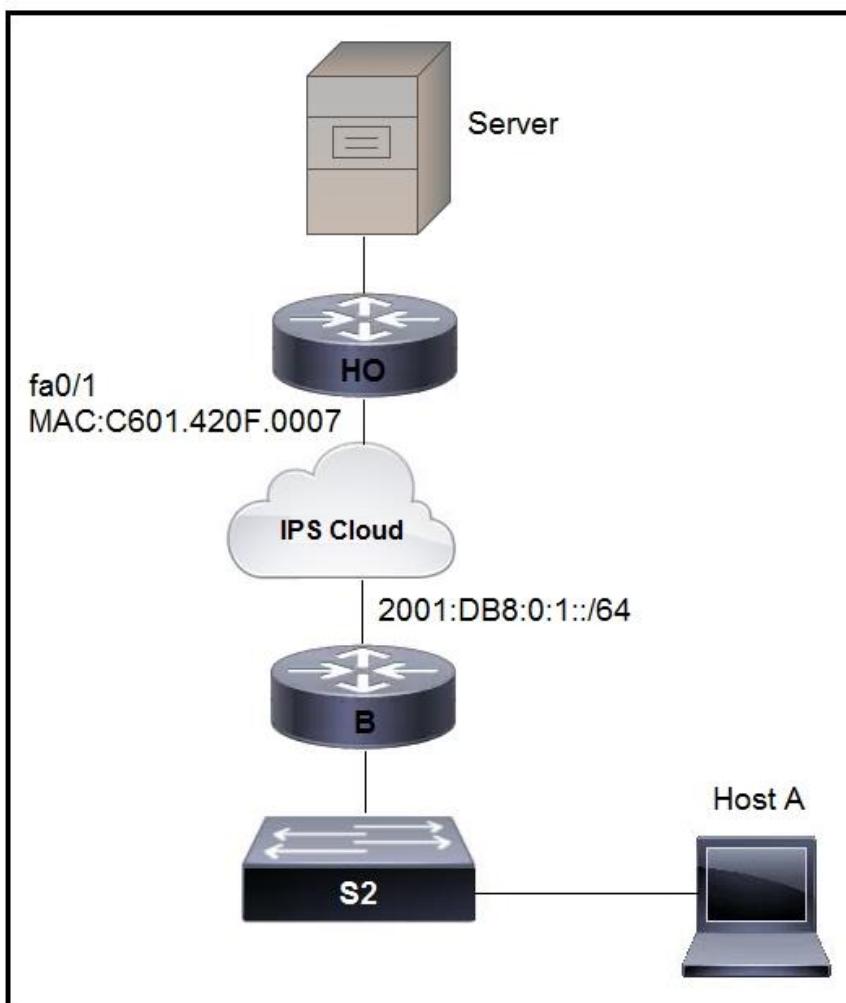
- A. switchport mode dynamic desirable  
switchport access vlan 20  
switchport trunk allowed vlan 30  
switchport voice vlan 30
- B. switchport mode dynamic auto  
switchport trunk native vlan 20

- switchport trunk allowed vlan 30  
 switchport voice vlan 30  
 C. switchport mode access  
 switchport access vlan 20  
 switchport voice vlan 30  
 D. switchport mode trunk  
 switchport access vlan 20  
 switchport voice vlan 30

**Answer:** C

**QUESTION 522**

Refer to the exhibit. An engineer is configuring the HO router.  
 Which IPv6 address configuration must be applied to the router fa0/1 interface for the router to assign a unique 64-bit IPv6 address to itself?



- A. ipv6 address 2001:DB8:0:1:C601:42FF:FE0F:7/64  
 B. ipv6 address 2001:DB8:0:1:C601:42FE:800F:7/64  
 C. ipv6 address 2001:DB8:0:1:FFFF:C601:420F:7/64

- D. ipv6 address 2001:DB8:0:1:FE80:C601:420F:7/64

**Answer:** A

**QUESTION 523**

Which WLC management connection type is vulnerable to man-in-the-middle attacks?

- A. SSH
- B. HTTPS
- C. Telnet
- D. console

**Answer:** C

**QUESTION 524**

Which action is taken by the data plane within a network device?

- A. forwards traffic to the next hop
- B. constructs a routing table based on a routing protocol
- C. provides CLI access to the network device
- D. looks up an egress interface in the forwarding information base

**Answer:** A

**QUESTION 525**

What is a function of a Next-Generation IPS?

- A. makes forwarding decisions based on learned MAC addresses
- B. serves as a controller within a controller-based network
- C. integrates with a RADIUS server to enforce Layer 2 device authentication rules
- D. correlates user activity with network events

**Answer:** D

**QUESTION 526**

Which characteristic differentiates the concept of authentication from authorization and accounting?

- A. user-activity logging
- B. service limitations
- C. consumption-based billing
- D. identity verification

**Answer:** D

**QUESTION 527**

Which value is the unique identifier that an access point uses to establish and maintain wireless connectivity to wireless network devices?

- A. VLANID
- B. SSID
- C. RFID
- D. WLANID

**Answer:** B

**QUESTION 528**

An engineer is configuring remote access to a router from IP subnet 10.139.58.0/28. The domain name, crypto keys, and SSH have been configured. Which configuration enables the traffic on the destination router?

- A. 

```
interface FastEthernet0/0
 ip address 10.122.49.1 255.255.255.240
 access-group 120 in

 ip access-list extended 120
 permit tcp 10.139.58.0 255.255.255.248 any eq 22
```
- B. 

```
interface FastEthernet0/0
 ip address 10.122.49.1 255.255.255.252
 ip access-group 110 in

 ip access-list extended 110
 permit tcp 10.139.58.0 0.0.0.15 host 10.122.49.1 eq 22
```
- C. 

```
interface FastEthernet0/0
 ip address 10.122.49.1 255.255.255.248
 ip access-group 10 in

 ip access-list standard 10
 permit udp 10.139.58.0 0.0.0.7 host 10.122.49.1 eq 22
```
- D. 

```
interface FastEthernet0/0
 ip address 10.122.49.1 255.255.255.252
 ip access-group 105 in

 ip access-list standard 105
 permit tcp 10.139.58.0 0.0.0.7 eq 22 host 10.122.49.1
```

**Answer:** B

**QUESTION 529**

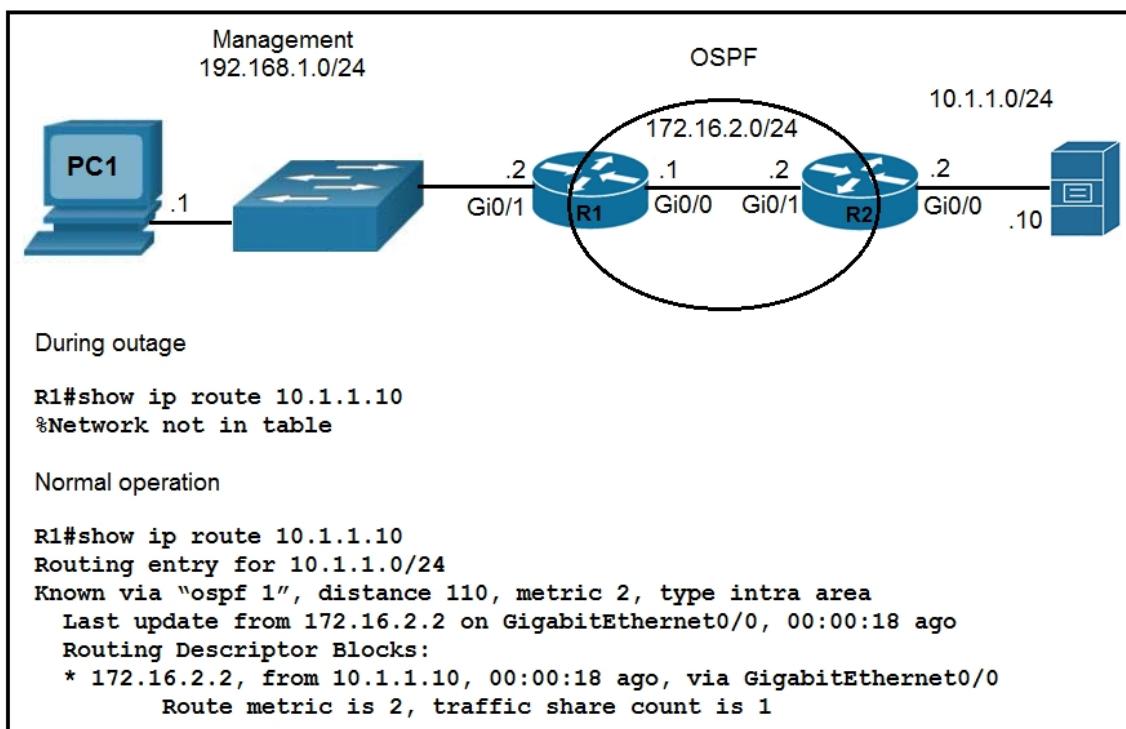
Which QoS per-hop behavior changes the value of the ToS field in the IPv4 packet header?

- A. shaping
- B. classification
- C. policing
- D. marking

**Answer:** D

### QUESTION 530

Refer to the exhibit. Which route must be configured on R1 so that OSPF routing is used when OSPF is up, but the server is still reachable when OSPF goes down?



- A. ip route 10.1.1.10 255.255.255.255 172.16.2.2 100
- B. ip route 10.1.1.0 255.255.255.0 gi0/1 125
- C. ip route 10.1.1.0 255.255.255.0 172.16.2.2 100
- D. ip route 10.1.1.10 255.255.255.255 gi0/0 125

**Answer:** D

#### Explanation:

This is an example of a floating static route when the Administrative Distance must be greater than the primary route. Currently the OSPF AD for the route is 110, so if that route was to go away then this route with an AD of 125 would be used.

### QUESTION 531

Refer to the exhibit. Users need to connect to the wireless network with IEEE 802.11r-compatible devices. The connection must be maintained as users travel between floors or to other areas in

the building. What must be the configuration of the connection?

| General                                                 | Security                                | QoS                                        | Policy-Mapping                   | Advanced                         |
|---------------------------------------------------------|-----------------------------------------|--------------------------------------------|----------------------------------|----------------------------------|
| <b>Layer 2</b>                                          | <b>Layer 3</b>                          | <b>AAA Servers</b>                         |                                  |                                  |
| <b>Fast Transition</b>                                  |                                         |                                            |                                  |                                  |
| Fast Transition <input type="button" value="Disable"/>  |                                         |                                            |                                  |                                  |
| <b>Protected Management Frame</b>                       |                                         |                                            |                                  |                                  |
| PMF <input type="button" value="Disabled"/>             |                                         |                                            |                                  |                                  |
| <b>WPA+WPA2 Parameters</b>                              |                                         |                                            |                                  |                                  |
| WPA Policy                                              | <input type="checkbox"/>                |                                            |                                  |                                  |
| WPA2 Policy                                             | <input checked="" type="checkbox"/>     |                                            |                                  |                                  |
| WPA2 Encryption                                         | <input checked="" type="checkbox"/> AES | <input type="checkbox"/> TKIP              | <input type="checkbox"/> CCMP256 | <input type="checkbox"/> GCMP128 |
| OSEN Policy                                             | <input type="checkbox"/>                |                                            |                                  |                                  |
| <b>Authentication Key Management <a href="#">19</a></b> |                                         |                                            |                                  |                                  |
| <input type="checkbox"/>                                | 802.1X                                  | <input type="checkbox"/> Enable            |                                  |                                  |
| <input type="checkbox"/>                                | CCKM                                    | <input type="checkbox"/> Enable            |                                  |                                  |
| <input type="checkbox"/>                                | PSK                                     | <input checked="" type="checkbox"/> Enable |                                  |                                  |
| <input type="checkbox"/>                                | FT 802.1X                               | <input type="checkbox"/> Enable            |                                  |                                  |
| <input type="checkbox"/>                                | FT PSK                                  | <input type="checkbox"/> Enable            |                                  |                                  |

- Select the WPA Policy option with the CCKM option.
- Disable AES encryption.
- Enable Fast Transition and select the FT 802.1x option.
- Enable Fast Transition and select the FT PSK option.

**Answer:** C

#### QUESTION 532

Refer to the exhibit. What is a reason for poor performance on the network interface?

```

Router# show interface gi0/0/0
GigabitEthernet0/0/0 is up, line protocol is up
 Hardware is ISR4331-3x1GE, address is 5486.bc25.1f70 (bia 5486.bc25.1f70)
 Description: << WAN Link >>
 Internet address is 192.0.2.2/30
 MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,
 reliability 255/255, txload 1/255, rxload 1/255
 Encapsulation ARPA, loopback not set
 Keepalive not supported
 Full Duplex, 1000Mbps, link type is auto, media type is RJ45
 output flow-control is off, input flow-control is off
 ARP type: ARPA, ARP Timeout 04:00:00
 Last input 00:00:00, output 00:00:11, output hang never
 Last clearing of "show interface" counters never
 Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
 Queueing strategy: fifo
 Output queue: 0/40 (size/max)
 5 minute input rate 7000 bits/sec, 4 packets/sec
 5 minute output rate 4000 bits/sec, 4 packets/sec
 22579370 packets input, 8825545968 bytes, 0 no buffer
 Received 67 broadcasts (0 IP multicasts)
 0 runts, 0 giants, 0 throttles
 3612699 input errors, 3612699 CRC, 0 frame, 0 overrun, 0 ignored
 0 watchdog, 10747057 multicast, 0 pause input
 12072167 packets output, 1697953637 bytes, 0 underruns
 0 output errors, 0 collisions, 1 interface resets
 6 unknown protocol drops
 0 babbles, 0 late collision, 0 deferred
 5 lost carrier, 0 no carrier, 0 pause output
 0 output buffer failures, 0 output buffers swapped out

```

- A. The interface is receiving excessive broadcast traffic.
- B. The cable connection between the two devices is faulty.
- C. The interface is operating at a different speed than the connected device.
- D. The bandwidth setting of the interface is misconfigured

**Answer:** B

**Explanation:**

Here we see a large number of input errors and CRC errors.

| Media Problem   | Suggested Actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Excessive noise | <ol style="list-style-type: none"> <li>1. Use the <b>show interfaces ethernet</b> exec command to determine the status of the router's Ethernet interfaces. The presence of many CRC errors but not many collisions is an indication of excessive noise.</li> <li>2. Check cables to determine whether any are damaged.</li> <li>3. Look for badly spaced taps causing reflections.</li> <li>4. If you are using 100BaseTX, make sure you are using Category 5 cabling and not another type, such as Category 3.</li> </ol> |

**QUESTION 533**

Refer to the exhibit. A network engineer must update the configuration on Switch2 so that it sends LLDP packets every minute and the information sent via LLDP is refreshed every 3 minutes. Which configuration must the engineer apply?

```

Switch2# show lldp
Global LLDP Information
 Status: ACTIVE
 LLDP advertisements are sent every 30 seconds
 LLDP hold time advertised is 120 seconds
 LLDP interface reinitialization delay is 2 seconds

```

- A. Switch2(config)#lldp timer 60  
Switch2(config)#lldp holdtime 180
- B. Switch2(config)#lldp timer 60  
Switch2(config)#lldp tlv-select 180
- C. Switch2(config)#lldp timer 1  
Switch2(config)#lldp holdtime 3
- D. Switch2(config)#lldp timer 1  
Switch2(config)#lldp tlv-select 3

**Answer:** A

**Explanation:**

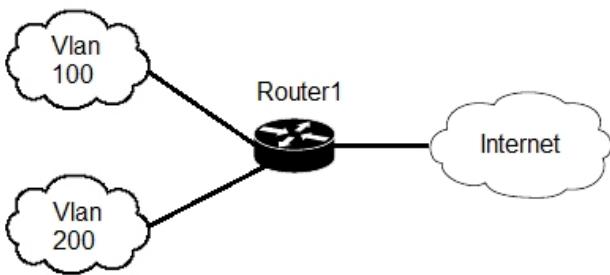
|               |                                                                   |                                                                                                                                               |
|---------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step 2</b> | (Optional) [no] <b>lldp holdtime seconds</b>                      | Specifies the amount of time in seconds that a receiving device should hold the information that is sent by your device before discarding it. |
|               | <b>Example:</b><br><code>switch(config)# lldp holdtime 200</code> | The range is 10 to 255 seconds; the default is 120 seconds.                                                                                   |

Reference:

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/6-x/system\\_management/configuration/guide/b\\_Cisco\\_Nexus\\_9000\\_Series\\_NX-OS\\_System\\_Management\\_Configuration\\_Guide/sm\\_lldp.pdf](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus9000/sw/6-x/system_management/configuration/guide/b_Cisco_Nexus_9000_Series_NX-OS_System_Management_Configuration_Guide/sm_lldp.pdf)

**QUESTION 534**

Refer to the exhibit. Users on existing VLAN 100 can reach sites on the Internet. Which action must the administrator take to establish connectivity to the Internet for users in VLAN 200?



```

Router1(config)#interface GigabitEthernet0/0
Router1(config-if)#ip address 209.165.200.225 255.255.255.224
Router1(config-if)#ip nat outside
Router1(config)# interface GigabitEthernet0/1
Router1(config-if)#ip nat inside
Router1(config)# interface GigabitEthernet0/1.100
Router1(config-if)#encapsulation dot1Q 100
Router1(config-if)#ip address 10.10.10.1 255.255.255.0
Router1(config)#interface GigabitEthernet0/1.200
Router1(config-if)#encapsulation dot1Q.200
Router1(config-if)#ip address 10.10.20.1 255.255.255.0
Router1(config)#ip access-list standard NAT_INSIDE_RANGES
Router1(config-std-nac)#permit 10.10.10.0 0.0.0.255
Router1(config)#ip nat inside source list NAT_INSIDE_RANGES interface GigabitEthernet0/0 overload

```

- A. Define a NAT pool on the router.
- B. Configure static NAT translations for VLAN 200.
- C. Configure the ip nat outside command on another interface for VLAN 200.
- D. Update the NAT\_INSIDE\_RANGES ACL.

**Answer:** D

**Explanation:**

ip nat inside source list NAT\_INSIDE\_RANGES interfaces G0/0 Overload

This command essentially tells the router all ip addresses specified from the access list "NAT\_INSIDE\_RANGES" will be translated via port address translation (PAT) using the ip address of G0/0.

By reconfiguring the ACL to include the 200 vlan it will provide the easiest way to get VLAN 200 access to the internet.

#### QUESTION 535

Refer to the exhibit. Packets received by the router from BGP enter via a serial interface at 209.165.201.1. Each route is present within the routing table.

Which interface is used to forward traffic with a destination IP of 10.1.1.19?

|       |                      |     |      |
|-------|----------------------|-----|------|
| RIP   | 10.1.1.16/28 [120/5] | via | F0/0 |
| OSPF  | 10.1.1.0/24 [110/30] | via | F0/1 |
| OSPF  | 10.1.1.0/24 [110/40] | via | F0/2 |
| EIGRP | 10.1.0.0/26 [90/20]  | via | F0/3 |
| EIGRP | 10.0.0.0/8 [90/133]  | via | F0/4 |

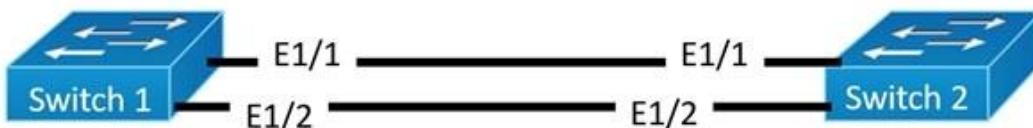
- A. F0/4

- B. F0/0
- C. F0/1
- D. F0/3

**Answer:** B

**QUESTION 536**

Refer to the exhibit. An engineer is configuring an EtherChannel using LACP between Switches 1 and 2. Which configuration must be applied so that only Switch 1 sends LACP initiation packets?



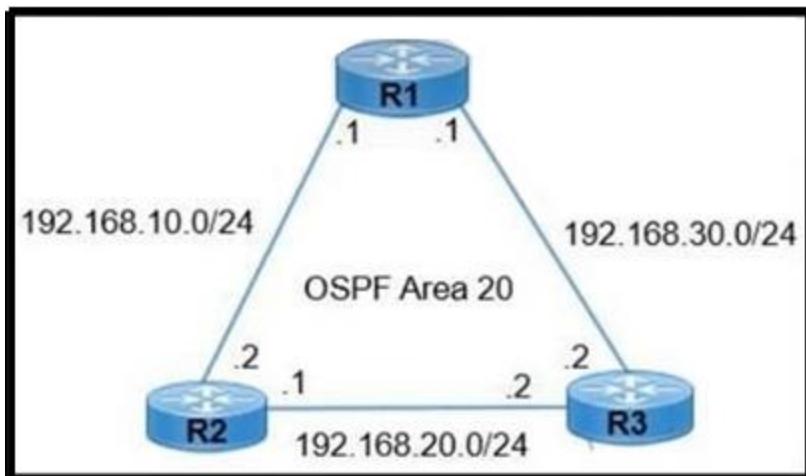
|                          |                          |
|--------------------------|--------------------------|
| Interface Po1            | Interface Po1            |
| switchport               | switchport               |
| switchport mode access   | switchport mode access   |
| switchport access vlan 2 | switchport access vlan 2 |
|                          |                          |
| Interface E1/1 - 2       | Interface E1/1 - 2       |
| Switchport               | Switchport               |
| Switchport mode access   | Switchport mode access   |
| Switchport access vlan 2 | Switchport access vlan 2 |

- A. Switch1(config-if)#channel-group 1 mode on  
Switch2(config-if)#channel-group 1 mode passive
- B. Switch1(config-if)#channel-group 1 mode passive  
Switch2(config-if)#channel-group 1 mode active
- C. Switch1(config-if)#channel-group 1 mode active  
Switch2(config-if)#channel-group 1 mode passive
- D. Switch1(config-if)#channel-group 1 mode on  
Switch2(config-if)#channel-group 1 mode active

**Answer:** C

**QUESTION 537**

Refer to the exhibit. R1 learns all routes via OSPF. Which command configures a backup static route on R1 to reach the 192.168.20.0/24 network via R3?



- A. R1(config)#ip route 192.168.20.0 255.255.0.0 192.168.30.2
- B. R1(config)#ip route 192.168.20.0 255.255.255.0 192.168.30.2 90
- C. R1(config)#ip route 192.168.20.0 255.255.255.0 192.168.30.2 111
- D. R1(config)#ip route 192.168.20.0 255.255.255.0 192.168.30.2

**Answer:** C

#### QUESTION 538

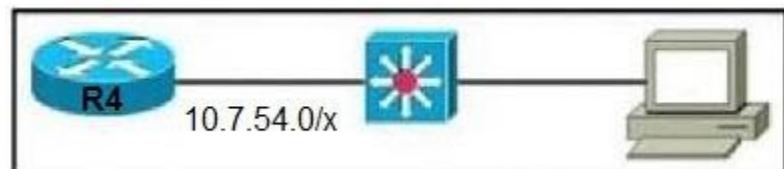
What is the difference between IPv6 unicast and anycast addressing?

- A. IPv6 anycast nodes must be explicitly configured to recognize the anycast address, but IPv6 unicast nodes require no special configuration
- B. IPv6 unicast nodes must be explicitly configured to recognize the unicast address, but IPv6 anycast nodes require no special configuration
- C. An individual IPv6 unicast address is supported on a single interface on one node but an IPv6 anycast address is assigned to a group of interfaces on multiple nodes.
- D. Unlike an IPv6 anycast address, an IPv6 unicast address is assigned to a group of interfaces on multiple nodes

**Answer:** C

#### QUESTION 539

Refer to the exhibit. The router has been configured with a super net to accommodate the requirements for 380 users on a Subnet. The requirement already considers 30% future growth. Which configuration verifies the IP subnet on router R4?

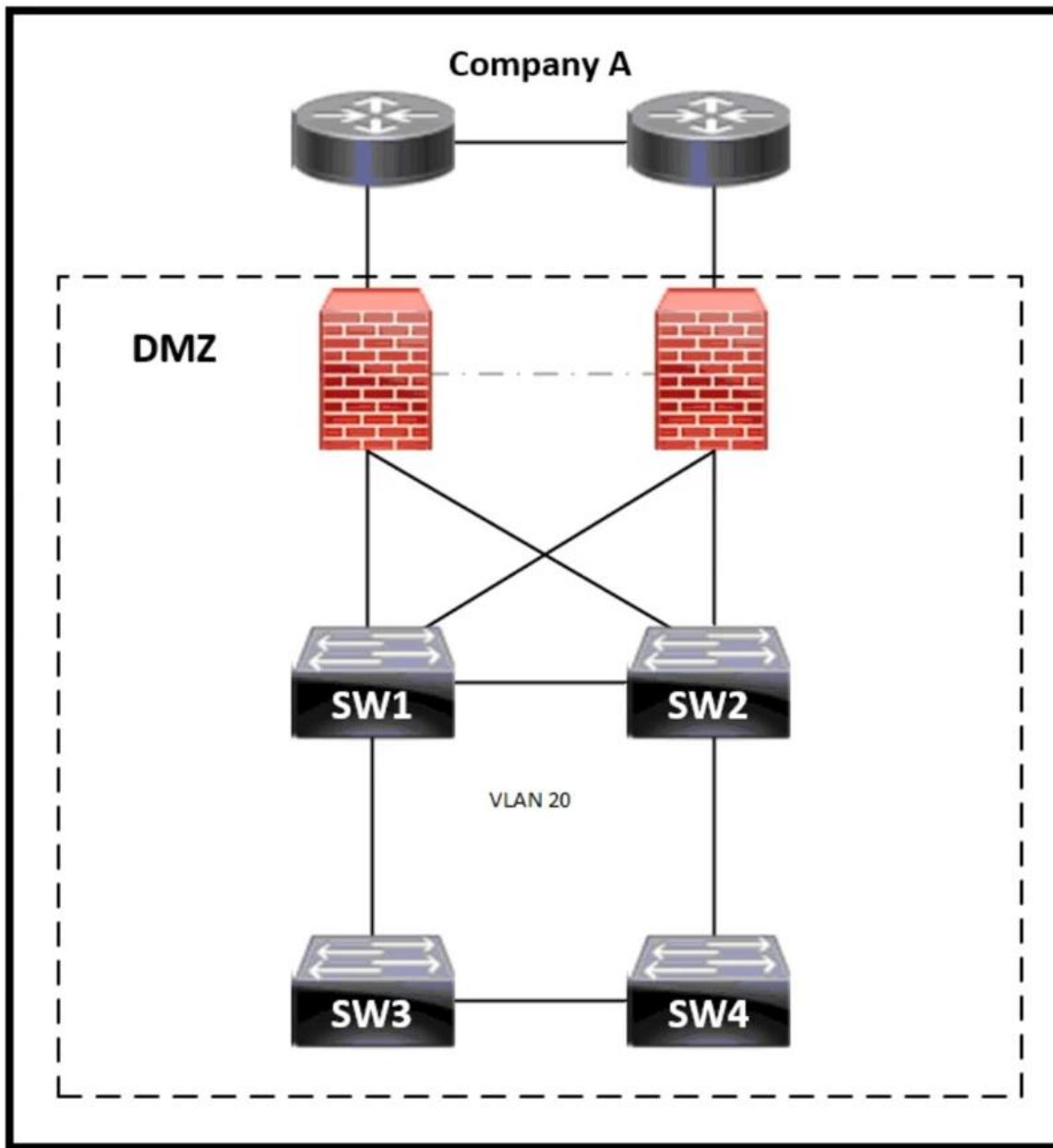


- A. Subnet: 10.7.54.0  
Subnet mask: 255.255.128.0  
Broadcast address: 10.5.55.255

- Usable IP address range: 10.7.54.1 - 10.7.55.254
- B. Subnet: 10.7.54.0  
Subnet mask: 255.255.255.0  
Broadcast address: 10.7.54.255  
Usable IP address range: 10.7.54.1 - 10.7.55.254
- C. Subnet: 10.7.54.0  
Subnet mask: 255.255.254.0  
Broadcast address: 10.7.54.255  
Usable IP address range: 10.7.54.1 - 10.7.55
- D. Subnet: 10.7.54.0  
Subnet mask: 255.255.254.0  
Broadcast address: 10.7.55.255  
Usable IP address range: 10.7.54.1 - 10.7.55

**Answer:** D

**QUESTION 540**



SW1 = 24596 0018.184e.3c00

SW2 = 28692 004a.13e9.6900

SW3 = 32788 0022.55cf.dd00

SW4 = 64000 0041.396d.690f

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

**Answer:** A

**QUESTION 541**

Which protocol uses the SSL?

- A. HTTP
- B. SSH
- C. HTTPS
- D. Telnet

**Answer:** C

**Explanation:**

HTTPS (port 443, TCP): HTTPS combines HTTP with a security protocol (Secure Sockets Layer [SSL]/Transport Layer Security[TLS]). DNS (port 53, TCP, and UDP): DNS is used to resolve Internet names to IP addresses.

**QUESTION 542**

Which two spanning-tree states are bypassed on an interface running PortFast? (Choose two.)

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

**Answer:** BD

**QUESTION 543**

A Cisco engineer is configuring a factory-default router with these three passwords:

- The user EXEC password for console access is p4ssw0rd1
- The user EXEC password for Telnet access is s3cr3t2
- The password for privileged EXEC mode is pnv4t3p4ss

Which command sequence must the engineer configured?

- A. **enable secret priv4t3p4ss**  
!  
line con 0  
password p4ssw0rd1  
!  
line vty 0 15  
password s3cr3t2
- B. **enable secret priv4t3p4ss**  
!  
line con 0  
password p4ssw0rd1  
login  
!  
line vty 0 15  
password s3cr3t2  
login
- C. **enable secret priv4t3p4ss**  
!

```

line con 0
password login p4ssw0rd1
!
line vty 0 15
password login s3cr3t2
login
D. enable secret privilege 15 priv4t3p4ss
!
line con 0
password p4ssw0rd1
login
!
line vty 0 15
password s3cr3t2
login

```

**Answer:** D

#### QUESTION 544

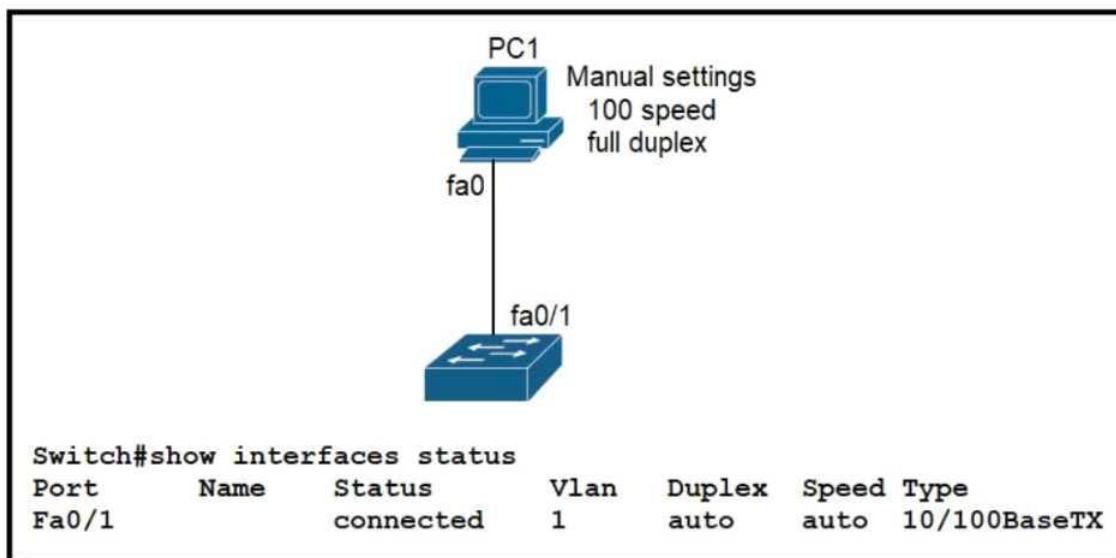
How does Rapid PVST+ create a fast loop-free network topology?

- A. It requires multiple links between core switches
- B. It generates one spanning-tree instance for each VLAN
- C. It maps multiple VLANs into the same spanning-tree instance
- D. It uses multiple active paths between end stations.

**Answer:** B

#### QUESTION 545

Refer to the exhibit. The link between PC1 and the switch is up, but it is performing poorly. Which interface condition is causing the performance problem?



- A. There is a duplex mismatch on the interface

- B. There is an issue with the fiber on the switch interface.
- C. There is a speed mismatch on the interface.
- D. There is an interface type mismatch

**Answer:** A

**Explanation:**

The PC's port runs in full duplex, while the Fa0/1 port on the switch is in auto-negotiate mode. This results in a duplex mismatch that causes the switchport to operate as half-duplex, which culminates in poor performance on the link.

"A duplex mismatch occurs when two connected devices are configured in different duplex modes.

This may happen, for example, if one is configured for autonegotiation while the other one has a fixed mode of operation that is full duplex (no autonegotiation). In such conditions, the autonegotiation device correctly detects the speed of operation, but is unable to correctly detect the duplex mode.

As a result, it sets the correct speed but assumes half-duplex mode.

When a device is operating in full duplex while the other one operates in half duplex, the connection works reliably only at a very low throughput."

Reference: [https://en.wikipedia.org/wiki/Autonegotiation#Duplex\\_mismatch](https://en.wikipedia.org/wiki/Autonegotiation#Duplex_mismatch)

#### **QUESTION 546**

Which PoE mode enables powered-device detection and guarantees power when the device is detected?

- A. dynamic
- B. static
- C. active
- D. auto

**Answer:** B

#### **QUESTION 547**

What is an expected outcome when network management automation is deployed?

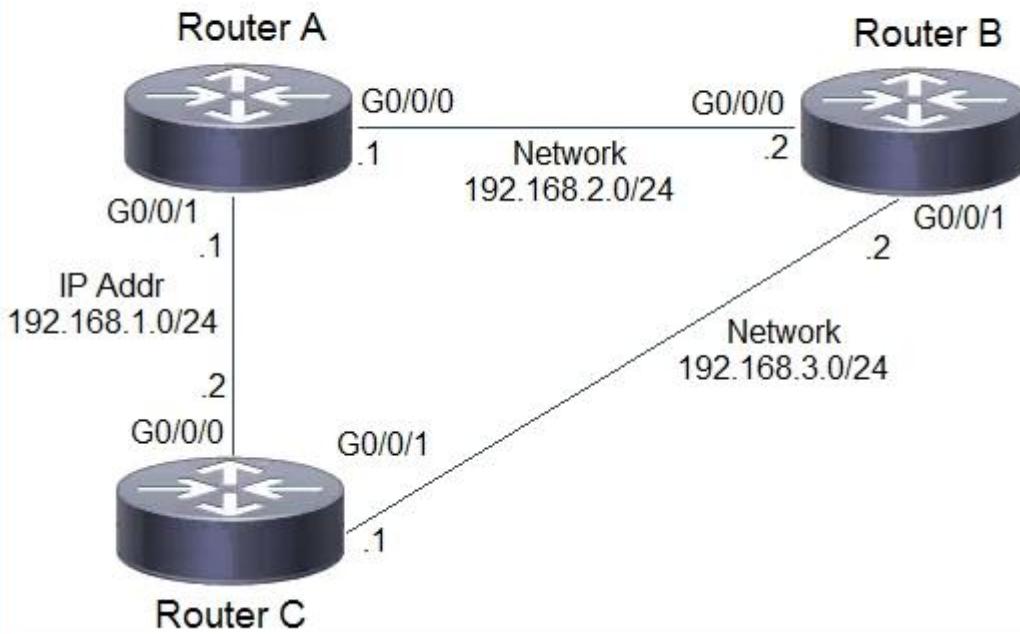
- A. A distributed management plane must be used.
- B. Software upgrades are performed from a central controller
- C. Complexity increases when new device configurations are added
- D. Custom applications are needed to configure network devices

**Answer:** B

#### **QUESTION 548**

Refer to the exhibit. Which action must be taken to ensure that router A is elected as the DR for OSPF area 0?

## OSPF AREA 0



- A. Configure the OSPF priority on router A with the lowest value between the three routers.
- B. Configure router B and router C as OSPF neighbors of router A.
- C. Configure the router A interfaces with the highest OSPF priority value within the area.
- D. Configure router A with a fixed OSPF router ID

**Answer:** C

### QUESTION 549

Refer to the exhibit. Web traffic is coming in from the WAN interface. Which route takes precedence when the router is processing traffic destined for the LAN network at 10.0.10.0/24?

```
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 10.0.0.0/8 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 10.0.1.100, 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 10.0.10.0/24 [110/10] via 10.0.1.4, 00:39:08, Gigabit Ethernet 0/0
D 10.0.10.0/24 [90/10] via 10.0.1.5, 00:39:08, Gigabit Ethernet 0/1
```

- A. via next-hop 10.0.1.5
- B. via next-hop 10.0.1.4
- C. via next-hop 10.0.1.50
- D. via next-hop 10.0.1.100

**Answer:** A

#### QUESTION 550

Which two components comprise part of a PKI? (Choose two.)

- A. preshared key that authenticates connections
- B. RSA token
- C. CA that grants certificates
- D. clear-text password that authenticates connections
- E. one or more CRLs

**Answer:** BC

#### QUESTION 551

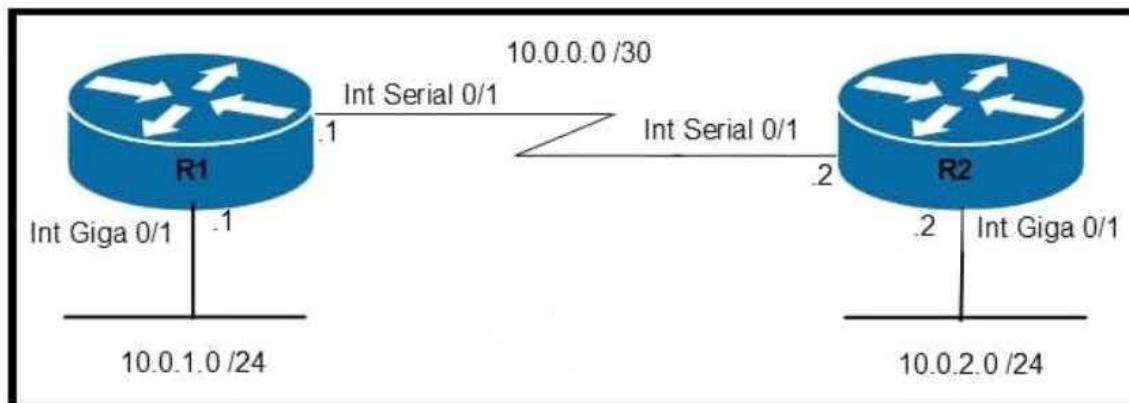
What are two benefits of FHRPs? (Choose two.)

- A. They enable automatic failover of the default gateway.
- B. They allow multiple devices to serve as a single virtual gateway for clients in the network.
- C. They are able to bundle multiple ports to increase bandwidth.
- D. They prevent loops in the Layer 2 network.
- E. They allow encrypted traffic.

**Answer:** AB

#### QUESTION 552

Refer to the exhibit. Which command configures OSPF on the point-to-point link between routers R1 and R2?



- A. router-id 10.0.0.15
- B. neighbor 10.1.2.0 cost 180
- C. ipospf priority 100

- D. network 10.0.0.0 0.0.0.255 area 0

**Answer:** D

**QUESTION 553**

What causes a port to be placed in the err-disabled state?

- A. nothing plugged into the port
- B. link flapping
- C. shutdown command issued on the port
- D. latency

**Answer:** B

**Explanation:**

The Errdisable error disable feature was designed to inform the administrator when there is a port problem or error. The reasons a catalyst switch can go into Errdisable mode and shutdown a port are many and include:

Duplex Mismatch

Loopback Error

Link Flapping (up/down)

Port Security Violation

Unicast Flooding

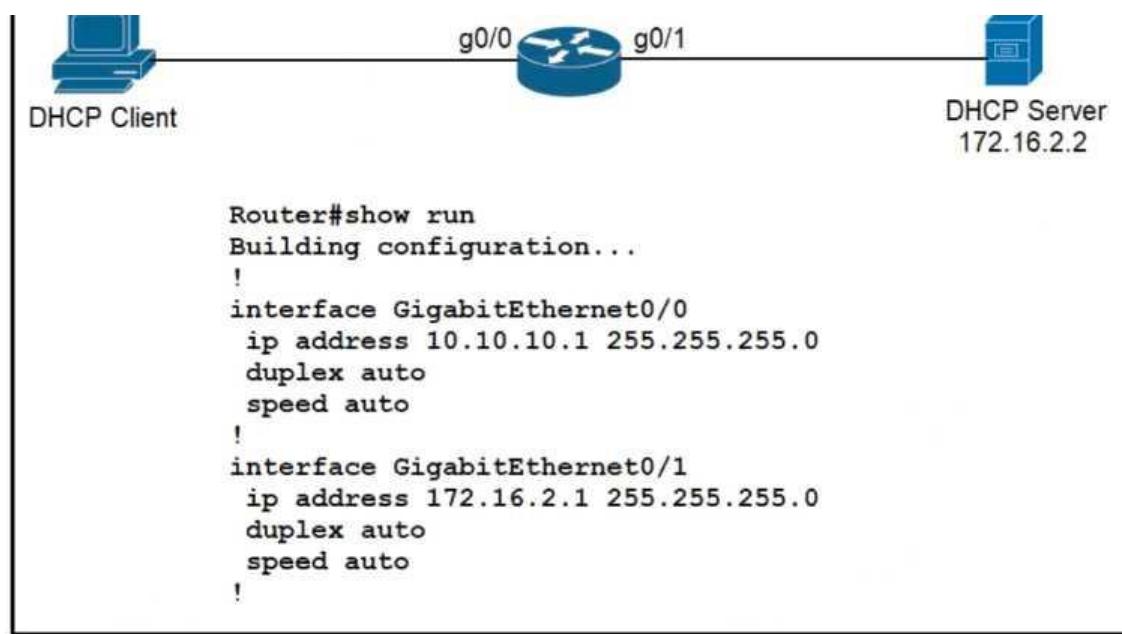
UDLD Failure

Broadcast Storms

BPDU Guard

**QUESTION 554**

Refer to the exhibit. An engineer is configuring a new router on the network and applied this configuration. Which additional configuration allows the PC to obtain its IP address from a DHCP server?



- A. Configure the ip dhcp relay information command under interface Gi0/1.
- B. Configure the ip dhcp smart-relay command globally on the router
- C. Configure the ip helper-address 172.16.2.2 command under interface Gi0/0
- D. Configure the ip address dhcp command under interface Gi0/0

**Answer:** C

#### QUESTION 555

Which Layer 2 switch function encapsulates packets for different VLANs so that the packets traverse the same port and maintain traffic separation between the VLANs?

- A. VLAN numbering
- B. VLAN DSCP
- C. VLAN tagging
- D. VLAN marking

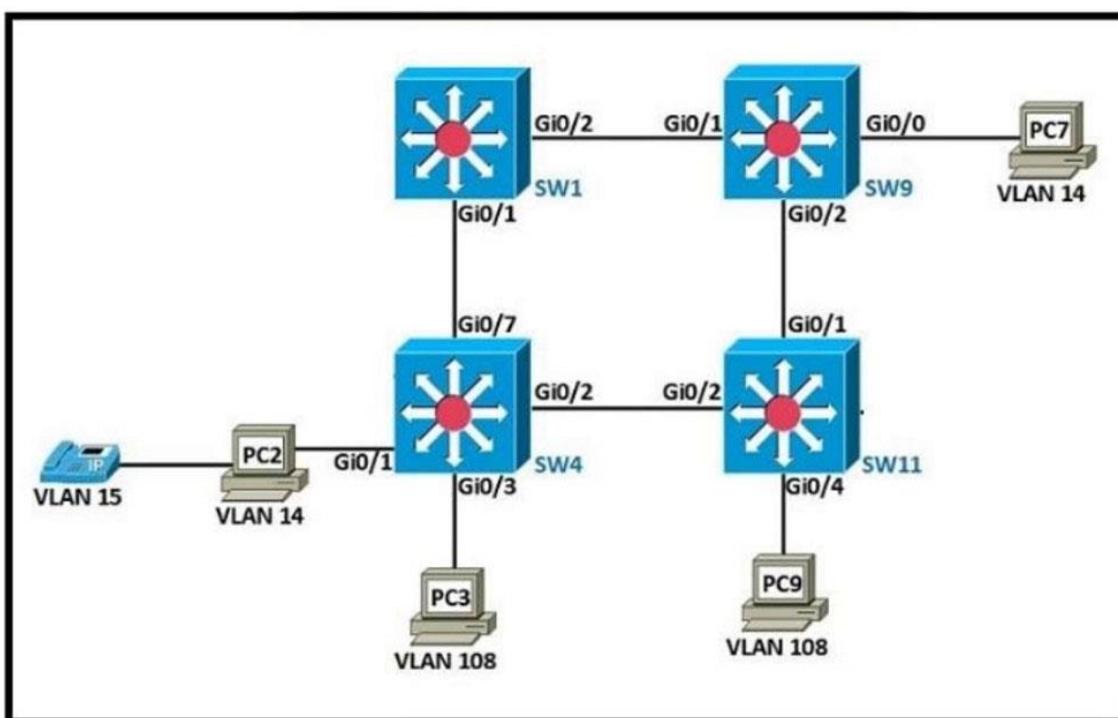
**Answer:** C

#### QUESTION 556

Refer to the exhibit. The following must be considered:

- SW1 is fully configured for all traffic
- The SW4 and SW9 links to SW1 have been configured
- The SW4 interface Gi0/1 and Gi0/0 on SW9 have been configured
- The remaining switches have had all VLANs added to their VLAN database

Which configuration establishes a successful ping from PC2 to PC7 without interruption to traffic flow between other PCs?



A. SW4

```
interface Gi0/7
switchport mode trunk
switchport trunk allowed vlan 108
!
interface Gi0/2
switchport mode access
switchport access vlan 14
```

```
SW11#
interface Gi0/2
switchport mode trunk
switchport trunk allowed vlan 14,108
!
interface Gi0/1
switchport mode trunk
switchport trunk allowed vlan 14,108
```

```
SW9#
interface Gi0/2
switchport mode access
switchport access vlan 14
```

B. SW4

```
interface Gi0/2
switchport mode trunk
switchport trunk allowed vlan 14,108
```

```
SW11#
interface Gi0/2
switchport mode trunk
switchport trunk allowed vlan 14,108
!!
interface Gi0/1
switchport mode trunk
switchport trunk allowed vlan 14,108
```

```
SW9#
interface Gi0/2
switchport mode trunk
switchport trunk allowed vlan 14
```

C. SW4

```
interface Gi0/2
switchport mode trunk
switchport trunk allowed vlan 14
```

```
SW11#
interface Gi0/1
switchport mode trunk
switchport trunk allowed vlan 14
```

```
SW9#
interface Gi0/2
switchport mode trunk
switchport trunk allowed vlan 108
```

D. SW4

```
interface Gi0/2
switchport mode access
switchport access vlan 14
```

```
SW11#
interface Gi0/2
switchport mode trunk
switchport trunk allowed vlan 14
!
interface Gi0/0
switchport mode access
switchport access vlan 14
!
interface Gi0/1
switchport mode trunk
```

```
SW9#
interface Gi0/2
switchport mode access
switchport access vlan 14
```

**Answer:** B

#### QUESTION 557

R1 as an NTP server must have:

- NTP authentication enabled
- NTP packets sourced from Interface loopback 0
- NTP stratum 2
- NTP packets only permitted to client IP 209.165.200.225

How should R1 be configured?

- A. 

```
ntp authenticate
ntp authentication-key 2 sha1 CISCO123
ntp source Loopback0
ntp access-group server-only 10
ntp master 2
!
access-list 10 permit udp host 209.165.200.225 any eq 123
```
- B. 

```
ntp authenticate
ntp authentication-key 2 md5 CISCO123
ntp interface Loopback0
ntp access-group server-only 10
ntp stratum 2
!
access-list 10 permit 209.165.200.225
```
- C. 

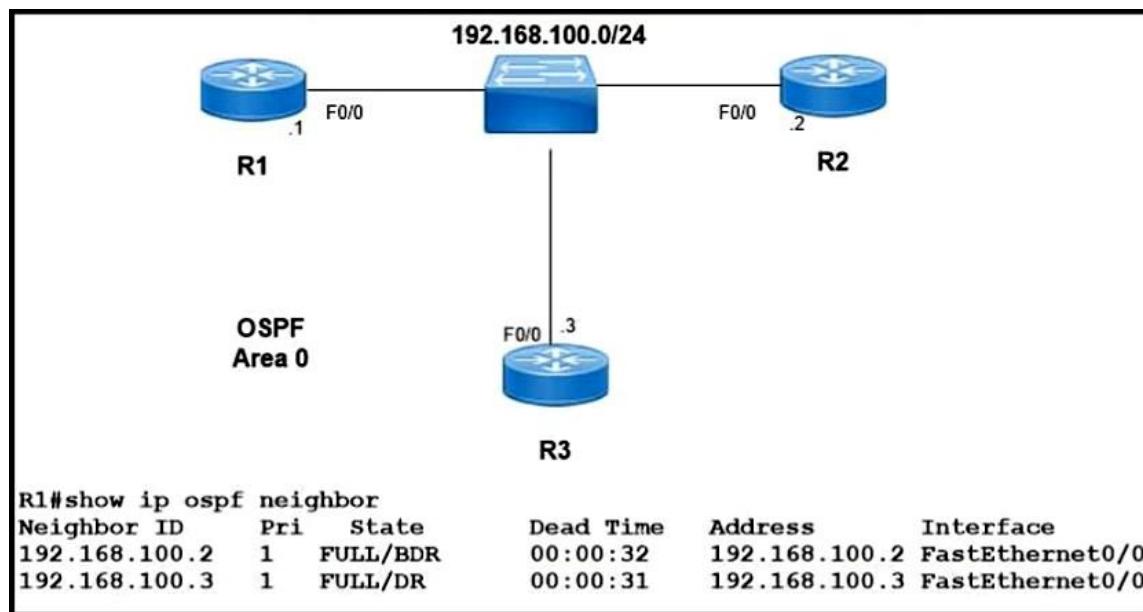
```
ntp authenticate
ntp authentication-key 2 md5 CISCO123
ntp source Loopback0
ntp access-group server-only 10
ntp master 2
!
access-list 10 permit 209.165.200.225
```

D. **ntp authenticate**  
 ntp authentication-key 2 md5 CISCO123  
 ntp source Loopback0  
 ntp access-group server-only 10  
 ntp stratum 2  
 !  
 access-list 10 permit udp host 209.165.200.225 any eq 123

**Answer:** C

#### QUESTION 558

Refer to the exhibit. Which two configurations must the engineer apply on this network so that R1 becomes the DR? (Choose two.)



- A. R3(config)#interface fastethernet 0/0  
R3(config-if)#ip ospf priority 0
- B. R1(config)#router ospf 1  
R1(config-router)#router-id 192.168.100.1
- C. R1(config)#interface fastethernet 0/0  
R1(config-if)#ip ospf priority 200
- D. R1(config)#interface fastethernet 0/0  
R1(config-if)#ip ospf priority 0
- E. R3(config)#interface fastethernet 0/0  
R3(config-if)#ip ospf priority 200

**Answer:** AC

**Explanation:**

R1 must have the Highest priority, and thus R3 a low or lowest Priority.

#### QUESTION 559

Which type of IPv6 address is similar to a unicast address but is assigned to multiple devices on the same network at the same time?

- A. global unicast address
- B. anycast address
- C. multicast address
- D. link-local address

**Answer:** B

**Explanation:**

An IPv6 anycast address is any IPv6 unicast address that can be assigned to multiple devices.

#### QUESTION 560

Which two network actions occur within the data plane? (Choose two.)

- A. Add or remove an 802.1Q trunking header.
- B. Make a configuration change from an incoming NETCONF RPC.
- C. Run routing protocols.
- D. Match the destination MAC address to the MAC address table.
- E. Reply to an incoming ICMP echo request.

**Answer:** AD

**Explanation:**

Data Plane:

- De-encapsulating and re-encapsulating a packet in a data-link frame (routers, Layer 3 switches)
- Adding or removing an 802.1Q trunking header (routers and switches)
- Matching an Ethernet frame's destination Media Access Control (MAC) address to the MAC address table (Layer 2 switches)
- Matching an IP packet's destination IP address to the IP routing table (routers, Layer 3 switches)
- Encrypting the data and adding a new IP header (for virtual private network [VPN] processing)
- Changing the source or destination IP address (for Network Address Translation [NAT] processing)
- Discarding a message due to a filter (access control lists [ACLs], port security)

#### QUESTION 561

Which QoS traffic handling technique retains excess packets in a queue and reschedules these packets for later transmission when the configured maximum bandwidth has been surpassed?

- A. weighted random early detection
- B. traffic policing
- C. traffic shaping
- D. traffic prioritization

**Answer:** C

**Explanation:**

Policing drops or remarks traffic that exceeds limits, but shaping regulates the traffic back to a defined rate by delaying or queuing the traffic.

#### QUESTION 562

Refer to the exhibit. All traffic enters the CPE router from interface Serial0/3 with an IP address of 192.168.50.1. Web traffic from the WAN is destined for a LAN network where servers are load-balanced. An IP packet with a destination address of the HTTP virtual IP of 192.168.1.250 must

be forwarded. Which routing table entry does the router use?

```
CPE# show ip route
 192.168.1.0/24 is variably subnetted, 3 subnets, 3 masks
B 192.168.1.0/24 [20/1] via 192.168.12.2, 00:00:06
R 192.168.1.128/25 [120/5] via 192.168.13.3, 00:02:35, Ethernet0/1
O 192.168.1.192/26 [110/11] via 192.168.14.4, 00:02:23, Ethernet0/2
D 192.168.1.224/27 [90/1024640] via 192.168.15.5, 00:01:40, Ethernet0/3
```

- A. 192.168.1.0/24 via 192.168.12.2
- B. 192.168.1.128/25 via 192.168.13.3
- C. 192.168.1.192/26 via 192.168.14.4
- D. 192.168.1.224/27 via 192.168.15.5

**Answer:** D

**Explanation:**

Longest Prefix route inclusive of the IP Address. /27 = 32, which is inclusive in this case.

#### QUESTION 563

Which interface mode must be configured to connect the lightweight APs in a centralized architecture?

- A. WLAN dynamic
- B. management
- C. trunk
- D. access

**Answer:** D

**Explanation:**

While the Cisco WLCs always connect to 802.1Q trunks, Cisco lightweight APs do not understand VLAN tagging and should only be connected to the access ports of the neighbor switch.

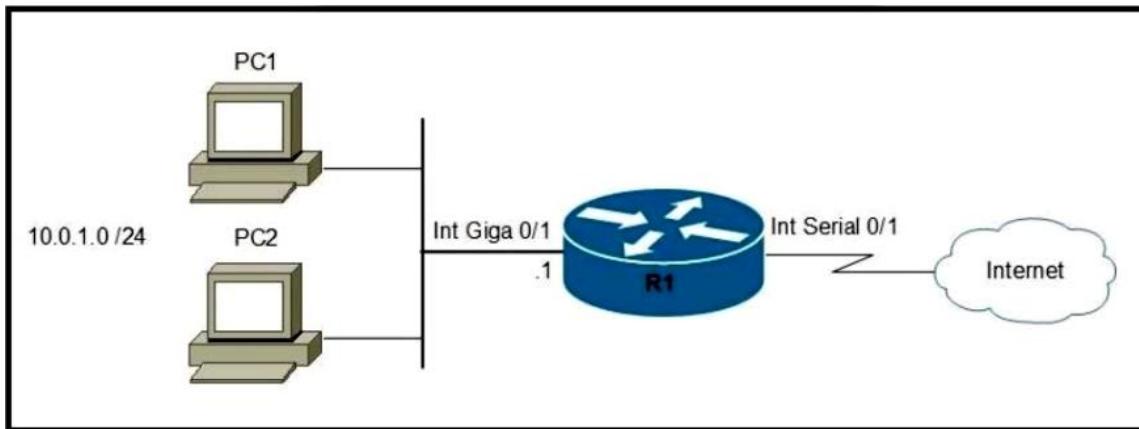
This is an example switch port configuration from the Catalyst 3750: interface GigabitEthernet1/0/22 description Access Port Connection to Cisco Lightweight AP switchport access vlan 5 switchport mode access no shutdown

Reference:

<https://www.cisco.com/c/en/us/support/docs/wireless/4400-series-wireless-lan-controllers/69719-wlc-lwap-config.html>

#### QUESTION 564

Refer to the exhibit. Which two commands must be configured on router R1 to enable the router to accept secure remote-access connections? (Choose two)



- A. transport input telnet
- B. crypto key generate rsa
- C. ip ssh pubkey-chain
- D. login console
- E. username cisco password 0 Cisco

**Answer:** BE

#### QUESTION 565

Which type of network attack overwhelms the target server by sending multiple packets to a port until the half-open TCP resources of the target are exhausted?

- A. SYM flood
- B. reflection
- C. teardrop
- D. amplification

**Answer:** A

#### QUESTION 566

Refer to the exhibit. An engineer assumes a configuration task from a peer. Router A must establish an OSPF neighbor relationship with neighbor 172.1.1.1. The output displays the status of the adjacency after 2 hours.

What is the next step in the configuration process for the routers to establish an adjacency?

| A# show ip ospf neighbor |     |             |           |             |           |  |
|--------------------------|-----|-------------|-----------|-------------|-----------|--|
| Neighbor ID              | Pri | State       | Dead Time | Address     | Interface |  |
| 172.1.1.1                | 1   | EXCHANGE/ - | 00:00:36  | 172.16.32.1 | Serial0.1 |  |

- A. Configure router A to use the same MTU size as router B.
- B. Set the router B OSPF ID to a nonhost address.
- C. Configure a point-to-point link between router A and router B.
- D. Set the router B OSPF ID to the same value as its IP address

**Answer:** A

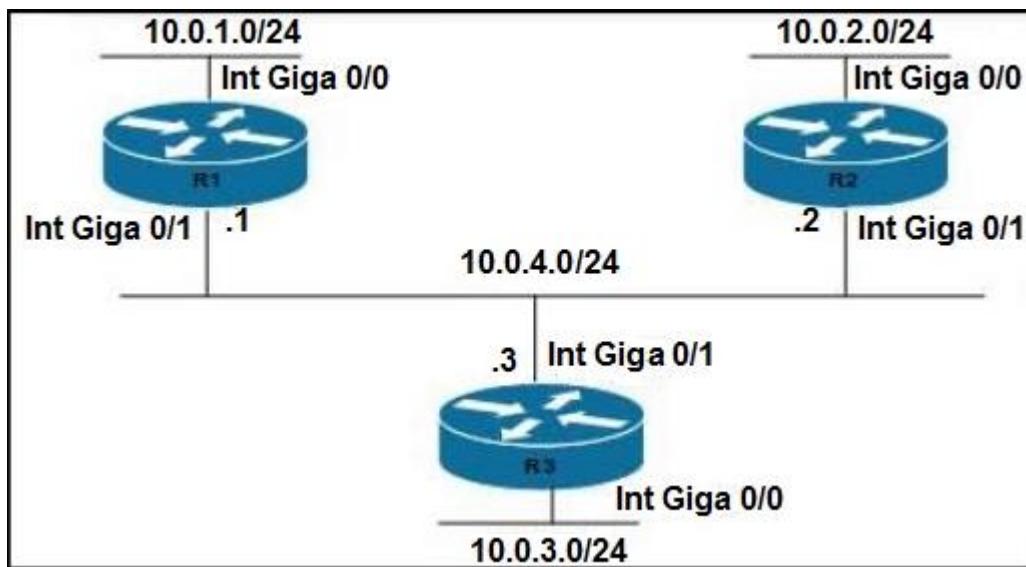
**Explanation:**

In Exstart/Exchange State, when attempting to run OSPF between a Cisco router and another vendor's router. If the router with the higher MTU sends a packet larger than the MTU set on the neighboring router, the neighboring router ignores the packet.

### QUESTION 567

Refer to the exhibit. Routers R1 and R3 have the default configuration. The router R2 priority is set to 99.

Which commands on R3 configure it as the DR in the 10.0.4.0/24 network?



- A. R3(config)#interface Gig0/1  
R3(config-if)#ip ospf priority 100
- B. R3(config)#interface Gig0/0  
R3(config-if)#ip ospf priority 100
- C. R3(config)#interface Gig0/0  
R3(config-if)#ip ospf priority 1
- D. R3(config)#interface Gig0/1  
R3(config-if)#ip ospf priority 0

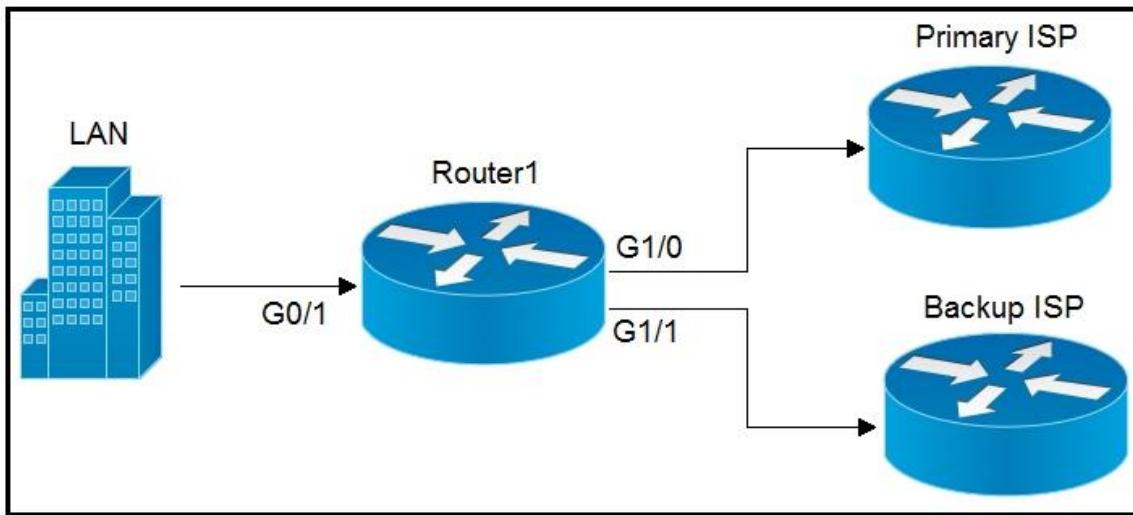
**Answer:** A

**Explanation:**

In the case of OSPF, 0 means you will never be elected as DR or BDR. Default priority is 1. Highest priority will be elected as the DR.

### QUESTION 568

Refer to the exhibit. A company is configuring a failover plan and must implement the default routes in such a way that a floating static route will assume traffic forwarding when the primary link goes down. Which primary route configuration must be used?



- A. ip route 0.0.0.0 0.0.0.0 192.168.0.2 GigabitEthernet1/0
- B. ip route 0.0.0.0 0.0.0.0 192.168.0.2 tracked
- C. ip route 0.0.0.0 0.0.0.0 192.168.0.2 floating
- D. ip route 0.0.0.0 0.0.0.0 192.168.0.2

**Answer:** D

**Explanation:**

The primary route should use the default administrative distance, since the AD for static routes is 1.

#### QUESTION 569

What is one reason to implement LAG on a Cisco WLC?

- A. to increase security and encrypt management frames
- B. to provide link redundancy and load balancing
- C. to allow for stateful and link-state failover
- D. to enable connected switch ports to failover and use different VLANs

**Answer:** B

#### QUESTION 570

Which action implements physical access control as part of the security program of an organization?

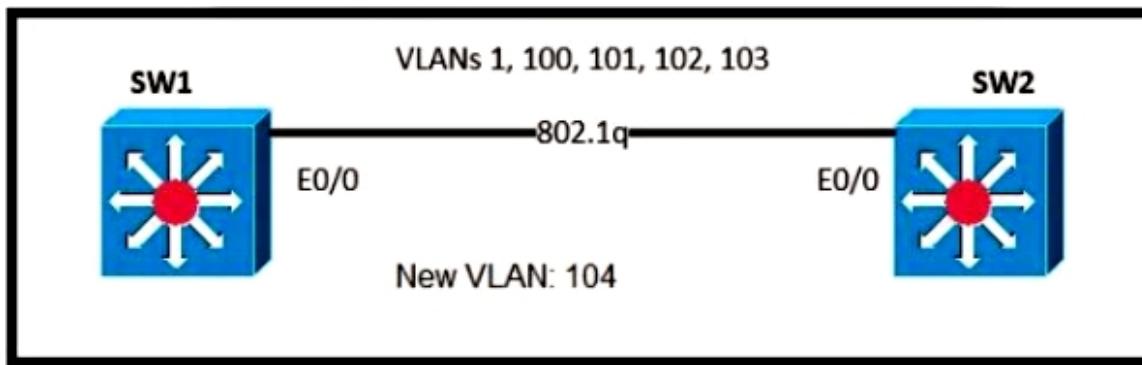
- A. configuring a password for the console port
- B. backing up syslogs at a remote location
- C. configuring enable passwords on network devices
- D. setting up IP cameras to monitor key infrastructure

**Answer:** A

#### QUESTION 571

Refer to the exhibit. An engineer is asked to insert the new VLAN into the existing trunk without

modifying anything previously configured. Which command accomplishes this task?



- A. switchport trunk allowed vlan 100-104
- B. switchport trunk allowed vlan add 104
- C. switchport trunk allowed vlan all
- D. switchport trunk allowed vlan 104

**Answer:** B

#### QUESTION 572

Which field within the access-request packet is encrypted by RADIUS?

- A. authorized services
- B. authenticator
- C. username
- D. password

**Answer:** D

**Explanation:**

RADIUS by itself provides no encryption of all traffic. It protects only a small part of the traffic, notably the passwords.

#### QUESTION 573

A network administrator is setting up a new IPv6 network using the 64-bit address 2001:0EB8:00C1:2200:0001:0000:0000:0331/64. To simplify the configuration, the administrator has decided to compress the address. Which IP address must the administrator configure?

- A. ipv6 address 21:EB8:C1:2200:1::331/64
- B. ipv6 address 2001:EB8:C1:22:1::331/64
- C. ipv6 address 2001:EB8:C1:2200:1::331/64
- D. ipv6 address 2001:EB8:C1:2200:1:0000:331/64

**Answer:** C

#### QUESTION 574

A network engineer is configuring a switch so that it is remotely reachable via SSH. The engineer has already configured the host name on the router. Which additional command must the engineer configure before entering the command to generate the RSA key?

- A. password password
- B. crypto key generate rsa modulus 1024
- C. ip domain-name domain
- D. ip ssh authentication-retries 2

**Answer:** C

**QUESTION 575**

Refer to the exhibit. Which two commands must be added to update the configuration of router R1 so that it accepts only encrypted connections? (Choose two)

```
R1#show run
Building configuration...
!
hostname R1
!
username CNAC password 0 cona123
!
ip domain-name CNAC.com
!
interface GigabitEthernet0/0/0
 ip address 192.168.1.10 255.255.255.0
 duplex auto
 speed auto
!
line vty 0 15
 login local

R1#show crypto key mypubkey rsa

R1#show ssh
%No SSHv2 server connections running.
%No SSHv1 server connections running.
```

- A. username CNAC secret R!41!4319115@
- B. ip ssh version 2

- C. line vty 0 4
- D. crypto key generate rsa 1024
- E. transport input ssh

**Answer:** DE

**QUESTION 576**

A network engineer must configure two new subnets using the address block 10.70.128.0/19 to meet these requirements:

- The first subnet must support 24 hosts
- The second subnet must support 472 hosts
- Both subnets must use the longest subnet mask possible from the address block

Which two configurations must be used to configure the new subnets and meet a requirement to use the first available address in each subnet for the router interfaces? (Choose two )

- A. interface vlan 1234  
ip address 10.70.159.1 255.255.254.0
- B. interface vlan 1148  
ip address 10.70.148.1 255.255.254.0
- C. interface vlan 4722  
ip address 10.70.133.17 255.255.255.192
- D. interface vlan 3002  
ip address 10.70.147.17 255.255.255.224
- E. interface vlan 155  
ip address 10.70.155.65 255.255.255.224

**Answer:** BE

**Explanation:**

These two are the only ones that have the first IP in their range and meet the requirement of 472 hosts (B) and 24 hosts (E) respectively.

**QUESTION 577**

What is a function of Opportunistic Wireless Encryption in an environment?

- A. offer compression
- B. increase security by using a WEP connection
- C. provide authentication
- D. protect traffic on open networks

**Answer:** D

**QUESTION 578**

Refer to the exhibit. Which two commands when used together 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) |

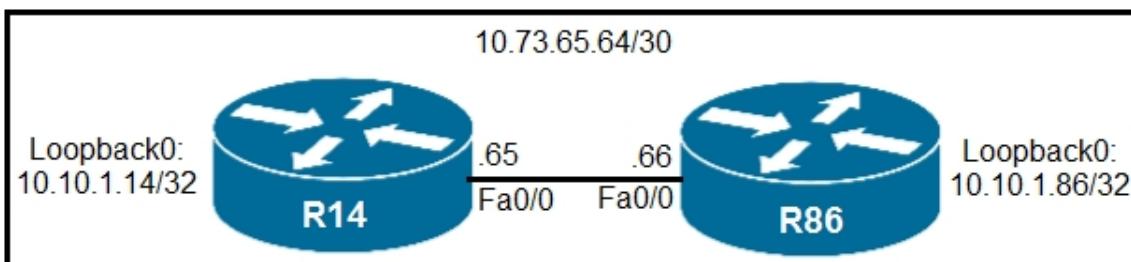
- A. int range g0/0-1 channel-group 10 mode active
- B. int range g0/0-1 channel-group 10 mode desirable
- C. int range g0/0-1 channel-group 10 mode passive
- D. int range g0/0-1 channel-group 10 mode auto
- E. int range g0/0-1 channel-group 10 mode on

**Answer:** AC

#### QUESTION 579

Refer to the exhibit. A static route must be configured on R14 to forward traffic for the 172.21.34.0/25 network that resides on R86.

Which command must be used to fulfill the request?



- A. ip route 172.21.34.0 255.255.255.192 10.73.65.65
- B. ip route 172.21.34.0 255.255.255.0 10.73.65.65
- C. ip route 172.21.34.0 255.255.128.0 10.73.65.64
- D. ip route 172.21.34.0 255.255.255.128 10.73.65.66

**Answer:** D

#### QUESTION 580

A network engineer must implement an IPv6 configuration on the vlan 2000 interface to create a routable locally-unique unicast address that is blocked from being advertised to the internet.

Which configuration must the engineer apply?

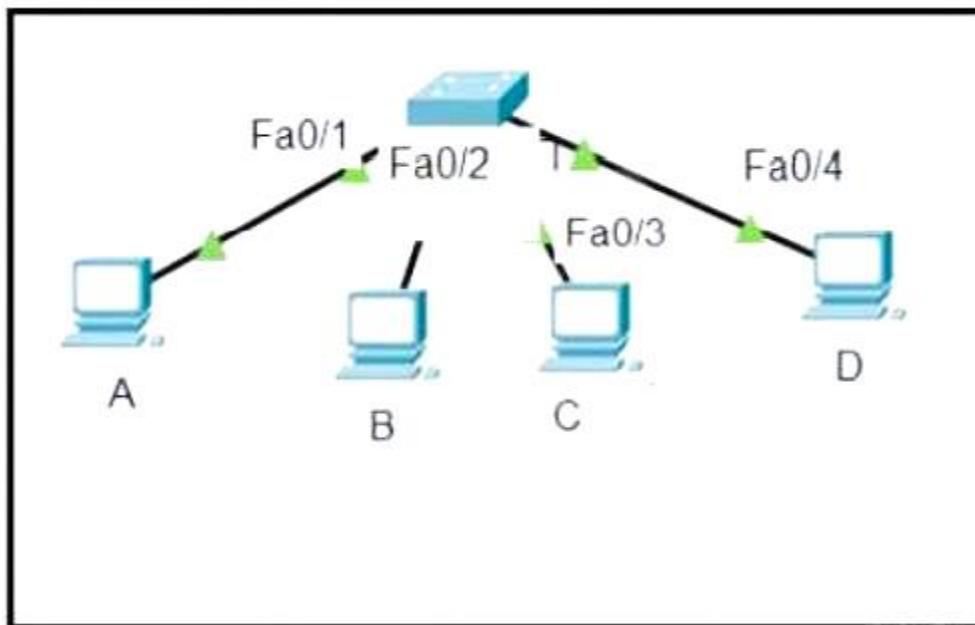
- A. interface vlan 2000  
ipv6 address ffc0:0000:aaaa::1234:2343/64
- B. interface vlan 2000  
Ipv6 address fc00:0000:aaaa:a15d:1234:2343:8aca/64
- C. interface vlan 2000  
ipv6 address fe80:0000:aaaa::1234:2343/64

- D. interface vlan 2000  
  ipv6 address fd00::1234:2343/64

**Answer:** D

**QUESTION 581**

Refer to the exhibit. Host A sent a data frame destined for host D.



```
SwitchA#show mac-address table Mac Address Table
Vlan Mac Address Type Ports
2 000c.859c.bb7b DYNAMIC Fa0/1
2 0010.11dc.3e91 DYNAMIC Fa0/2
2 0041.39d1.c469 DYNAMIC Fa0/3
Switch A#
```

QUESTION 581

What does the switch do when it receives the frame from host A?

- A. It drops the frame from the switch CAM table.
- B. It floods the frame out of all ports except port Fa0/1.
- C. It shuts down the port Fa0/1 and places it in err-disable mode.
- D. It experiences a broadcast storm.

**Answer:** B

**QUESTION 582**

What is the function of the controller in a software-defined network?

- A. multicast replication at the hardware level

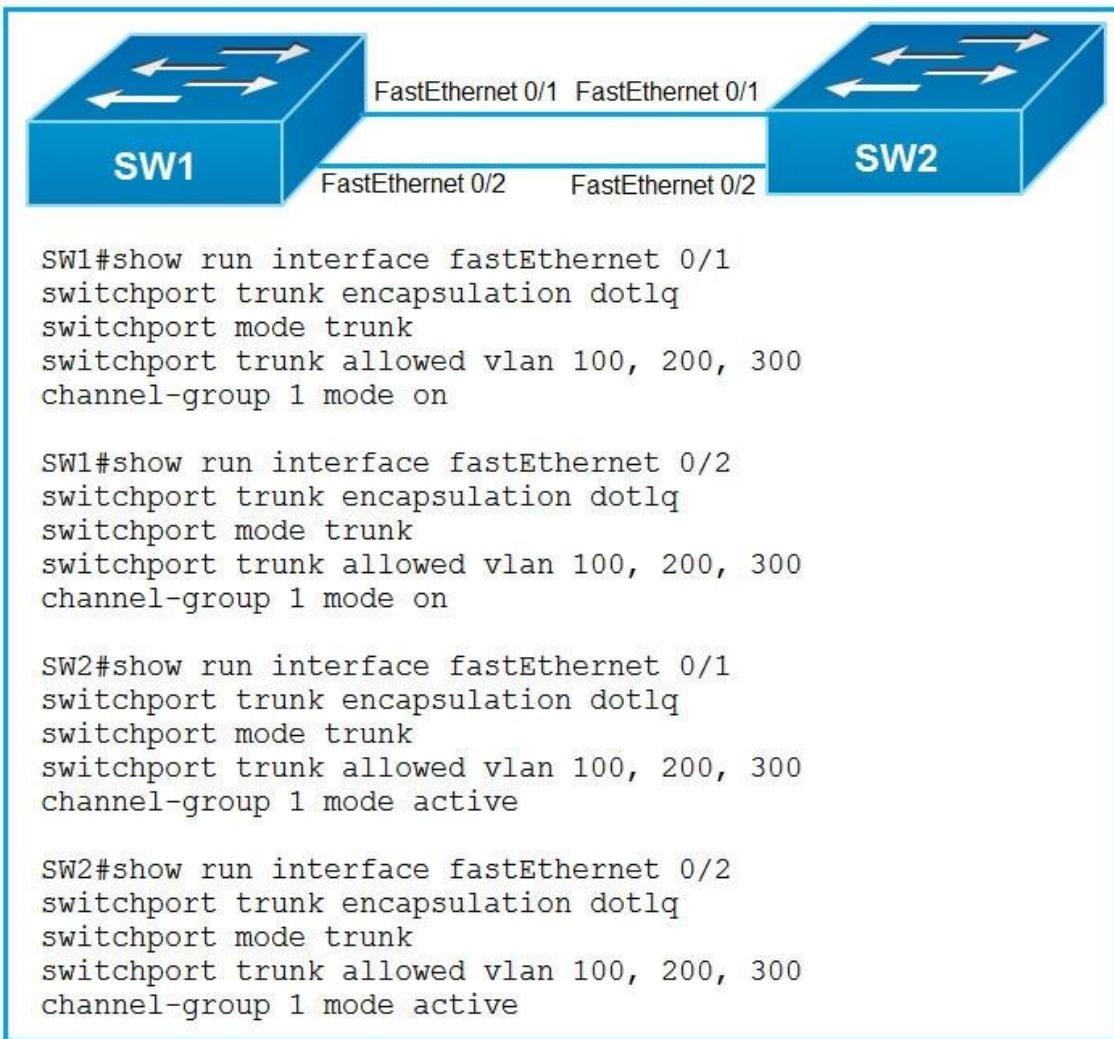
- B. fragmenting and reassembling packets
- C. making routing decisions
- D. forwarding packets

**Answer:** C

**QUESTION 583**

Refer to the exhibit. An engineer built a new L2 LACP EtherChannel between SW1 and SW2 and executed these show commands to verify the work.

Which additional task allows the two switches to establish an LACP port channel?



- A. Change the channel-group mode on SW2 to auto
- B. Change the channel-group mode on SW1 to desirable.
- C. Configure the interface port-channel 1 command on both switches.
- D. Change the channel-group mode on SW1 to active or passive.

**Answer:** D

**QUESTION 584**

What is a requirement for nonoverlapping Wi-Fi channels?

- A. different security settings
- B. discontinuous frequency ranges
- C. different transmission speeds
- D. unique SSIDs

**Answer:** B

**QUESTION 585**

A network engineer is installing an IPv6-only capable device.

The client has requested that the device IP address be reachable only from the internal network.  
Which type of IPv6 address must the engineer assign?

- A. unique local address
- B. link-local address
- C. aggregatable global address
- D. IPv4-compatible IPv6 address

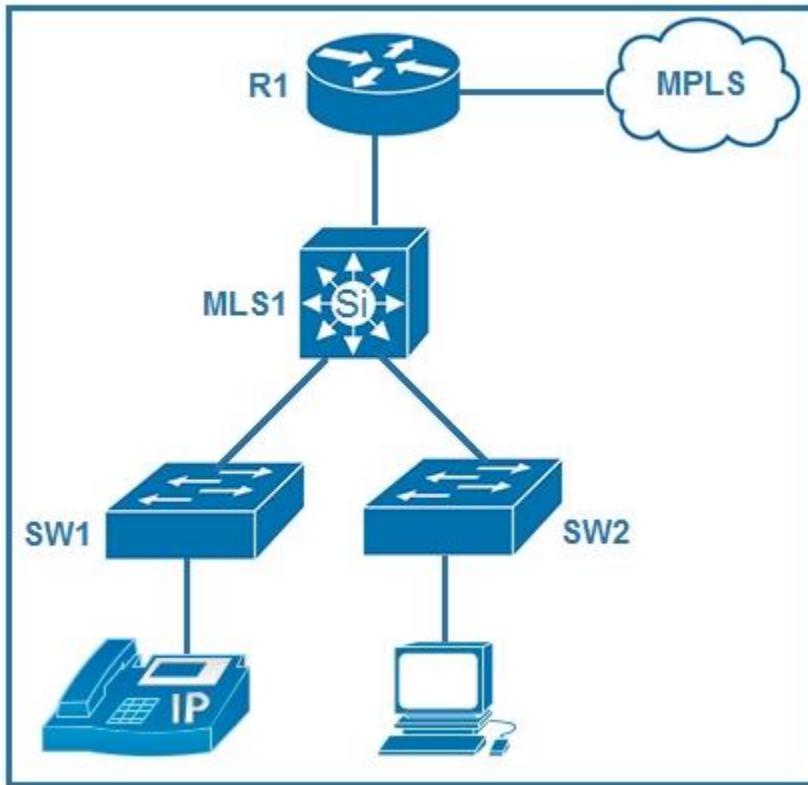
**Answer:** A

**Explanation:**

A link-local address is a network address that is valid only for communications within the subnetwork.

**QUESTION 586**

Refer to the exhibit. Which plan must be implemented to ensure optimal QoS marking practices on this network?



- A. As traffic traverses MLS1 remark the traffic, but trust all markings at the access layer.
- B. Trust the IP phone markings on SW1 and mark traffic entering SW2 at SW2.
- C. Remark traffic as it traverses R1 and trust all markings at the access layer.
- D. As traffic enters from the access layer on SW1 and SW2 trust all traffic markings.

**Answer:** B

**Explanation:**

Tell the switch to trust CoS markings from a Cisco IP phone on the access port. Cisco IP phones use 802.1q tags, these .1q tags contain the CoS value, to mark voice traffic at layer 2. When it's forwarded upstream, the DSCP value is trusted (on the uplink port) and unchanged, but the .1q tag (and with it the CoS value) is stripped off by the upstream switch when received over the trunk.

#### QUESTION 587

Refer to the exhibit. Traffic that is flowing over interface TenGigabitEthernet0/0 experiences slow transfer speeds.

What is the reason for the issue?

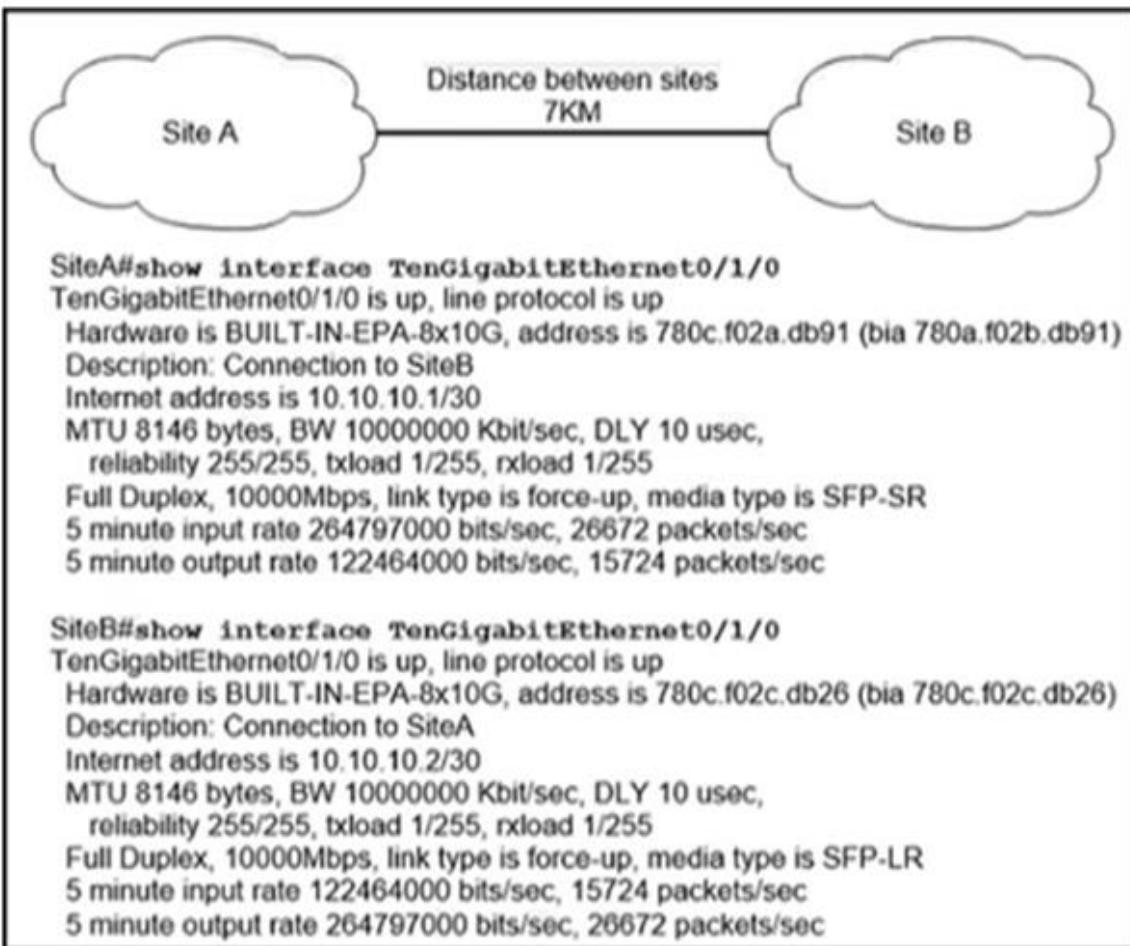
```
TenGigabitEthernet0/0/0 is up, line protocol is up
 Hardware is BUILT-IN-2T+6X1GE, address is 74a0.2f7a.0123 (bia 74a0.2f7a.0123)
 Description: Uplink
 Internet address is 10.1.1.1/24
 MTU 1500 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
 reliability 255/255, txload 1/255, rxload 1/255
 Encapsulation ARPA, loopback not set
 Keepalive not supported
 Full Duplex, 10000Mbps, link type is force-up, media type is unknown media type
 output flow-control is on, input flow-control is on
 ARP type: ARPA, ARP Timeout 04:00:00
 Last input 00:00:00, output 00:05:40, output hang never
 Last clearing of "show interface" counters never
 Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0
 Queueing strategy: fifo
 Output queue: 0/40 (size/max)
 5 minute input rate 6160000 bits/sec, 1113 packets/sec
 5 minute output rate 11213000 bits/sec, 1553 packets/sec
 12662416065 packets input, 12607032232894 bytes, 0 no buffer
 Received 14117163 broadcasts (0 IP multicasts)
 0 runts, 0 giants, 0 throttles
 0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
 0 watchdog, 26271385 multicast, 0 pause input
 7907779058 packets output, 5073750426832 bytes, 0 underruns
 0 output errors, 8662416065 collisions, 1 interface resets
 0 unknown protocol drops
 0 babbles, 0 late collision, 0 deferred
 0 lost carrier, 0 no carrier, 0 pause output
 0 output buffer failures, 0 output buffers swapped out
 1 carrier transitions
```

- A. heavy traffic congestion
- B. a duplex incompatibility
- C. a speed conflict
- D. queuing drops

**Answer:** C

#### QUESTION 588

Refer to the exhibit. Site A was recently connected to site B over a new single-mode fiber path. Users at site A report Intermittent connectivity Issues with applications hosted at site B. What is the reason for the problem?

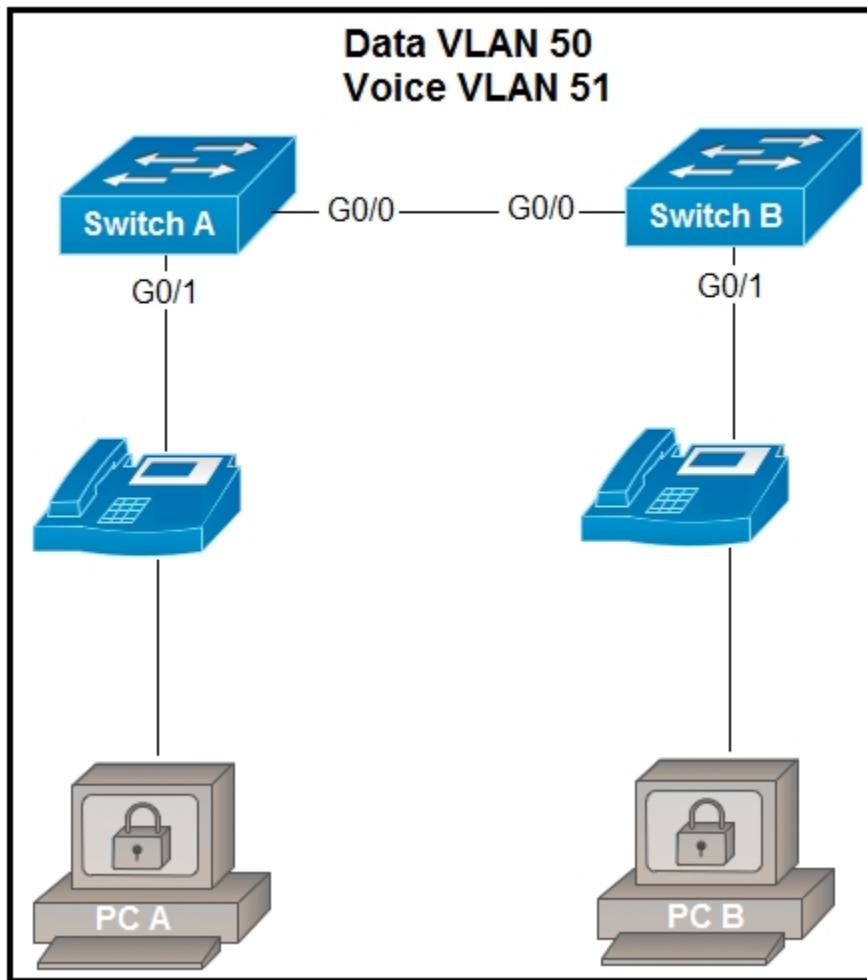


- A. Heavy usage is causing high latency.
- B. An incorrect type of transceiver has been inserted into a device on the link.
- C. physical network errors are being transmitted between the two sites.
- D. The wrong cable type was used to make the connection.

**Answer:** B

**QUESTION 589**

Refer to the exhibit. Switch A is newly configured. All VLANs are present in the VLAN database. The IP phone and PC A on Gi0/1 must be configured for the appropriate VLANs to establish connectivity between the PCs.



Which command set fulfills the requirement?

- A. SwitchA(config-if)#switchport mode access  
SwitchA(config-if)#switchport access vlan 50  
SwitchA(config-if)#switchport voice vlan 51
- B. SwitchA(config-if)#switchport mode trunk  
SwitchA(config-if)#switchport trunk allowed vlan add 50, 51  
SwitchA(config-if)#switchport voice vlan dot1p
- C. SwitchA(config-if)#switchport mode trunk  
SwitchA(config-if)#switchport trunk allowed vlan 50, 51  
SwitchA(config-if)#mis qos trust cos
- D. SwitchA(config-if)#switchport mode access  
SwitchA(config-if)#switchport access vlan 50  
SwitchA(config-if)#switchport voice vlan untagged

**Answer:** A

#### QUESTION 590

An engineer must configure R1 for a new user account. The account must meet these requirements:

- It must be configured in the local database.
- The username is engineer.
- It must use the strongest password configurable.

Which command must the engineer configure on the router?

- A. R1 (config)# username engineer2 algorithm-type scrypt secret test2021
- B. R1(config)# username engineer2 secret 5 password S1\$b1Ju\$kZbBS1Pyh4QzwXyZ
- C. R1(config)# username engineer2 privilege 1 password 7 test2021
- D. R1(config)# username englneer2 secret 4 S1Sb1Ju\$kZbBS1Pyh4QzwXyZ

**Answer:** A

**QUESTION 591**

Refer to the exhibit. Router R1 resides in OSPF Area 0. After updating the R1 configuration to influence the paths that it will use to direct traffic, an engineer verified that each of the four Gigabit interfaces has the same route to 10.10.0.0/16.

Which interface will R1 choose to send traffic to reach the route?

```
R1#show run
!
router ospf 1
auto-cost reference-bandwidth 100000
!
interface GigabitEthernet0/0
bandwidth 10000000
!
interface GigabitEthernet0/1
bandwidth 10000000
!
interface GigabitEthernet0/2
ip ospf cost 100
!
interface GigabitEthernet0/3
ip ospf cost 1000
end
```

- A. GigabitEthernet0/0
- B. GigabitEthernet0/1
- C. GigabitEthernet0/2
- D. GigabitEthernet0/3

**Answer:** B

**QUESTION 592**

What is a requirement when configuring or removing LAG on a WLC?

- A. The incoming and outgoing ports for traffic flow must be specified if LAG is enabled.

- B. The controller must be rebooted after enabling or reconfiguring LAG.
- C. The management interface must be reassigned if LAG disabled.
- D. Multiple untagged interfaces on the same port must be supported.

**Answer:** C

**Explanation:**

When you enable LAG or change the LAG configuration, you must immediately reboot the controller.

<http://what-when-how.com/deploying-and-troubleshooting-cisco-wireless-lan-controllers/lag-cisco-wireless-lan-controllers/>

### QUESTION 593

Refer to the exhibit. The DHCP server and clients are connected to the same switch.

What is the next step to complete the DHCP configuration to allow clients on VLAN 1 to receive addresses from the DHCP server?

|                                                                     |                                                |
|---------------------------------------------------------------------|------------------------------------------------|
| Switch#show ip dhcp snooping                                        | Switch#show ip dhcp snooping statistics detail |
| Switch DHCP snooping is enabled                                     | Packets Processed by DHCP Snooping = 34        |
| Switch DHCP gleaning is disabled                                    | Packets Dropped Because                        |
| DHCP snooping is configured on following VLANs:                     | IDB not known = 0                              |
| 1                                                                   | Queue full = 0                                 |
| DHCP snooping is operational on following VLANs:                    | Interface is in errdisabled = 0                |
| 1                                                                   | Received on untrusted ports = 32               |
| DHCP snooping is configured on the following L3 Interfaces:         | Nonzero giaddr = 0                             |
| Insertion of option 82 is disabled                                  | Source mac not equal to chaddr = 0             |
| circuit-id default format: vlan-mod-port                            | No binding entry = 0                           |
| remote-id: aabb.cc00.6500 (MAC)                                     | Insertion of opt82 fail = 0                    |
| Option 82 on untrusted port is not allowed                          | Unknown packet = 0                             |
| Verification of hwaddr field is enabled                             | Interface Down = 0                             |
| Verification of giaddr field is enabled                             | Unknown output interface = 0                   |
| DHCP snooping trust/rate is configured on the following Interfaces: | Misdirected Packets = 0                        |
| Interface Trusted Allow option Rate limit (pps)                     | packets with Invalid Size = 0                  |
|                                                                     | packets with Invalid Option = 0                |

- A. Configure the ip dhcp snooping trust command on the interface that is connected to the DHCP client.
- B. Configure the ip dhcp relay information option command on the interface that is connected to the DHCP client.
- C. Configure the ip dhcp snooping trust command on the interface that is connected to the DHCP server.
- D. Configure the ip dhcp relay information option command on the interface that is connected to the DHCP server.

**Answer:** C

**Explanation:**

If a Layer 2 LAN port is connected to a DHCP server, configure the port as trusted by entering the ip dhcp snooping trust interface configuration command.

[https://www.cisco.com/en/US/docs/general/Test/dwerblo/broken\\_guide/snoodhcp.html#wp1073367](https://www.cisco.com/en/US/docs/general/Test/dwerblo/broken_guide/snoodhcp.html#wp1073367)

### QUESTION 594

What provides centralized control of authentication and roaming in an enterprise network?

- A. a lightweight access point

- B. a firewall
- C. a wireless LAN controller
- D. a LAN switch

**Answer:** C

#### QUESTION 595

Refer to the exhibit. Traffic sourced from the loopback0 Interface is trying to connect via ssh to the host at 10.0.1.15.

What is the next hop to the destination address?

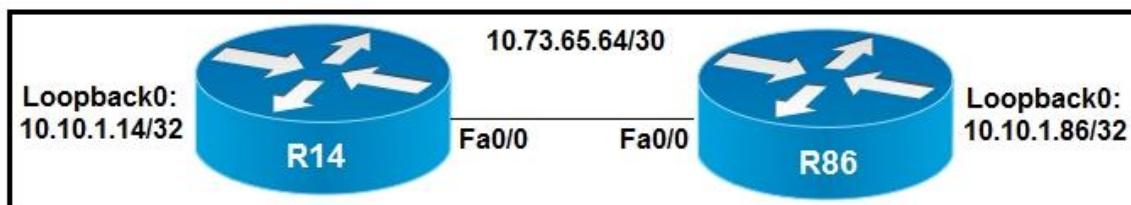
```
R1#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
 D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
 N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
 E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
 i - IS-IS, L1 - 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 192.168.3.5 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 192.168.0.40, 00:39:08, Serial0
C 10.0.1.0/24 is directly connected, Serial0
O 10.0.1.190/32 [110/5] via 192.168.0.35, 00:39:08, Serial0
O 10.0.1.0/24 [110/10] via 192.168.0.4, 00:39:08, Gigabit Ethernet 0/0
D 10.0.1.0/28 [90/10] via 192.168.0.7, 00:39:08, Gigabit Ethernet 0/0
```

- A. 192.168.0.7
- B. 192.168.0.4
- C. 192.168.0.40
- D. 192.168.3.5

**Answer:** B

#### QUESTION 596

Refer to the exhibit. All interfaces are configured with duplex auto and ip ospf network broadcast. Which configuration allows routers R14 and R86 to form an OSPFv2 adjacency and act as a central point for exchanging OSPF information between routers?



A.

```
R14#
interface Loopback0
ip ospf 10 area 0

interface FastEthernet0/0
ip address 10.73.65.65 255.255.255.252
ip ospf network broadcast
ip ospf 10 area 0
ip mtu 1500

router ospf 10
ip ospf priority 255
router-id 10.10.1.14
```

```
R86#
interface Loopback0
ip ospf 10 area 0

interface FastEthernet0/0
ip address 10.73.65.66 255.255.255.252
ip ospf network broadcast
ip ospf 10 area 0
ip mtu 1500
```

B.

```
R14#
interface FastEthernet0/0
ip address 10.73.65.65 255.255.255.252
ip ospf network broadcast
ip ospf priority 255
ip mtu 1500

router ospf 10
router-id 10.10.1.14
network 10.10.1.14 0.0.0.0 area 0
network 10.73.65.64 0.0.0.3 area 0
R86#
interface FastEthernet0/0
ip address 10.73.65.66 255.255.255.252
ip ospf network broadcast
ip mtu 1500

router ospf 10
router-id 10.10.1.86
network 10.10.1.86 0.0.0.0 area 0
network 10.73.65.64 0.0.0.3 area 0
```

C.

```
R14#
interface FastEthernet0/0
ip address 10.73.65.65 255.255.255.252
ip ospf network broadcast
ip ospf priority 0
ip mtu 1400

router ospf 10
router-id 10.10.1.14
network 10.10.1.14 0.0.0.0 area 0
network 10.73.65.64 0.0.0.3 area 0
R86#
interface Loopback0
ip address 10.10.1.86 255.255.255.255
```

D.

```
R14#
interface FastEthernet0/0
ip address 10.73.65.65 255.255.255.252
ip ospf network broadcast
ip ospf priority 255
ip mtu 1500

router ospf 10
router-id 10.10.1.14
network 10.10.1.14 0.0.0.0 area 0
network 10.73.65.64 0.0.0.3 area 0
R86#
interface FastEthernet0/0
ip address 10.73.65.66 255.255.255.252
ip ospf network broadcast
ip mtu 1400

router ospf 10
router-id 10.10.1.86
network 10.10.1.86 0.0.0.0 area 0
network 10.73.65.64 0.0.0.3 area 0
```

**Answer:** A**QUESTION 597**

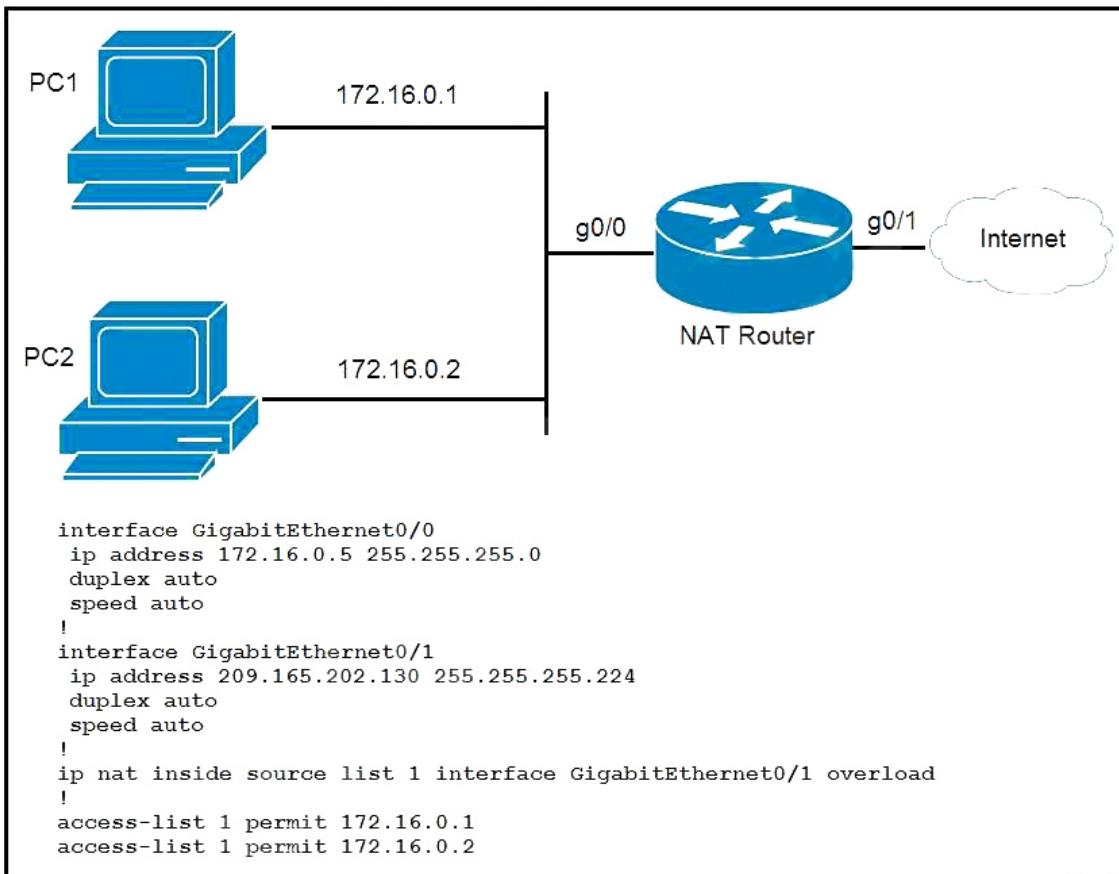
Refer to the exhibit. Which network prefix was learned via EIGRP?

```
R1# show ip route | begin gateway
Gateway of last resort is 209.165.200.254 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 209.165.200.254, Serial0/0/1
 is directly connected, Serial0/0/1
 172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C 172.16.1.0/24 is directly connected, FastEthernet0/0
L 172.16.1.1/32 is directly connected, FastEthernet0/0
R 172.16.2.0/24 [120/2] via 297.165.200.250, 00:00:25, Serial0/0/0
O 192.168.1.0/24 [110/4437] via 207.165.200.254, 00:00:17, Serial0/0/1
D 192.168.2.0/24 [90/84437] via 207.165.200.254, 00:00:15, Serial0/0/1
 207.165.200.0/24 is variably subnetted, 5 subnets, 2 masks
S 207.165.200.244/30 [1/1] via 207.165.200.254, Serial0/0/1
C 207.165.200.248/30 is directly connected, Serial0/0/0
L 207.165.200.249/32 is directly connected, Serial0/0/0
C 207.165.200.252/30 is directly connected, Serial0/0/1
L 207.165.200.253/32 is directly connected, Serial0/0/1
```

- A. 172.16.0.0/16
- B. 192.168.2.0/24
- C. 207.165.200.0/24
- D. 192.168.1.0/24

**Answer:** B**QUESTION 598**

Refer to the exhibit. How should the configuration be updated to allow PC1 and PC2 access to the Internet?



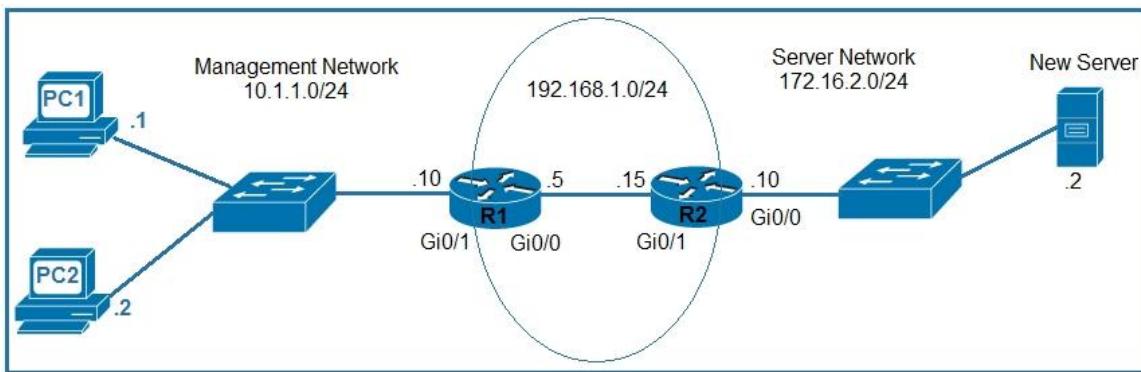
- A. Modify the configured number of the second access list.
- B. Add either the ip nat {inside|outside} command under both interfaces.
- C. Remove the overload keyword from the ip nat inside source command.
- D. Change the ip nat inside source command to use interface GigabitEthernet0/0.

**Answer:** B

#### QUESTION 599

Refer to the exhibit. An engineer is updating the R1 configuration to connect a new server to the management network. The PCs on the management network must be blocked from pinging the default gateway of the new server.

Which command must be configured on R1 to complete the task?



- A. R1(config)#ip route 172.16.2.2 255.255.255.248 gi0/1
- B. R1(config)#ip route 172.16.2.2 255.255.255.255 gi0/0
- C. R1(config)#ip route 172.16.2.0 255.255.255.0 192.168.1.15
- D. R1(config)#ip route 172.16.2.0 255.255.255.0 192.168.1.5

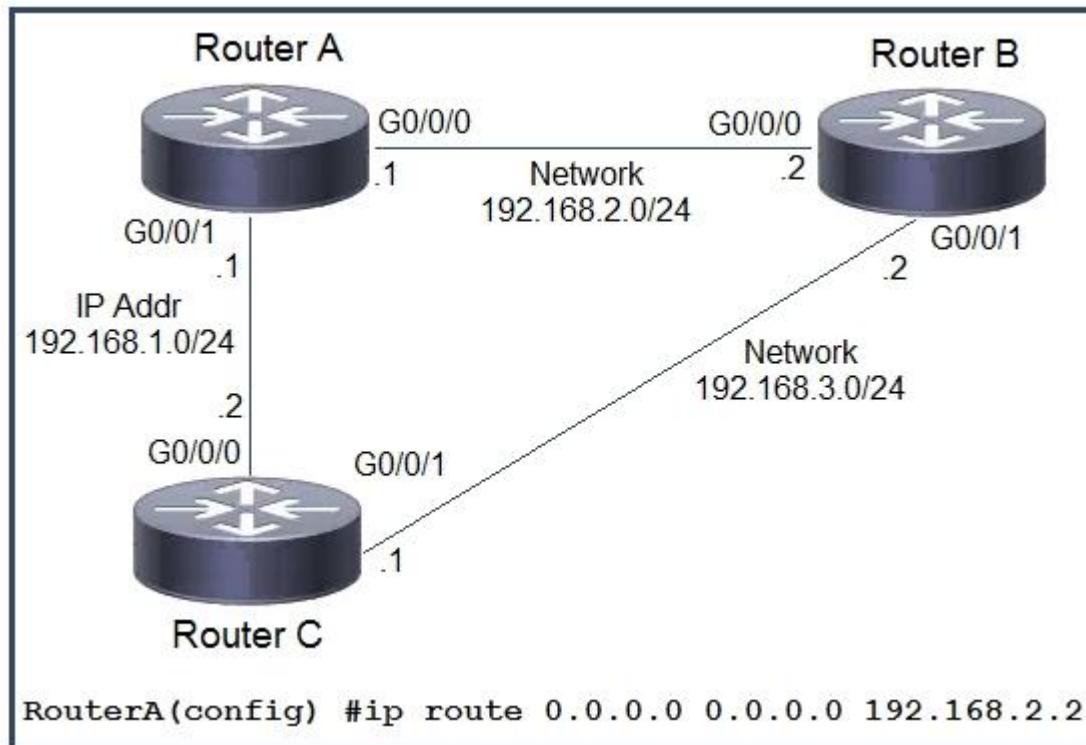
**Answer:** B

**Explanation:**

By specifying the outgoing interface and not the next hop IP address, the Management devices will be able to ping the new server, but not the default gateway of the server.

#### QUESTION 600

Refer to the exhibit. Which command must be issued to enable a floating static default route on router A?



- A. ip route 0.0.0.0 0.0.0.0 192.168.1.2
- B. ip default-gateway 192.168.2.1
- C. ip route 0.0.0.0 0.0.0.0 192.168.2.1 10
- D. ip route 0.0.0.0 0.0.0.0 192.168.1.2 10

**Answer:** D

**QUESTION 601**

Which protocol is used for secure remote CLI access?

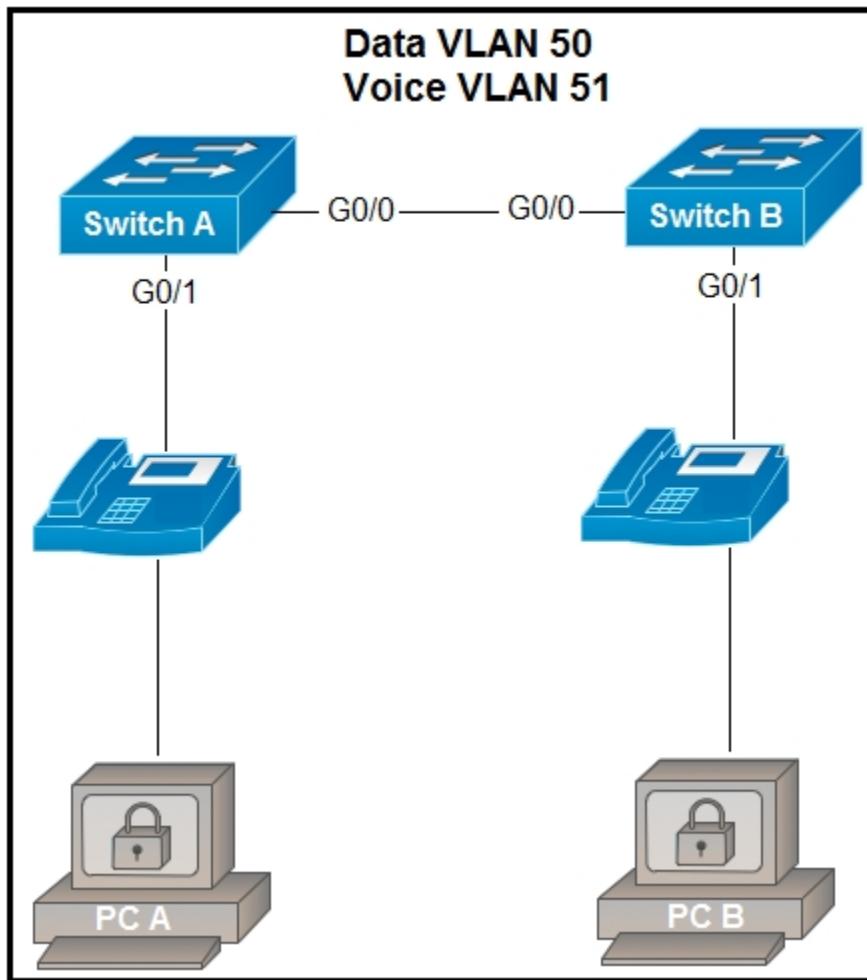
- A. HTTPS
- B. HTTP
- C. Telnet
- D. SSH

**Answer:** D

**QUESTION 602**

Refer to the exhibit. All VLANs are present in the VLAN database.

Which command sequence must be applied to complete the configuration?



- A. 

```
interface FastEthernet0/1
switchport trunk native vlan 10
switchport trunk allowed vlan 10,15
```
- B. 

```
interface FastEthernet0/1
switchport mode trunk
switchport trunk allowed vlan 10,15
```
- C. 

```
interface FastEthernet0/1
switchport mode access
switchport voice vlan 10
```

- D. Interface FastEthernet0/1  
switchport trunk allowed vlan add 10  
vlan 10  
private-vlan isolated

**Answer:** C

**QUESTION 603**

Refer to the exhibit. Which minimum configuration items are needed to enable Secure Shell version 2 access to R15?

```
Router#show run
Building configuration...

Current configuration : 1530 bytes
!
! Last configuration change at 11:32:53 UTC Sat Oct 10 2020
upgrade fpd auto
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Router
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
no ip icmp rate-limit unreachable
!
!
!
!--More--
```

- A. Router(config)#hostname R15  
R15(config)#crypto key generate rsa general-keys modulus 1024  
R15(config-line)#line vty 0 15  
R15(config-line)# transport input ssh  
R15(config)#ip ssh source-interface Fa0/0  
R15(config)#ip ssh stricthostkeycheck
- B. Router(config)#crypto key generate rsa general-keys modulus 1024  
Router(config)#ip ssh version 2  
Router(config-line)#line vty 0 15  
Router(config-line)# transport input ssh  
Router(config)#ip ssh logging events  
R15(config)#ip ssh stricthostkeycheck
- C. Router(config)#ip domain-name cisco.com  
Router(config)#crypto key generate rsa general-keys modulus 1024  
Router(config)#ip ssh version 2  
Router(config-line)#line vty 0 15  
Router(config-line)# transport input all  
Router(config)#ip ssh logging events
- D. Router(config)#hostname R15  
R15(config)#ip domain-name cisco.com  
R15(config)#crypto key generate rsa general-keys modulus 1024  
R15(config)#ip ssh version 2  
R15(config-line)#line vty 0 15  
R15(config-line)# transport input ssh

**Answer:** C

#### QUESTION 604

What is the purpose of the ip address dhcp command?

- A. to configure an Interface as a DHCP server
- B. to configure an interface as a DHCP helper
- C. to configure an interface as a DHCP relay
- D. to configure an interface as a DHCP client

**Answer:** D

**Explanation:**

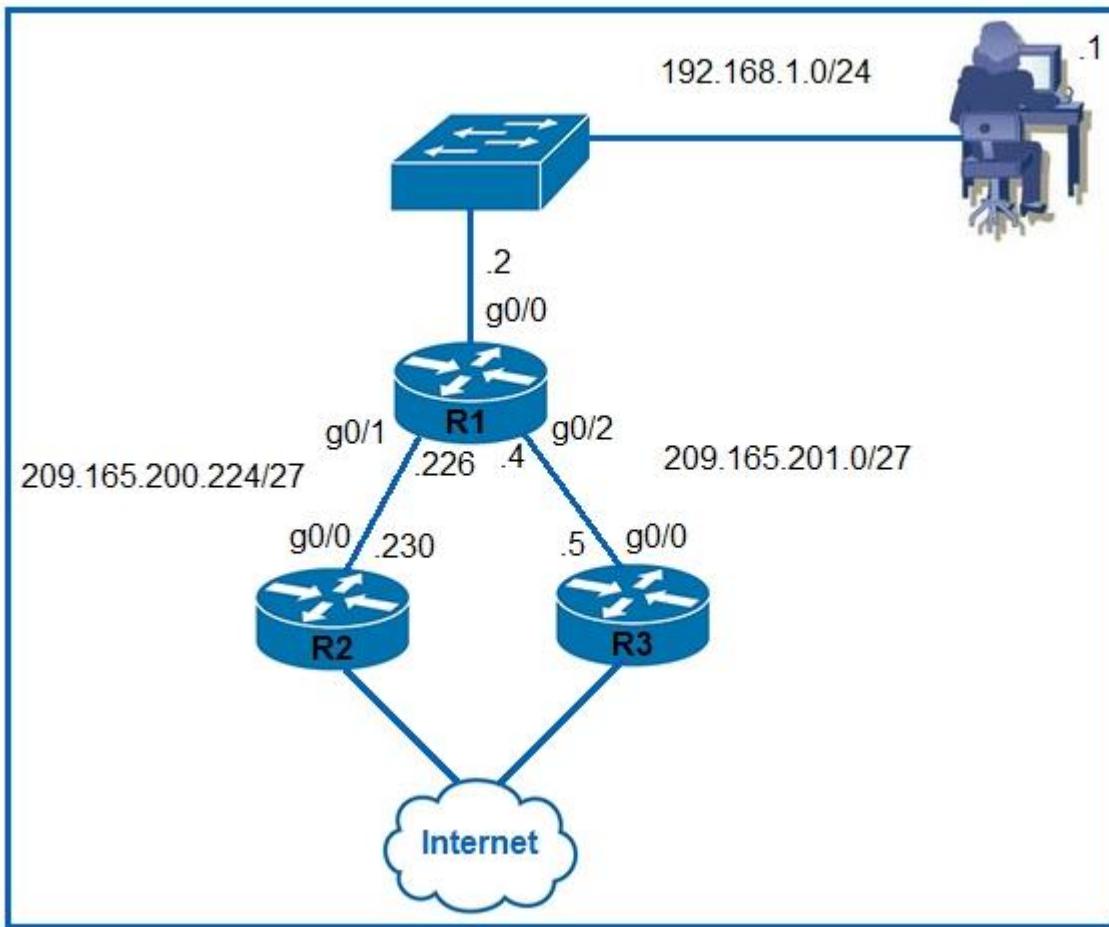
This command enables the DHCP client on the interface and removes all manually-configured addresses on the interface.

[https://www.cisco.com/c/en/us/td/docs/routers/nfvis/switch\\_command/b-nfvis-switch-command-reference/ip\\_addressing\\_commands.pdf](https://www.cisco.com/c/en/us/td/docs/routers/nfvis/switch_command/b-nfvis-switch-command-reference/ip_addressing_commands.pdf)

#### QUESTION 605

Refer to the exhibit. Router R1 currently is configured to use R3 as the primary route to the Internet, and the route uses the default administrative distance settings. A network engineer must configure R1 so that it uses R2 as a backup, but only if R3 goes down.

Which command must the engineer configure on R1 so that it correctly uses R2 as a backup route, without changing the administrative distance configuration on the link to R3?



- A. ip route 0.0.0.0 0.0.0.0 g0/1 1
- B. ip route 0.0.0.0 0.0.0.0 209.165.201.5 10
- C. ip route 0.0.0.0 0.0.0.0 209.165.200.226 1
- D. ip route 0.0.0.0 0.0.0.0 g0/1 6

**Answer:** D

#### QUESTION 606

Refer to the exhibit. Which configuration enables DHCP addressing for hosts connected to interface FastEthernet0/1 on router R4?

```
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname R4
!
boot-start-marker
boot-end-marker
!
ip cef
!
interface FastEthernet0/0
description WAN_INTERFACE
ip address 10.0.1.2 255.255.255.252
ip access-group 100 in
!
interface FastEthernet0/1
description LAN_INTERFACE
ip address 10.148.2.1 255.255.255.0
duplex auto
speed auto
!
ip forward-protocol nd
!
access-list 100 permit eigrp any any
access-list 100 permit icmp any any
access-list 100 permit tcp 10.149.3.0 0.0.0.255 host 10.0.1.2 eq 22
access-list 100 permit tcp any any eq 80
access-list 100 permit tcp any any eq 443
access-list 100 deny ip any any log
```

- A. interface FastEthernet0/0  
ip helper-address 10.0.1.1  
!  
access-list 100 permit udp host 10.0.1.1 eq bootps host 10.148.2.1
- B. interface FastEthernet0/1  
ip helper-address 10.0.1.1  
!  
access-list 100 permit tcp host 10.0.1.1 eq 67 host 10.148.2.1
- C. interface FastEthernet0/0  
ip helper-address 10.0.1.1  
!  
access-list 100 permit host 10.0.1.1 host 10.148.2.1 eq bootps
- D. interface FastEthernet0/1  
ip helper-address 10.0.1.1  
!  
access-list 100 permit udp host 10.0.1.1 eq bootps host 10.148.2.1

**Answer:** D

**Explanation:**

BOOTP is implemented using the User Datagram Protocol (UDP) for transport protocol, port number 67 is used by the (DHCP) server for receiving client-requests and port number 68 is used by the client for receiving (DHCP) server responses. BOOTP operates only on IPv4 networks.

**QUESTION 607**

OSPF must be configured between routers R1 and R2.

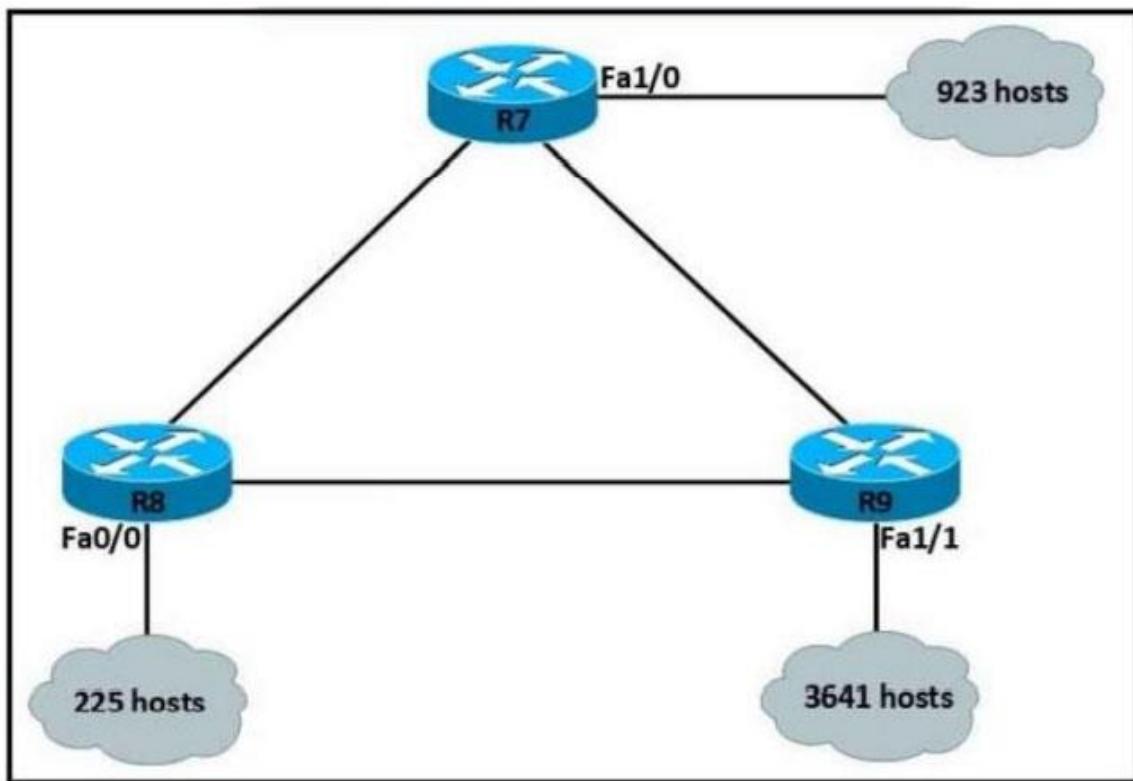
Which OSPF configuration must be applied to router R1 to avoid a DR/BDR election?

- A. router ospf 1  
network 192.168.1.1 0.0.0.0 area 0  
interface e1/1  
ip address 192.168.1.1 255.255.255.252  
ip ospf network broadcast
- B. router ospf 1  
network 192.168.1.1 0.0.0.0 area 0  
interface e1/1  
ip address 192.168.1.1 255.255.255.252  
ip ospf network point-to-point
- C. router ospf 1  
network 192.168.1.1 0.0.0.0 area 0  
interface e1/1  
ip address 192.168.1.1 255.255.255.252  
ip ospf cost 0
- D. router ospf 1  
network 192.168.1.1 0.0.0.0 area 0  
hello interval 15  
interface e1/1  
ip address 192.168.1.1 255.255.255.252

**Answer:** B

**QUESTION 608**

Refer to the exhibit. An IP subnet must be configured on each router that provides enough addresses for the number of assigned hosts and anticipates no more than 10% growth for new hosts. Which configuration script must be used?



A.

```
R7#
configure terminal
interface Fa1/0
ip address 10.1.56.1 255.255.192.0
no shutdown
R8#
configure terminal
interface Fa0/0
ip address 10.9.32.1 255.255.224.0
no shutdown
R9#
configure terminal
interface Fa1/1
ip address 10.23.96.1 255.255.128.0
no shutdown
```

B.

```
R7#
configure terminal
interface Fa1/0
ip address 10.1.56.1 255.255.240.0
no shutdown

R8#
configure terminal
interface Fa0/0
ip address 10.9.32.1 255.255.224.0
no shutdown

R9#
configure terminal
interface Fa1/1
ip address 10.23.96.1 255.255.192.0
no shutdown
```

C.

```
R7#
configure terminal
interface Fa1/0
ip address 10.1.56.1 255.255.252.0
no shutdown

R8#
configure terminal
interface Fa0/0
ip address 10.9.32.1 255.255.255.0
no shutdown

R9#
configure terminal
interface Fa1/1
ip address 10.23.96.1 255.255.240.0
no shutdown
```

D. R7#  
`configure terminal  
interface Fa1/0  
ip address 10.1.56.1 255.255.192.0  
no shutdown`  
R8#  
`configure terminal  
interface Fa0/0  
ip address 10.9.32.1 255.255.224.0  
no shutdown`  
R9#  
`configure terminal  
interface Fa1/1  
ip address 10.23.96.1 255.255.128.0  
no shutdown`

**Answer:** C

**Explanation:**

Can pinpoint this easily by only looking at R8:  
255.255.255.0 is enough = Answer is C

#### QUESTION 609

Which wireless security protocol relies on Perfect Forward Secrecy?

- A. WPA3
- B. WPA
- C. WEP
- D. WPA2

**Answer:** A

**Explanation:**

WPA3 (Wi-Fi Protected Access 3) is the newest wireless security protocol designed to encrypt data using a frequent and automatic encryption type called Perfect Forward Secrecy.

#### QUESTION 610

What is a function of an endpoint on a network?

- A. forwards traffic between VLANs on a network
- B. connects server and client devices to a network
- C. allows users to record data and transmit to a file server
- D. provides wireless services to users in a building

**Answer:** C

**Explanation:**

An endpoint is a remote computing device that communicates back and forth with a network to which it is connected. Examples of endpoints include:

- Desktops
- Laptops
- Smartphones
- Tablets
- Servers
- Workstations
- Internet-of-things (IoT) devices

### QUESTION 611

Refer to the exhibit. Packets received by the router from BGP enter via a serial interface at 209.165.201.10. Each route is present within the routing table.

Which interface is used to forward traffic with a destination IP of 10.10.10.24?

```
EIGRP 10.10.10.0/24 [90/1441] via F0/10
EIGRP 10.10.10.0/24 [90/144] via F0/11
EIGRP 10.10.10.0/24 [90/1441] via F0/12
OSPF 10.10.10.0/24 [110/20] via F0/13
OSPF 10.10.10.0/24 [110/30] via F0/14
```

- A. F0/10
- B. F0/11
- C. F0/12
- D. F0/13

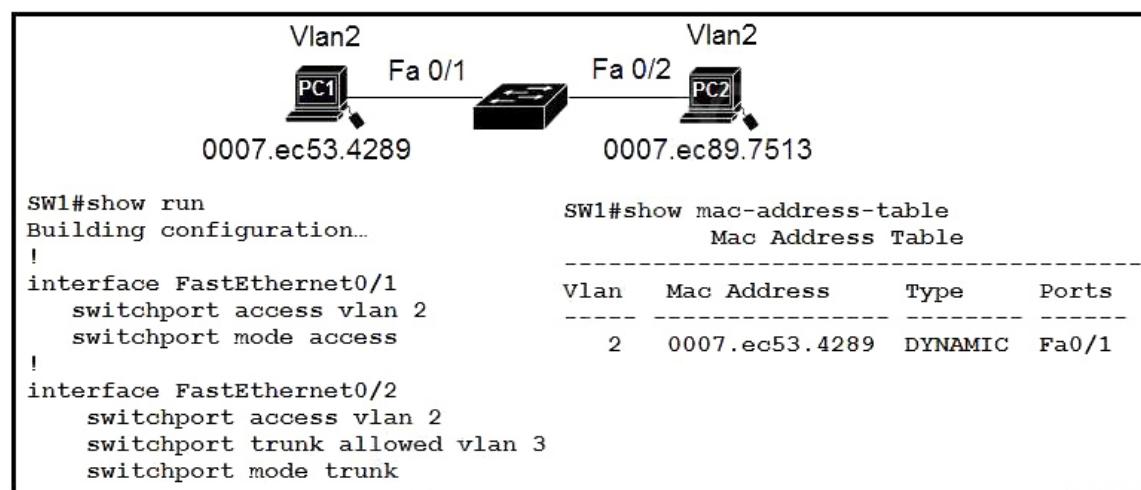
**Answer:** B

### QUESTION 612

Refer to the exhibit. An engineer has started to configure replacement switch SW1.

To verify part of the configuration, the engineer issued the commands as shown and noticed that the entry for PC2 is missing.

Which change must be applied to SW1 so that PC1 and PC2 communicate normally?



- A. SW1(config)#interface fa0/2  
SW1(config-if)#no switchport mode trunk  
SW1(config-if)#no switchport trunk allowed vlan 3  
SW1(config-if)#switchport mode access
- B. SW1(config)#interface fa0/2  
SW1(config-if)#no switchport access vlan 2  
SW1(config-if)#no switchport trunk allowed vlan 3  
SW1(config-if)#switchport trunk allowed vlan 2
- C. SW1(config)#interface fa0/2  
SW1(config-if)#no switchport access vlan 2  
SW1(config-if)#switchport trunk native vlan 2  
SW1(config-if)#switchport trunk allowed vlan 3
- D. SW1(config)#interface fa0/1  
SW1(config-if)#no switchport access vlan 2  
SW1(config-if)#switchport access vlan 3  
SW1(config-if)#switchport trunk allowed vlan 2

**Answer:** A

**Explanation:**

access port - a port that can be assigned to a single VLAN. This type of interface is configured on switch ports that are connected to end devices such as workstations, printers, or access points.  
 trunk port - a port that is connected to another switch. This type of interface can carry traffic of multiple VLANs, thus enabling you to extend VLANs across your entire network. Frames are tagged by assigning a VLAN ID to each frame as they traverse between switches.

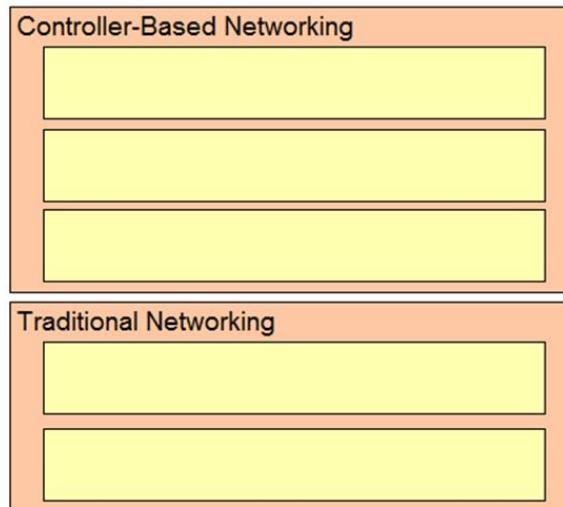
### QUESTION 613

Drag and Drop Question

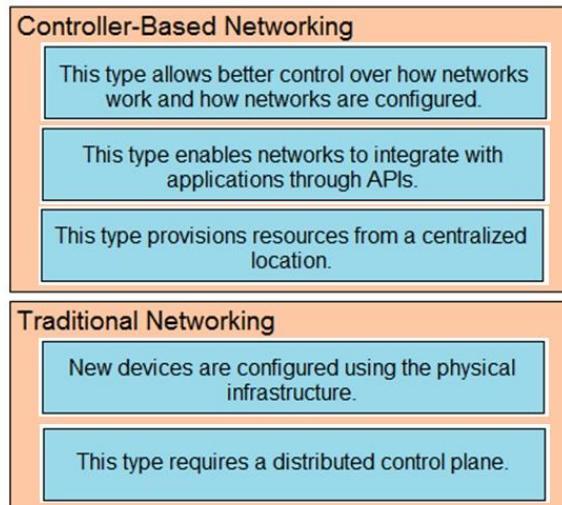
Drag and drop the statements about networking from the left onto the corresponding networking types on the right.

#### Answer Area

- This type allows better control over how networks work and how networks are configured.
- This type enables networks to integrate with applications through APIs.
- New devices are configured using the physical infrastructure.
- This type provisions resources from a centralized location.
- This type requires a distributed control plane.



**Answer:**

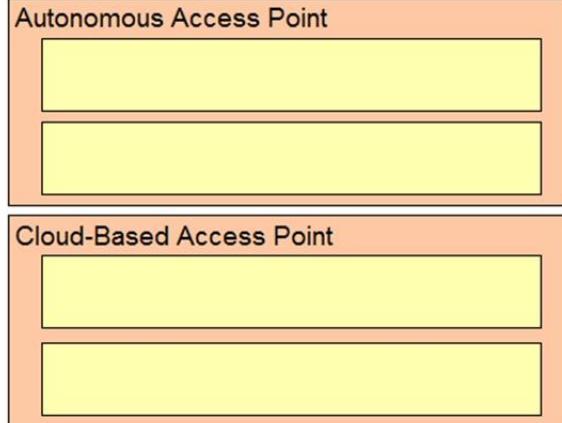
**Answer Area****QUESTION 614**

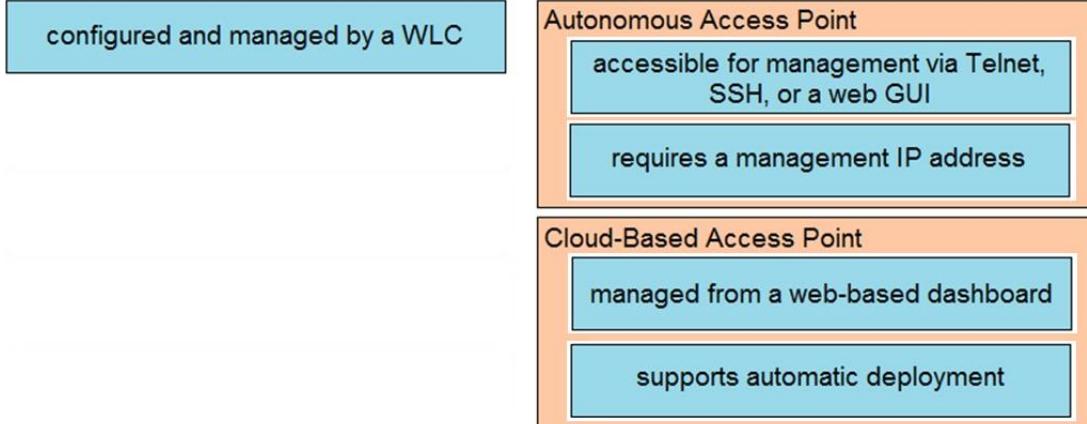
Drag and Drop Question

Drag and drop the facts about wireless architectures from the left onto the types of access point on the right. Not all options are used.

**Answer Area**

- configured and managed by a WLC
- managed from a web-based dashboard
- accessible for management via Telnet, SSH, or a web GUI
- requires a management IP address
- supports automatic deployment

**Answer:**

**Answer Area****QUESTION 615**

Drag and Drop Question

An engineer is tasked to configure a switch with port security to ensure devices that forward unicasts multicasts and broadcasts are unable to flood the port. The port must be configured to permit only two random MAC addresses at a time.

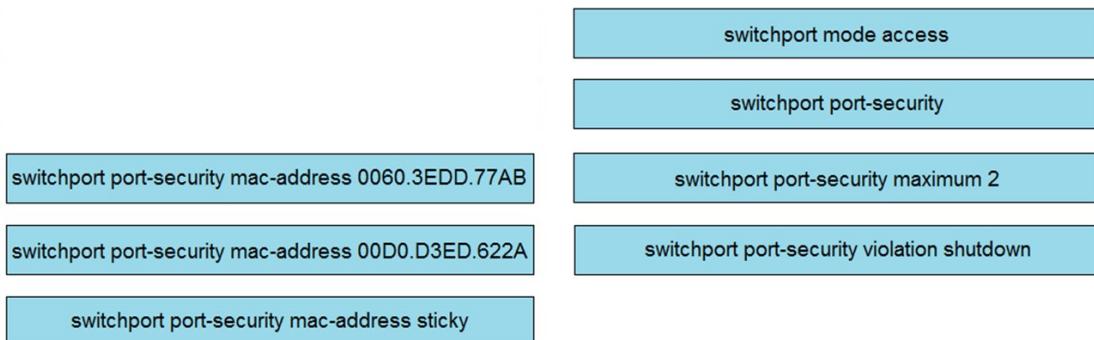
Drag and drop the required configuration commands from the left onto the sequence on the right.  
Not all commands are used.

**Answer Area**

|                                                     |   |
|-----------------------------------------------------|---|
| switchport mode access                              | 1 |
| switchport port-security                            | 2 |
| switchport port-security mac-address 0060.3EDD.77AB | 3 |
| switchport port-security mac-address 00D0.D3ED.622A | 4 |
| switchport port-security mac-address sticky         |   |
| switchport port-security maximum 2                  |   |
| switchport port-security violation shutdown         |   |

**Answer:**

**Answer Area**

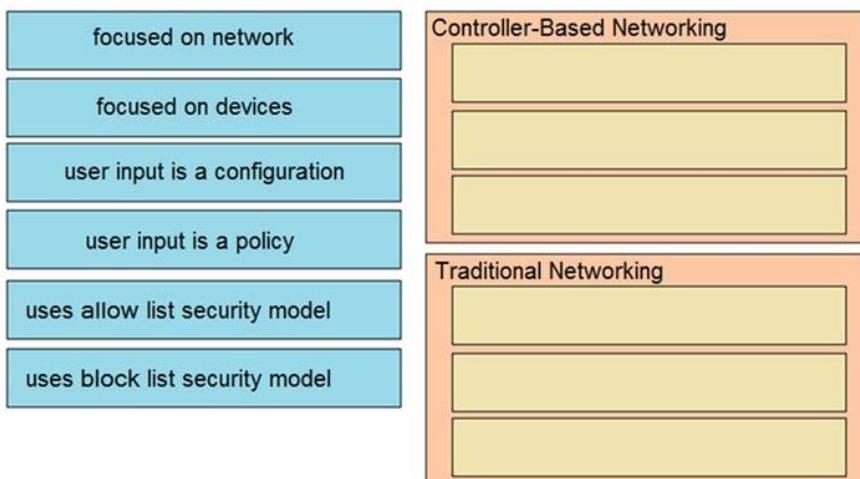


**QUESTION 616**

Drag and Drop Question

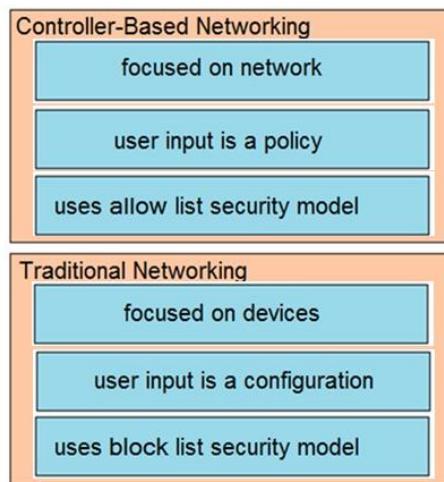
Drag and drop the characteristics of networking from the left onto the networking types on the right.

**Answer Area**



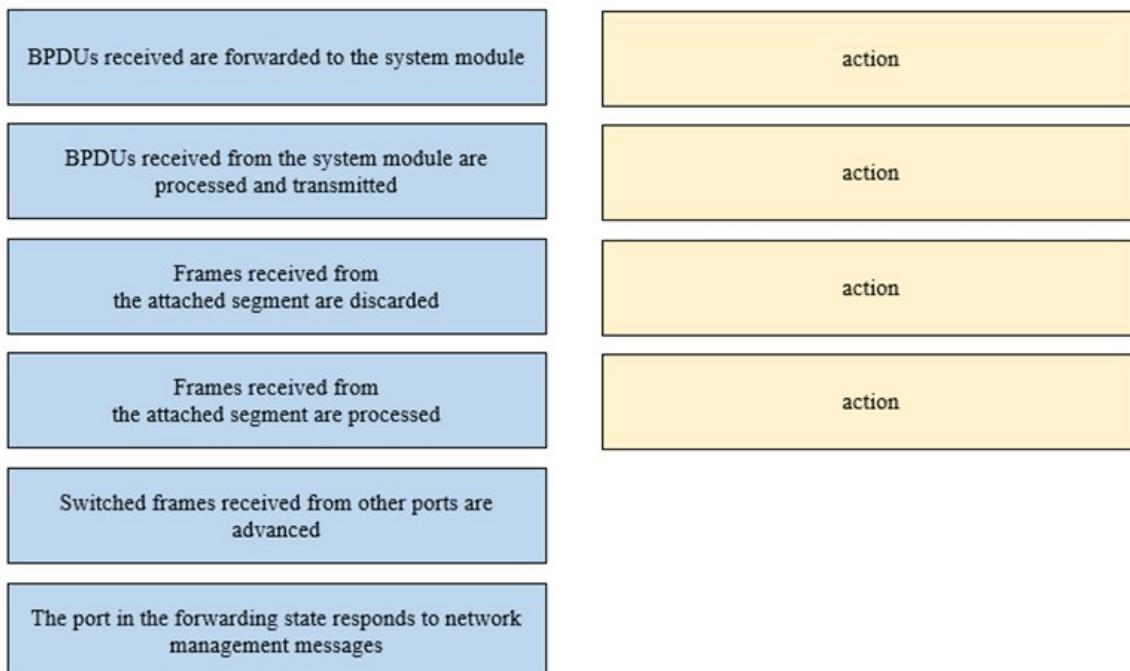
**Answer:**

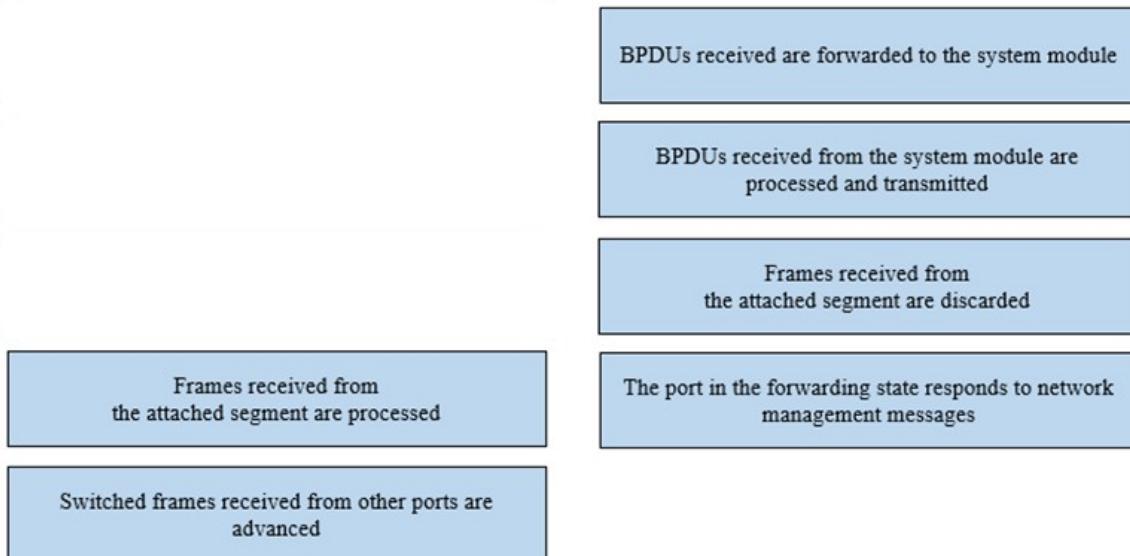
## Answer Area


**QUESTION 617**

Drag and Drop Question

Drag and drop the Rapid PVST+ forwarding slate actions from the left to the right. Not all actions are used.


**Answer:**



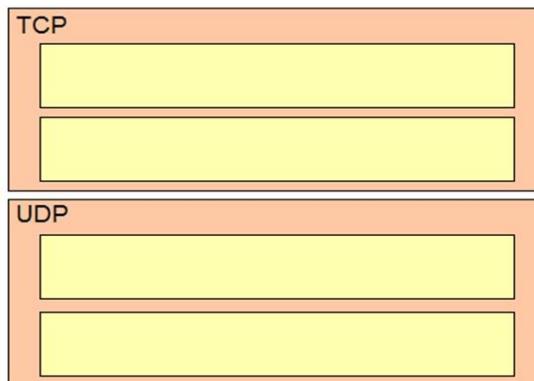
**QUESTION 618**

Drag and Drop Question

Drag and drop the TCP or UDP details from the left onto their corresponding protocols on the right.

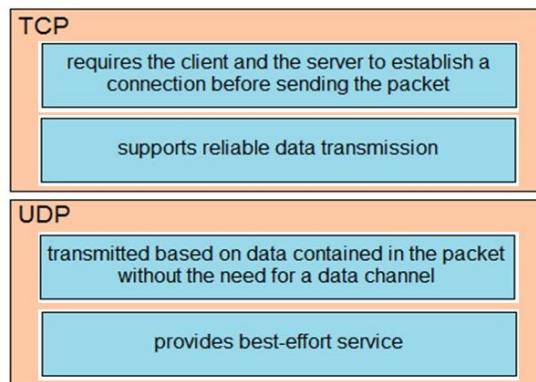
**Answer Area**

- transmitted based on data contained in the packet without the need for a data channel
- requires the client and the server to establish a connection before sending the packet
- provides best-effort service
- supports reliable data transmission



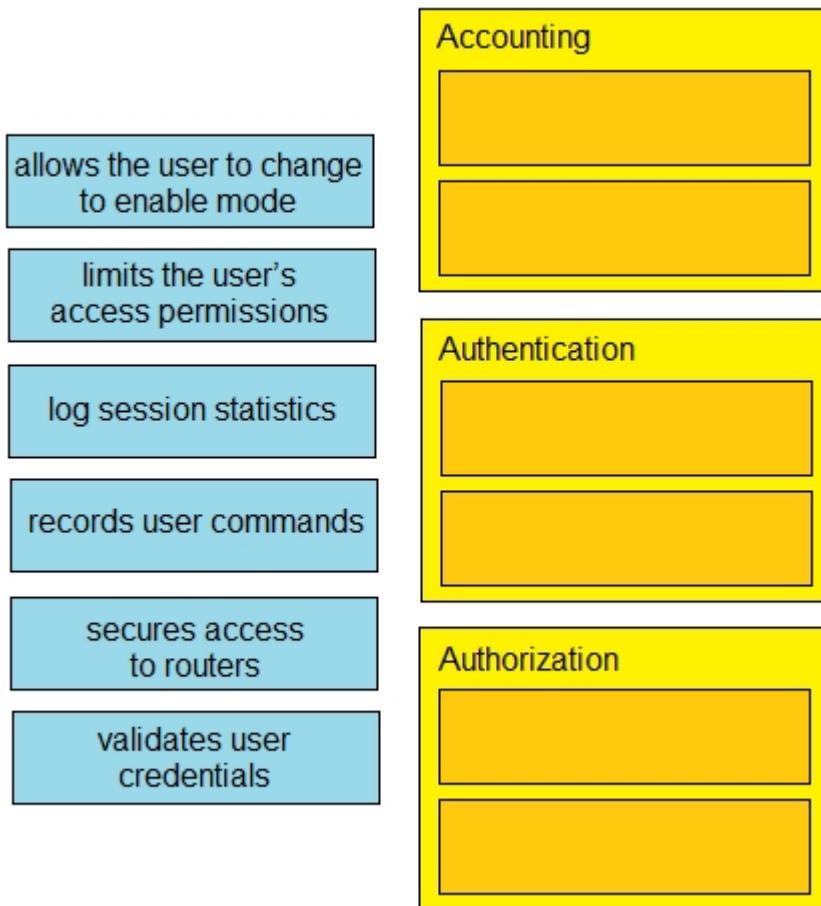
**Answer:**

## Answer Area

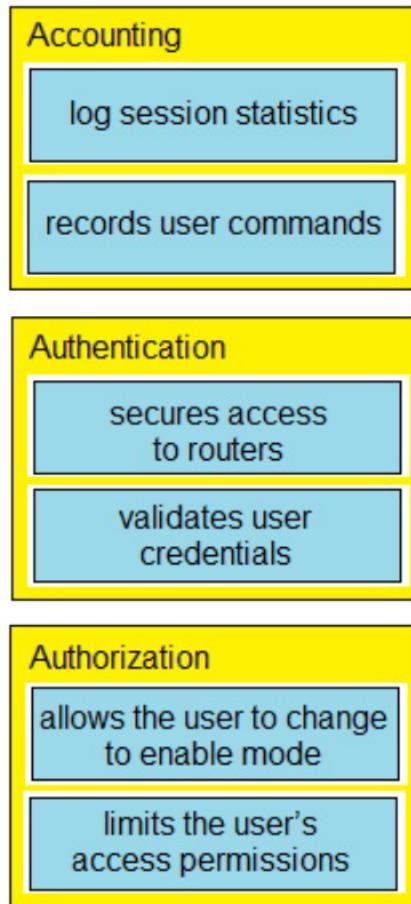
**QUESTION 619**

Drag and Drop Question

Drag and drop the descriptions of AAA services from the left onto the corresponding services on the right.



**Answer:**



**QUESTION 620**

What differentiates device management enabled by Cisco DNA Center from traditional campus device management?

- A. CLI-oriented device
- B. centralized
- C. device-by-device hands-on
- D. per-device

**Answer:** B

**Explanation:**

When using Cisco DNA Center to manage network device, device management is centralized and is managed from the DNA center GUI. Using DNA Center allows for us to have a more centralized management of network infrastructure as configuration changes can be applied to many devices at once when these changes are done through DNA Center.

**QUESTION 621**

Refer to the exhibit. What is represented beginning with line 1 and ending with line 5?

```
1 [
2 { "switch": "3750", "port": e2 },
3 { "router": "2951", "port": e20 }.
4 { "switch": "3750", "port": e23 },
5]
```

- A. object
- B. value
- C. key
- D. array

**Answer:** D

**Explanation:**

These are some of the characteristics of JSON:

It uses a hierarchical structure and contains nested values.

It uses braces {} to hold objects and square brackets [] hold arrays.

Its data is written as key/value pairs.

### QUESTION 622

Drag and Drop Question

Drag and drop the AAA features from the left onto the corresponding AAA security services on the right. Not all options are used.

#### Answer Area

- It enables the device to allow user- or group-based access.
- It leverages a RADIUS server to grant user access to a reverse Telnet session.
- It records the amount of time for which a user accesses the network on a remote server.
- It restricts the CLI commands that a user can perform.
- It uses TACACS+ to log the configuration commands entered by a network administrator.
- It verifies the user and password before granting access to the device.



**Answer:**

**Answer Area**

It leverages a RADIUS server to grant user access to a reverse Telnet session.

**Accounting**

It records the amount of time for which a user accesses the network on a remote server.

It uses TACACS+ to log the configuration commands entered by a network administrator.

**Authorization**

It enables the device to allow user- or group-based access.

It restricts the CLI commands that a user can perform.

It verifies the user and password before granting access to the device.

**QUESTION 623**

Refer to the exhibit. Clients on the WLAN are required to use 802.11r. What action must be taken to meet the requirement?

**Layer 2    Layer 3    AAA Servers**

Layer 2 Security [6](#) WPA+WPA2

MAC Filtering [9](#)

**Fast Transition**

Fast Transition

Over the DS

Reassociation Timeout 20 Seconds

**Protected Management Frame**

PMF

**WPA+WPA2 Parameters**

WPA Policy

WPA2 Policy

WPA2 Encryption  AES  TKIP  CCMP256  GCMP128  GCMP256

OSEN Policy

**Authentication Key Management [19](#)**

|              |                                            |
|--------------|--------------------------------------------|
| 802.1X       | <input checked="" type="checkbox"/> Enable |
| CCKM         | <input type="checkbox"/> Enable            |
| PSK          | <input type="checkbox"/> Enable            |
| FT 802.1X    | <input type="checkbox"/> Enable            |
| FT PSK       | <input type="checkbox"/> Enable            |
| SUITEB-1X    | <input type="checkbox"/> Enable            |
| SUITEB192-1X | <input type="checkbox"/> Enable            |

WPA gtk-randomize State  [14](#)

- Under Protected Management Frames, set the PMF option to Required.
- Enable CCKM under Authentication Key Management.
- Set the Fast Transition option and the WPA gtk-randomize State to disable.
- Set the Fast Transition option to Enable and enable FT 802.1X under Authentication Key Management.

**Answer:** D

#### QUESTION 624

Refer to the exhibit. What must be configured to enable 802.11w on the WLAN?

| General                                                                                                                                                                                                                                                                                                                                                      | Security | QoS         | Policy-Mapping | Advanced |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------|----------------|----------|
| Layer 2                                                                                                                                                                                                                                                                                                                                                      | Layer 3  | AAA Servers |                |          |
| <b>Layer 2 Security</b> <a href="#">6</a> <input type="button" value="WPA+WPA2"/>                                                                                                                                                                                                                                                                            |          |             |                |          |
| <b>Security Type</b> <input type="button" value="Enterprise"/>                                                                                                                                                                                                                                                                                               |          |             |                |          |
| <b>MAC Filtering</b> <a href="#">2</a> <input type="checkbox"/>                                                                                                                                                                                                                                                                                              |          |             |                |          |
| <b>WPA+WPA2 Parameters</b>                                                                                                                                                                                                                                                                                                                                   |          |             |                |          |
| <input type="checkbox"/> WPA Policy<br><input checked="" type="checkbox"/> WPA2 Policy<br><input checked="" type="checkbox"/> WPA2 Encryption <input type="checkbox"/> CCMP128(AES) <input type="checkbox"/> TKIP <input type="checkbox"/> CCMP256 <input type="checkbox"/> GCMP128 <input type="checkbox"/> GCMP256<br><input type="checkbox"/> OSEN Policy |          |             |                |          |
| <b>Fast Transition</b>                                                                                                                                                                                                                                                                                                                                       |          |             |                |          |
| <b>Fast Transition</b> <input type="button" value="Disable"/>                                                                                                                                                                                                                                                                                                |          |             |                |          |
| <b>Protected Management Frame</b>                                                                                                                                                                                                                                                                                                                            |          |             |                |          |
| <b>PMF</b> <input type="button" value="Disabled"/>                                                                                                                                                                                                                                                                                                           |          |             |                |          |
| <b>Authentication Key Management</b> <a href="#">19</a>                                                                                                                                                                                                                                                                                                      |          |             |                |          |
| <b>802.1X-SHA1</b> <input checked="" type="checkbox"/> Enable                                                                                                                                                                                                                                                                                                |          |             |                |          |

- A. Set Fast Transition to Enabled.
- B. Enable WPA Policy.
- C. Set PMF to Required.
- D. Enable MAC Filtering.

**Answer:** C

**Explanation:**

IEEE 802.11w is the Protected Management Frames standard.

#### QUESTION 625

Which service is missing when RADIUS is selected to provide management access to the WLC?

- A. authorization
- B. authentication
- C. accounting
- D. confidentiality

**Answer:** D

**Explanation:**

Remote Authentication Dial-In User Service (RADIUS) is a networking protocol that provides centralized authentication, authorization, and accounting (AAA) management for users who connect and use a network service.

With RADIUS only the password is encrypted while the other information such as username, accounting information, etc are not encrypted. Encryption is "the process of converting information or data into a code, especially to prevent unauthorized access". So since RADIUS only encrypts the passwords, there is no confidentiality.

#### QUESTION 626

## Drag and Drop Question

Drag and drop the IPv6 addresses from the left onto the corresponding address types on the right.

**Answer Area**

|                                      |                |
|--------------------------------------|----------------|
| 2001:db8:600d:cafe::123              | Global Unicast |
| fcba:926a:e8e:7a25:b1:c6d2:1a76:8fdc |                |
| fd6d:c83b:5cef:b6b2::1               | Unique Local   |
| 3ffe:e54d:620:a87a::f00d             |                |

**Answer:****Answer Area**

|                |                                      |
|----------------|--------------------------------------|
| Global Unicast | 2001:db8:600d:cafe::123              |
|                | 3ffe:e54d:620:a87a::f00d             |
| Unique Local   | fcba:926a:e8e:7a25:b1:c6d2:1a76:8fdc |
|                | fd6d:c83b:5cef:b6b2::1               |

**QUESTION 627**

Refer to the exhibit. When router R1 is sending traffic to IP address 10.56.192.1, which interface or next hop address does it use to route the packet?

```
R1# show ip route
Codes: L - local, 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, H - NHRP, l - LISP
 + - replicated route, % - next hop override

Gateway of last resort is 10.56.0.1 to network 0.0.0.0

S* 0.0.0.0/0 [1/0] via 10.56.0.1
 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 10.56.0.0/17 is directly connected, Vlan56
L 10.56.0.19/32 is directly connected, Vlan56
C 10.56.128.0/18 is directly connected, Vlan57
L 10.56.128.19/32 is directly connected, Vlan57
```

- A. 10.56.0.1
- B. 0.0.0.0/0
- C. Vlan57
- D. 10.56.128.19

**Answer:** A

#### QUESTION 628

Refer to the exhibit. Load-balanced traffic is coming in from the WAN destined to a host at 172.16.1.190. Which next-hop is used by the router to forward the request?

```
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 172.16.0.0/16 is directly connected, Loopback0
 172.16.0.0/16 is variably subnetted, 4 subnets, 2 masks
O 172.16.1.3/3 [110/100] via 192.168.7.40, 00:39:08, Serial0
C 172.16.1.0/24 is directly connected, Serial0
O 172.16.1.184/29 [110/5] via 192.168.7.35, 00:39:08, Serial0
O 172.16.3.0/24 [110/10] via 192.168.7.4, 00:39:08, Gigabit Ethernet 0/0
D 172.16.1.0/28 [90/10] via 192.168.7.7, 00:39:08, Gigabit Ethernet 0/0
```

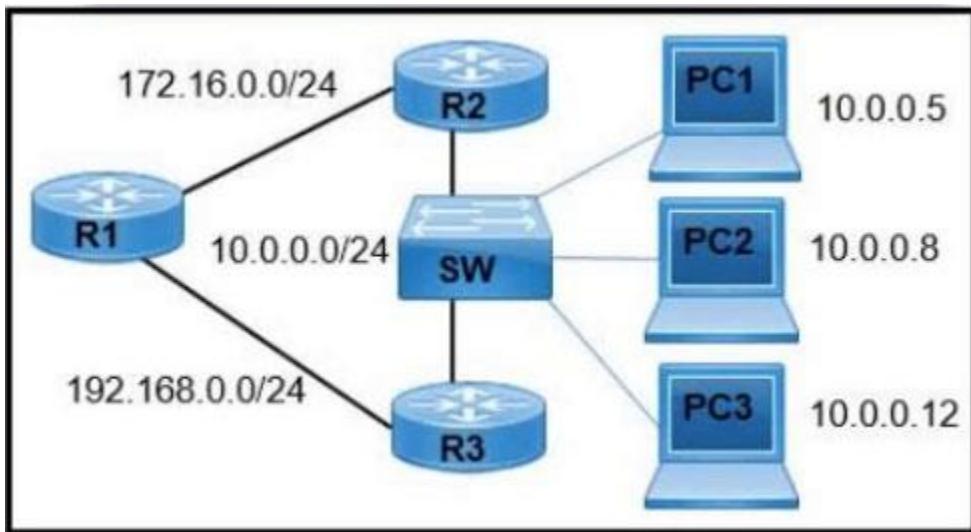
- A. 192.168.7.4
- B. 192.168.7.7
- C. 192.168.7.35
- D. 192.168.7.40

**Answer:** C

#### QUESTION 629

Refer to the exhibit. A network engineer must configure R1 so that it sends all packets destined to the 10.0.0.0/24 network to R3, and all packets destined to PC1 to R2. Which configuration must

the engineer implement?



- A. R1(config)#ip route 10.0.0.0 255.255.255.0 172.16.0.2  
R1(config)#ip route 10.0.0.5 255.255.255.255 192.168.0.2
- B. R1(config)#ip route 10.0.0.0 255.255.0.0 172.16.0.2  
R1(config)#ip route 10.0.0.5 255.255.255.255 192.168.0.2
- C. R1(config)#ip route 10.0.0.0 255.255.255.0 192.168.0.2  
R1(config)#ip route 10.0.0.5 255.255.255.255 172.16.0.2
- D. R1(config)#ip route 10.0.0.0 255.255.0.0 192.168.0.2  
R1(config)#ip route 10.0.0.5 255.255.255.0 172.16.0.2

**Answer:** C

#### QUESTION 630

Which command must be entered to configure a DHCP relay?

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

**Answer:** D

#### QUESTION 631

What is a zero-day exploit?

- A. It is when a new network vulnerability is discovered before a fix is available
- B. It is when the perpetrator inserts itself in a conversation between two parties and captures or alters data.
- C. It is when the network is saturated with malicious traffic that overloads resources and bandwidth
- D. It is when an attacker inserts malicious code into a SQL server.

**Answer:** A

**QUESTION 632**

A network engineer is replacing the switches that belong to a managed-services client with new Cisco Catalyst switches. The new switches will be configured for updated security standards including replacing.

Telnet services with encrypted connections and doubling the modulus size from 1024. Which two commands must the engineer configure on the new switches? (Choose two.)

- A. crypto key generate rsa general-keys modulus 1024
- B. transport input all
- C. crypto key generate rsa usage-keys
- D. crypto key generate rsa modulus 2048
- E. transport input ssh

**Answer:** DE

**QUESTION 633**

Which QoS queuing method discards or marks packets that exceed the desired bit rate of traffic flow?

- A. shaping
- B. policing
- C. CBWFQ
- D. LLQ

**Answer:** B

**Explanation:**

Use the police command to mark a packet with different quality of service (QoS) values based on conformance to the service-level agreement. Traffic policing allows you to control the maximum rate of traffic transmitted or received on an interface.

Reference:

[https://www.cisco.com/c/en/us/td/docs/ios/qos/configuration/guide/12\\_2sr/qos\\_12\\_2sr\\_book/traffic\\_policing.html](https://www.cisco.com/c/en/us/td/docs/ios/qos/configuration/guide/12_2sr/qos_12_2sr_book/traffic_policing.html)

**QUESTION 634**

What is the role of disaggregation in controller-based networking?

- A. It divides the control-plane and data-plane functions.
- B. It summarizes the routes between the core and distribution layers of the network topology.
- C. It enables a network topology to quickly adjust from a ring network to a star network
- D. It streamlines traffic handling by assigning individual devices to perform either Layer 2 or Layer 3 functions.

**Answer:** A

**QUESTION 635**

Refer to the exhibit. What is the next hop for traffic entering R1 with a destination of 10.1.2.126?

```
R1# show ip route
Codes: L - local, 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, E - EGP
 i - IS-IS, 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 not set
 10.0.0.0/24 is subnetted, 5 subnets
D 10.1.2.0/24 [90/2170112] via 10.165.20.226, 00:01:30, Serial0/0
D 10.1.3.0/24 [90/2170112] via 10.165.20.226, 00:01:30, Serial0/0
D 10.1.2.0/25 [90/2170112] via 10.165.20.126, 00:01:30, Serial0/0
D 10.1.3.0/25 [90/2170112] via 10.165.20.146, 00:01:30, Serial0/0
D 10.1.4.0/24 [90/2170112] via 10.165.20.156, 00:01:30, Serial0/0
 192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.18.10.0/24 is directly connected, GigabitEthernet0/0
 192.168.21.0/24 is variably subnetted, 2 subnets, 2 masks
C 192.18.11.0/24 is directly connected, GigabitEthernet0/1
 10.165.20.0/24 is variably subnetted, 2 subnets, 2 masks
C 10.165.20.224/24 is directly connected, Serial0/0
S 10.1.12.112/28 [1/0] via 10.165.20.166
```

- A. 10.165.20.126
- B. 10.165.20.146
- C. 10.165.20.166
- D. 10.165.20.226

**Answer:** A

#### QUESTION 636

Refer to the exhibit. The given Windows PC is requesting the IP address of the host at [www.cisco.com](http://www.cisco.com). To which IP address is the request sent?

```
C:\Users\ciscoadmin>ipconfig /all

Windows IP Configuration
 Host Name.....: DESKTOP-480J88T
 Primary Dns Suffix.:
 Node Type.....: Hybrid
 IP Routing Enabled....: No
 WINS Proxy Enabled....: No
 DNS Suffix Search List....: arcep.se

Ethernet adapter Ethernet:
 Media State.....: Media disconnected
 Connection-specific DNS Suffix :
 Description.....: Realtek PCIe GBE Family Controller
 Physical Address.....: 3C-52-82-33-F3-BF
 DHCP Enabled.....: Yes
 Autoconfiguration Enabled.....: Yes

Wireless LAN adapter Wi-Fi
 Connection-specific DNS Suffix : arcep.se
 Description.....: Intel (R) Dual Band
Wireless-AC 7265
 Physical Address.....: C8-21-58-B4-F3-EF
 DHCP Enabled.....: Yes
 Autoconfiguration Enabled.....: Yes
 Link-local IPv6 Address.....: fe80::45a1:b3fa:2f37:bf37%2 (Preferred)
 IPv4 Address.....: 192.168.1.226 (Preferred)
 Subnet Mask.....: 255.255.255.0
 Lease Obtained.....: October 3, 2019 12:28:08 PM
 Lease Expires.....: October 3, 2019 7:18:37 PM
 Default Gateway.....: 192.168.1.100
 DHCP Server.....: 192.168.1.254
 DHCPv6 IAID.....: 46670168
 DHCPv6 Client DUID.....: 00-01-00-01-20-FF-05-55-3C-52-82-33-D3-84
 DNS Servers.....: 192.168.1.253
 NetBIOS over Tcpip.....: Enabled
 Connection-specific DNS Suffix Search List :
 arcep.se
```

- A. 192.168.1.226
- B. 192.168.1.100
- C. 192.168.1.254
- D. 192.168.1.253

**Answer:** D

**Explanation:**

Send for DNS serve, because url should be translate to IP address.

### QUESTION 637

Why would VRRP be implemented when configuring a new subnet in a multivendor environment?

- A. when a gateway protocol is required that support more than two Cisco devices for redundancy
- B. to enable normal operations to continue after a member failure without requiring a change in a host ARP cache
- C. to ensure that the spanning-tree forwarding path to the gateway is loop-free
- D. to interoperate normally with all vendors and provide additional security features for Cisco devices

**Answer:** B

**Explanation:**

VRRP does not provide additional security features for Cisco devices.

When VRRP is implemented the virtual mac-address of the VRRP group remains the same so the host does not need to make an arp request to learn another mac-address for the gateway.

**QUESTION 638**

An engineer has configured the domain name, user name, and password on the local router. What is the next step to complete the configuration for a Secure Shell access RSA key?

- A. crypto key Import rsa pem
- B. crypto key pubkey-chain rsa
- C. crypto key generate rsa
- D. crypto key zeroize rsa

**Answer:** C

**QUESTION 639**

An engineer is configuring SSH version 2 exclusively on the R1 router.

What is the minimum configuration required to permit remote management using the cryptographic protocol?

- A. 

```
hostname R1
service password-encryption
crypto key generate rsa general-keys modulus 1024
username cisco privilege 15 password 0 cisco123
ip ssh version 2
line vty 0 15
transport input ssh
login local
```
- B. 

```
hostname R1
ip domain name cisco
crypto key generate rsa general-keys modulus 1024
username cisco privilege 15 password 0 cisco123
ip ssh version 2
line vty 0 15
transport input ssh
login local
```
- C. 

```
hostname R1
crypto key generate rsa general-keys modulus 1024
username cisco privilege 15 password 0 cisco123
ip ssh version 2
line vty 0 15
transport input ssh
login local
```
- D. 

```
hostname R1
ip domain name cisco
crypto key generate rsa general-keys modulus 1024
username cisco privilege 15 password 0 cisco123
ip ssh version 2
line vty 0 15
transport input all
login local
```

**Answer:** B

**QUESTION 640**

After a recent security breach and a RADIUS failure, an engineer must secure the console port of each enterprise router with a local username and password.

Which configuration must the engineer apply to accomplish this task?

- A. **aaa new-model**  
**line con 0**  
**password plaintextpassword**  
**privilege level 15**
- B. **aaa new-model**  
**aaa authorization exec default local**  
**aaa authentication login default radius**  
**username localuser privilege 15 secret plaintextpassword**
- C. **username localuser secret plaintextpassword**  
**line con 0**  
**no login local**  
**privilege level 15**
- D. **username localuser secret plaintextpassword**  
**line con 0**  
**login authentication default**  
**privilege level 15**

**Answer:** D

**QUESTION 641**

Which REST method updates an object in the Cisco DNA Center Intent API?

- A. CHANGE
- B. UPDATE
- C. POST
- D. PUT

**Answer:** D

**QUESTION 642**

Which two practices are recommended for an acceptable security posture in a network? (Choose two)

- A. Backup device configurations to encrypted USB drives for secure retrieval
- B. Maintain network equipment in a secure location
- C. Use a cryptographic keychain to authenticate to network devices
- D. Place internal email and file servers in a designated DMZ
- E. Disable unused or unnecessary ports, interfaces and services

**Answer:** BE

**QUESTION 643**

An administrator must use the password complexity not manufacturer-name command to prevent

users from adding "cisco" as a password. Which command must be issued before this command?

- A. Password complexity enable
- B. confreg 0x2142
- C. Login authentication my-auth-list
- D. service password-encryption

**Answer:** A

**QUESTION 644**

An engineer is configuring router R1 with an IPv6 static route for prefix 2019:C15C:0CAF:E001::/64.

The next hop must be 2019:C15C:0CAF:E002::1. The route must be reachable via the R1 Gigabit 0/0 interface.

Which command configures the designated route?

- A. R1(config)#ipv6 route 2019:C15C:0CAF:E001::/64 2019:C15C:0CAF:E002::1
- B. R1(config-if)#ipv6 route 2019:C15C:0CAF:E001::/64 2019:C15C:0CAF:E002::1
- C. R1(config-if)#ip route 2019:C15C:0CAF:E001::/64 GigabitEthernet0/0
- D. R1(config)#ip route 2019:C15C:0CAF:E001::/64 GigabitEthernet0/0

**Answer:** A

**QUESTION 645**

Drag and Drop Question

Drag and drop the QoS terms from the left onto the descriptions on the right.

|                                    |                                                                                         |
|------------------------------------|-----------------------------------------------------------------------------------------|
| cloud-based weighted fair queueing | categorizes packets based on the value of a traffic descriptor                          |
| classification                     | guarantees minimum bandwidth to specific traffic classes when an interface is congested |
| congestion                         | prevents congestion by reducing the flow of outbound traffic                            |
| policing                           | outcome of overutilization                                                              |
| shaping                            | uses defined criteria to limit the transmission of one or more classes of traffic       |

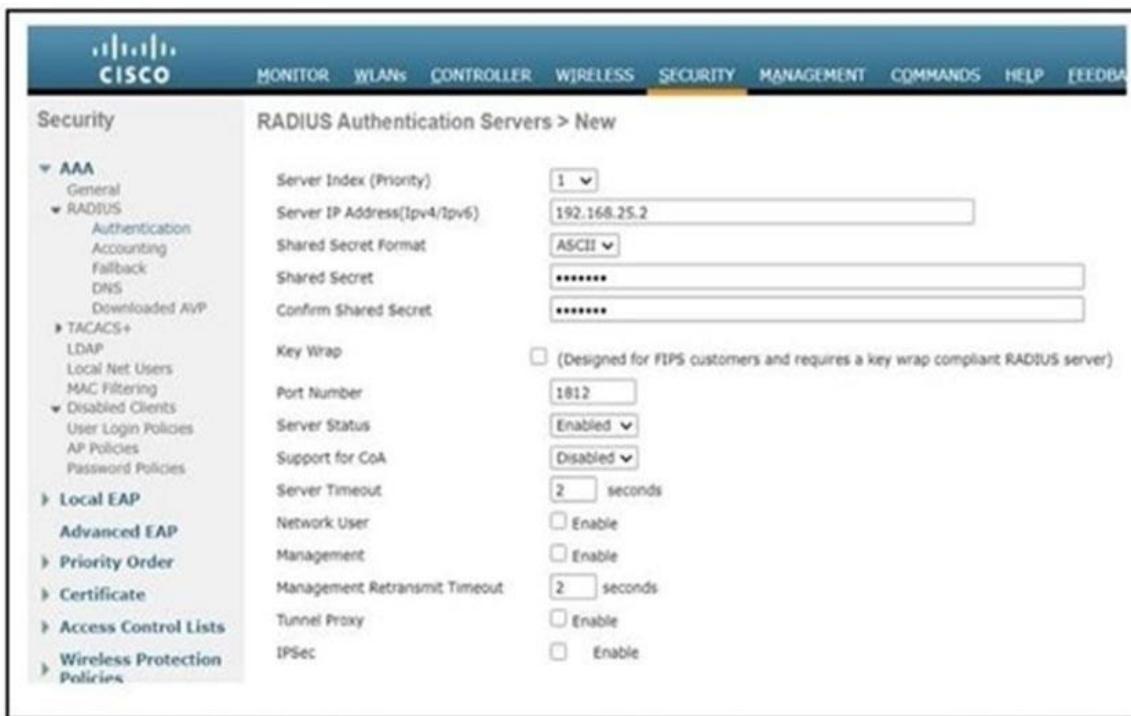
**Answer:**

|                                    |
|------------------------------------|
| classification                     |
| cloud-based weighted fair queueing |
| policing                           |
| congestion                         |
| shaping                            |

**QUESTION 646**

Refer to the exhibit. A network engineer configures the Cisco WLC to authenticate local wireless clients against a RADIUS server.

Which task must be performed to complete the process?



The screenshot shows the Cisco Wireless Local Controller (WLC) interface. The top navigation bar includes MONITOR, WLANs, CONTROLLER, WIRELESS, SECURITY, MANAGEMENT, COMMANDS, HELP, and FEEDBACK. The MANAGEMENT tab is selected. On the left, a sidebar menu under the Security section lists AAA (General, RADIUS, TACACS+), Local EAP (Advanced EAP), Priority Order, Certificate, Access Control Lists, and Wireless Protection Policies. The RADIUS Authentication Servers > New page is displayed on the right. It contains fields for Server Index (Priority: 1), Server IP Address (192.168.25.2), Shared Secret Format (ASCII), Shared Secret (\*\*\*\*\*), Confirm Shared Secret (\*\*\*\*\*), Key Wrap (unchecked), Port Number (1812), Server Status (Enabled), Support for CoA (Disabled), Server Timeout (2 seconds), Network User (Enable checked), Management (Enable checked), Management Retransmit Timeout (2 seconds), Tunnel Proxy (Enable checked), and IPSec (Enable checked).

- A. Change the Server Status to Disabled
- B. Select Enable next to Management
- C. Select Enable next to Network User
- D. Change the Support for CoA to Enabled.

**Answer:** C

**Explanation:**

Network users is for authenticating the people connected to the wireless network.  
Management is for authentication people who try to login to the WLC.

**QUESTION 647**

What is a function of Cisco Advanced Malware Protection for a Next-Generation IPS?

- A. authorizing potentially compromised wireless traffic
- B. inspecting specific files and file types for malware
- C. authenticating end users
- D. URL filtering

**Answer:** B

**QUESTION 648**

Refer to the exhibit. How many JSON objects are represented?

```
{
 "SW1" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"],
 "SW2" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"],
 "SW3" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"],
 "SW4" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"]
}
```

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

**Answer:** A

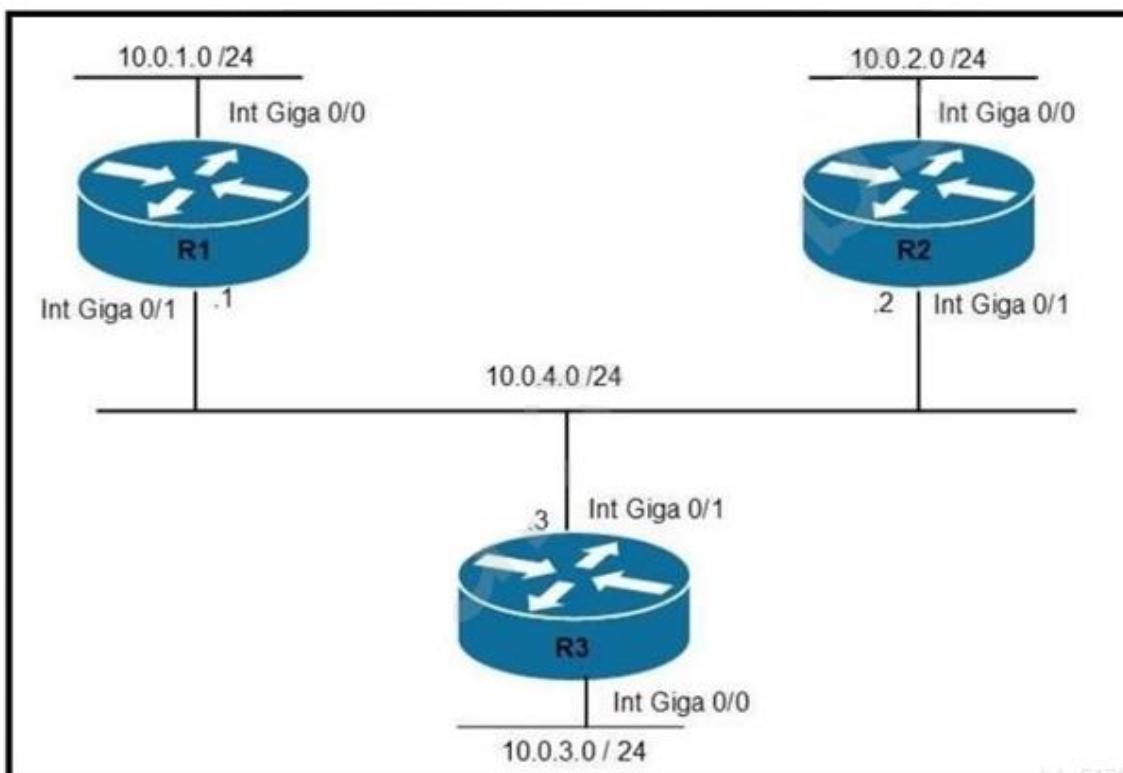
**Explanation:**

By definition a object structure is {}.

#### QUESTION 649

Refer to the exhibit. Router R1 must be configured to reach the 10.0.3.0/24 network from the 10.0.1.0/24 segment.

Which command must be used to configure the route?



- A. ip route 10.0.3.0 0.255.255.255 10.0.4.2

- B. route add 10.0.3.0 mask 255.255.255.0 10.0.4.3
- C. ip route 10.0.3.0 255.255.255.0 10.0.4.3
- D. route add 10.0.3.0 0.255.255.255 10.0.4.2

**Answer:** C

**QUESTION 650**

Refer to the exhibit. The administrator must configure a floating static default route that points to 2001:db8:1234:2::1 and replaces the current default route only if it fails. Which command must the engineer configure on the CPE?

```
CPE# show ipv6 route
IPv6 Routing Table - default - 6 entries
Codes: C - Connected, L - Local, S - Static, U - Per-user Static route
 B - BGP, R - RIP, H - NHRP, I1 - ISIS L1
 I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary, D - EIGRP
 EX - EIGRP external, ND - ND Default, NDp - ND Prefix, DCE - Destination
 NDr - Redirect, O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext 1
 OE2 - OSPF ext 2, ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
 la - LISP alt, lr - LISP site-registrations, ld - LISP dyn-eid
 1A - LISP away, le - LISP extranet-policy, lp - LISP publications
ND ::/0 [2/0]
 via FE80::A8BB:CCFF:FE00:200, Ethernet0/0
NDp 2001:DB8:1234:1::/64 [2/0]
 via Ethernet0/0, directly connected
L 2001:DB8:1234:1:A8BB:CCFF:FE00:100/128 [0/0]
 via Ethernet0/0, receive
C 2001:DB8:1234:2::/64 [0/0]
 via Ethernet0/1, directly connected
L 2001:DB8:1234:2:A8BB:CCFF:FE00:110/128 [0/0]
 via Ethernet0/1, receive
L FF00::/8 [0/0]
 via Null0, receive
```

- A. ipv6 route ::/0 2001:db8:1234:2::1 3
- B. ipv6 route ::/128 2001:db8:1234:2::1 3
- C. ipv6 route ::/0 2001:db8:1234:2::1 1
- D. ipv6 route ::/0 2001:db8:1234:2::1 2

**Answer:** B

**QUESTION 651**

What is the function of "off-the-shell" switches in a controller-based network?

- A. providing a central view of the deployed network
- B. forwarding packets
- C. making routing decisions
- D. setting packet-handling policies

**Answer:** B

**QUESTION 652**

Which command entered on a switch configured with Rapid PVST+ listens and learns for a specific time period?

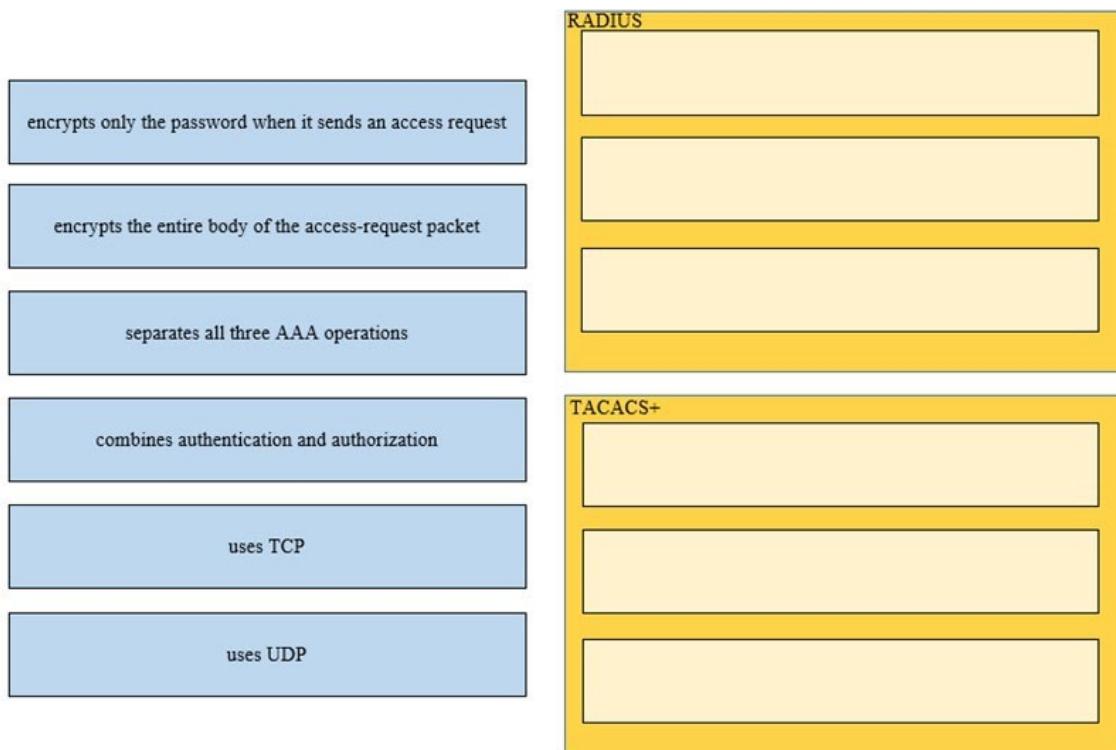
- A. switch(config)#spanning-tree vlan 1 max-age 6
- B. switch(config)#spanning-tree vlan 1 hello-time 10
- C. switch(config)#spanning-tree vlan 1 priority 4096
- D. switch(config)#spanning-tree vlan 1 forward-time 20

**Answer:** D

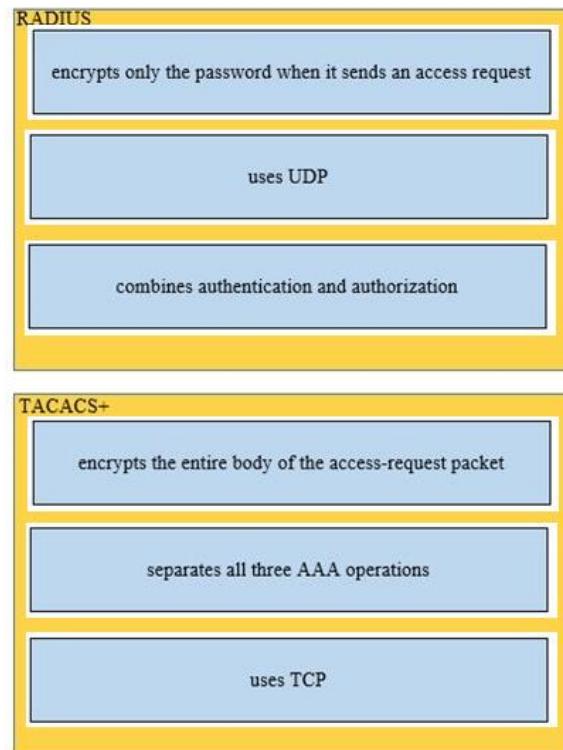
**QUESTION 653**

Drag and Drop Question

Drag and drop the functions of AAA supporting protocols from the left onto the protocols on the right.



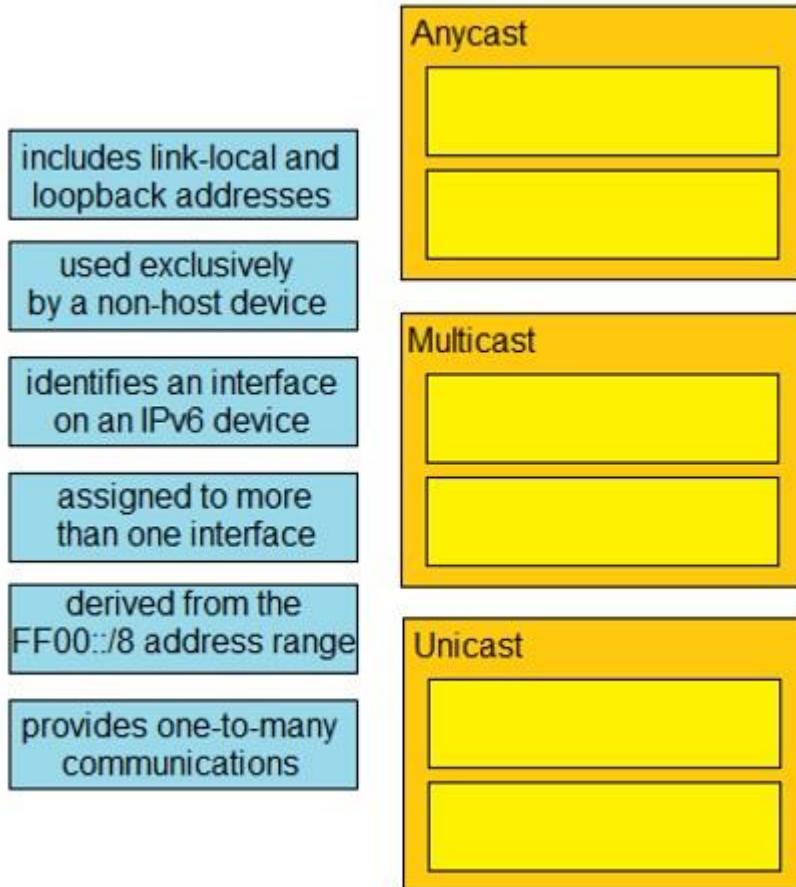
**Answer:**



**QUESTION 654**

Drag and Drop Question

Drag and drop the IPv6 address details from the left onto the corresponding types on the right.



**Answer:**

Anycast

used exclusively  
by a non-host device

assigned to more  
than one interface

Multicast

derived from the  
FF00::/8 address range

provides one-to-many  
communications

Unicast

includes link-local and  
loopback addresses

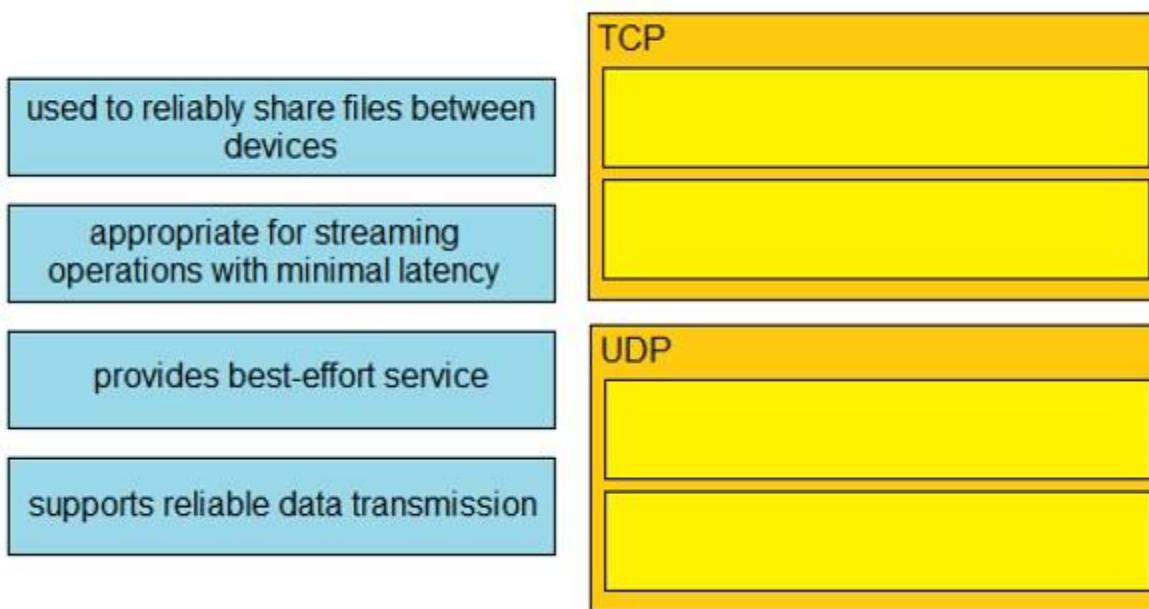
identifies an interface  
on an IPv6 device

**QUESTION 655**

Drag and Drop Question

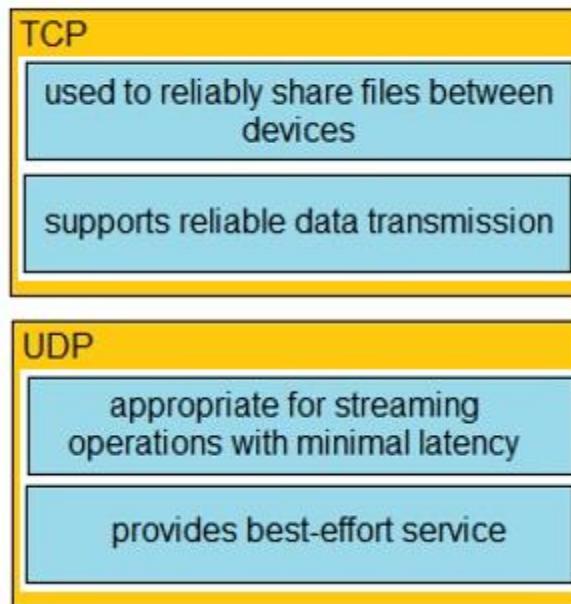
Drag and drop the TCP or UDP details from the left onto their corresponding protocols on the right.

## Answer Area



Answer:

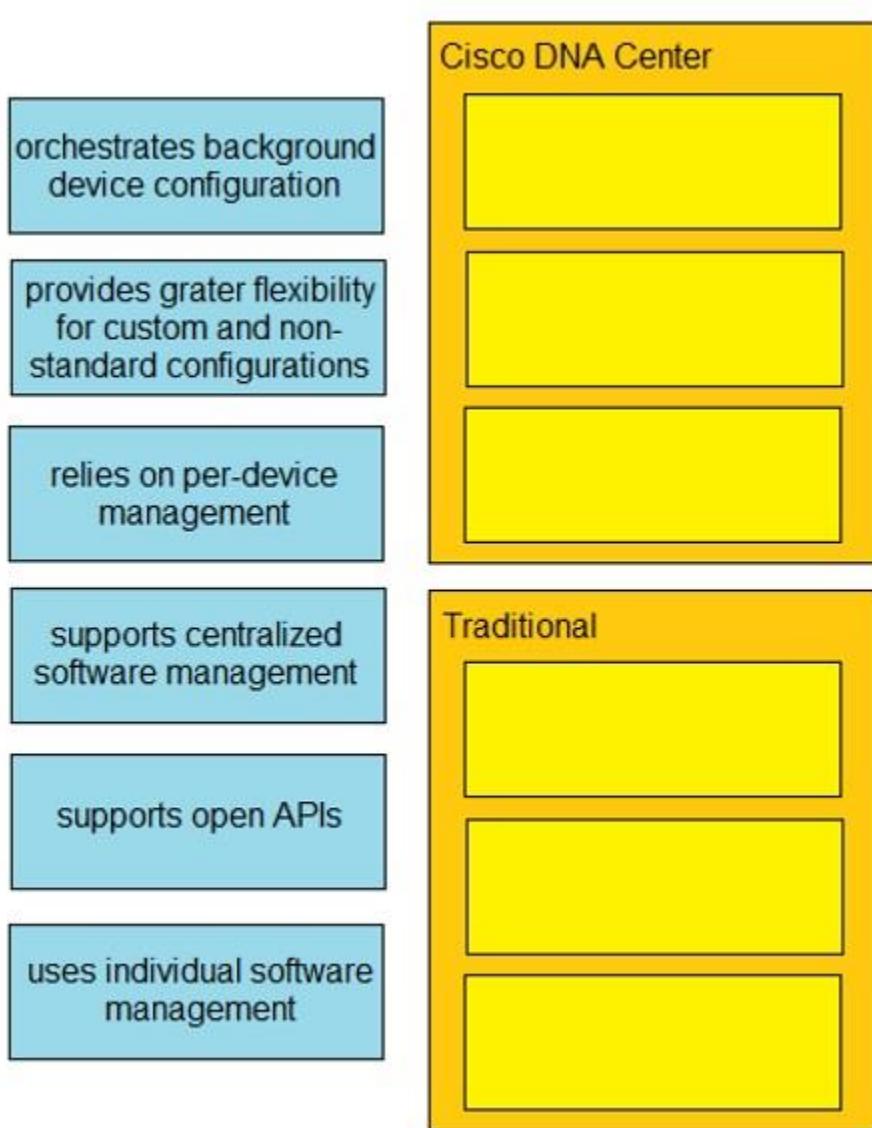
## Answer Area



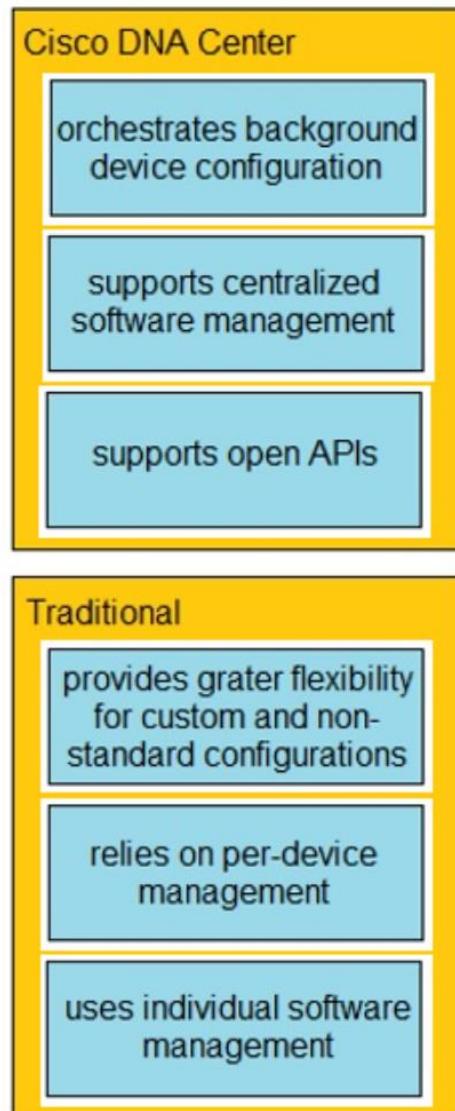
### QUESTION 656

Drag and Drop Question

Drag and drop each characteristic of device-management technologies from the left onto the deployment type on the right.



**Answer:**



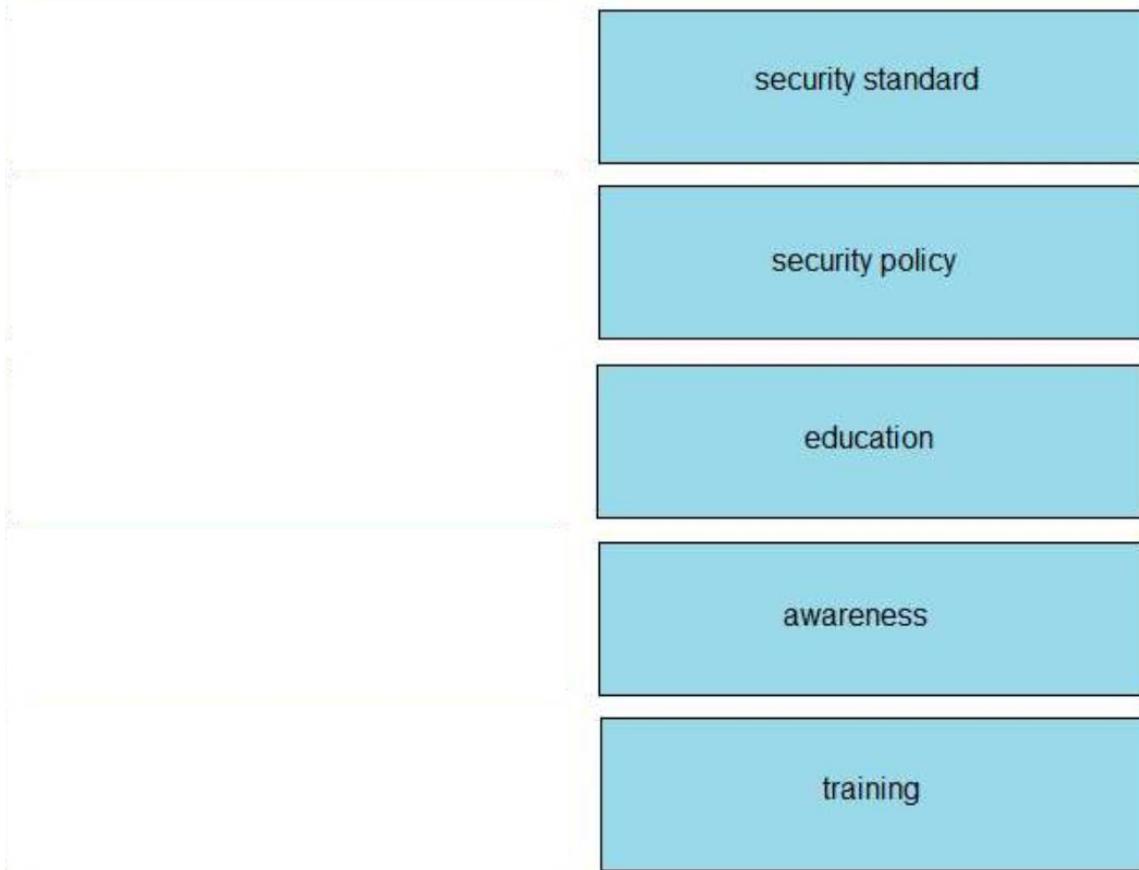
**QUESTION 657**

Drag and Drop Question

Drag and drop the elements of a security program from the left onto the corresponding descriptions on the right.

|                   |                                                                                                                                          |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| awareness         | document that outlines an organization's security goals and practices and the roles and responsibilities of the organization's personnel |
| education         | tactical document that sets out specific tasks and methods to maintain security                                                          |
| security policy   | user-awareness learning level that focuses on learning about topics and practices beyond what is typically required by the user's job    |
| security standard | user-awareness learning level that focuses on security practices that all employees must understand and enforce                          |
| training          | user-awareness learning level that focuses on teaching employees how to perform tasks specifically required by their jobs                |

**Answer:**

**QUESTION 658**

Drag and Drop Question

Drag and drop the Cisco IOS attack mitigation features from the left onto the types of network attack they mitigate on the right.

|                        |                                           |
|------------------------|-------------------------------------------|
| DHCP snooping          | rogue server that spoofs IP configuration |
| Dynamic ARP Inspection | cache poisoning                           |
| IP Source Guard        | flood attacks                             |
| storm control          | rogue clients on the network              |

**Answer:**

IP Source Guard

Dynamic ARP Inspection

storm control

DHCP snooping

**QUESTION 659**

Which command implies the use of SNMPv3?

- A. snmp-server host
- B. snmp-server community
- C. snmp-server enable traps
- D. snmp-server user

**Answer:** D**Explanation:**

Adds a new user to an SNMPv3 group and configures a plain text password for the user.

Example:

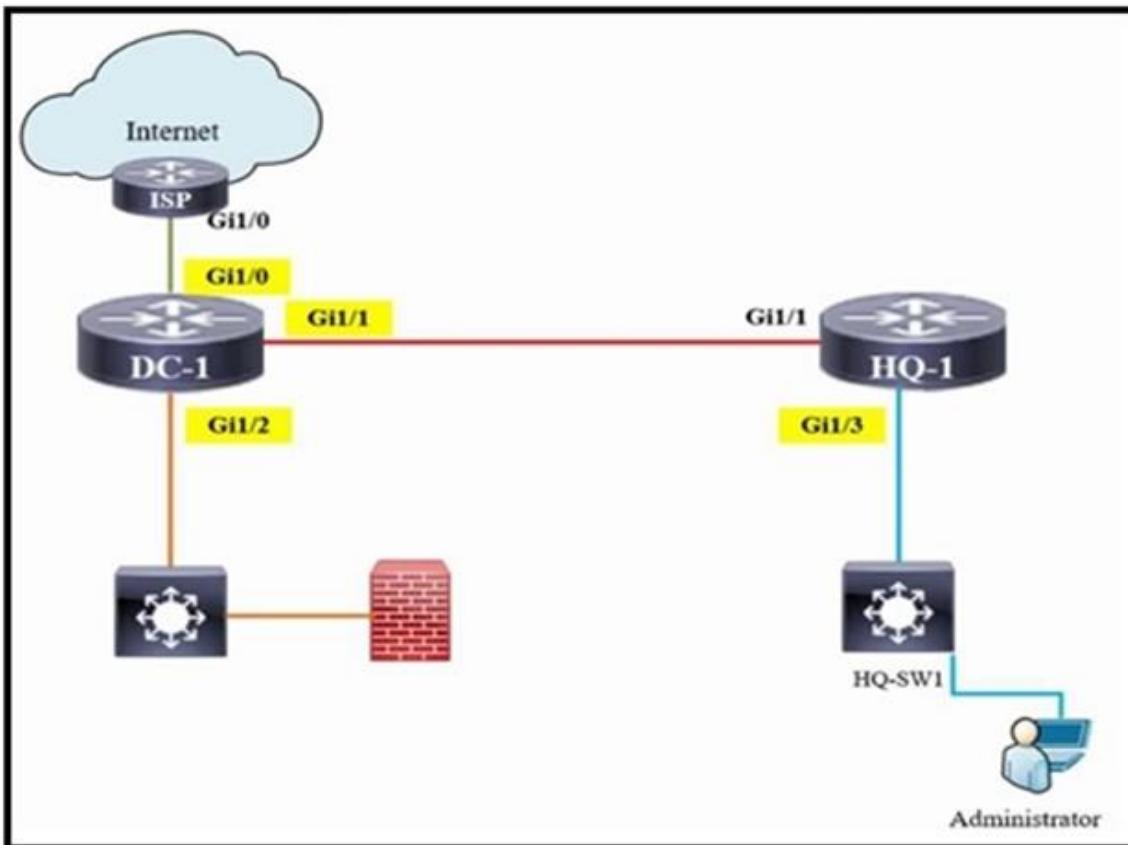
```
Device(config)# snmp-server user user1 group1
v3 auth md5 password123 priv passwd123654
```

**QUESTION 660**

Drag and Drop Question

Refer to Exhibit. The IP address configurations must be completed on the DC-1 and HQ-1 routers based on these requirements:

- DC-1 Gi1/0 must be the last usable address on a /30
- DC-1 Gi1/1 must be the first usable address on a /29
- DC-1 Gi1/2 must be the last usable address on a /28
- HQ-1 Gil/3 must be the last usable address on a /29



Drag and drop the commands from the left onto the destination interfaces on the right. Not all commands are used.

ip address 192.168.4.9 255.255.255.248

ip address 192.168.3.14 255.255.255.240

ip address 209.165.202.129 255.255.255.252

ip address 192.168.4.13 255.255.255.240

ip address 209.165.202.130 255.255.255.252

ip address 209.165.202.131 255.255.255.252

ip address 192.168.3.14 255.255.255.248

|      |       |
|------|-------|
| DC-1 | Gi1/0 |
|      | Gi1/1 |
|      | Gi1/2 |
| HQ-1 | Gi1/3 |

**Answer:**

ip address 209.165.202.129 255.255.255.252

ip address 192.168.4.13 255.255.255.240

**DC-1**

ip address 209.165.202.130 255.255.255.252

ip address 192.168.4.9 255.255.255.248

ip address 192.168.3.14 255.255.255.240

ip address 209.165.202.131 255.255.255.252

**HQ-1**

ip address 192.168.3.14 255.255.255.248

**QUESTION 661**

Drag and Drop Question

Drag and drop the IPv6 address descriptions from the left onto the IPv6 address types on the right. Not all options are used.

IPv6 addresses in the format FF02::5

IPv6 addresses that begin with FD

may be used by multiple organizations at the same time

private IPv6 addresses

serve as next-hop addresses

unable to serve as destination addresses

**Unique Local Addresses**
**Link-Local Addresses**
**Answer:**

IPv6 addresses in the format FF02::5

**Unique Local Addresses**

IPv6 addresses that begin with FD

serve as next-hop addresses

unable to serve as destination addresses

**Link-Local Addresses**

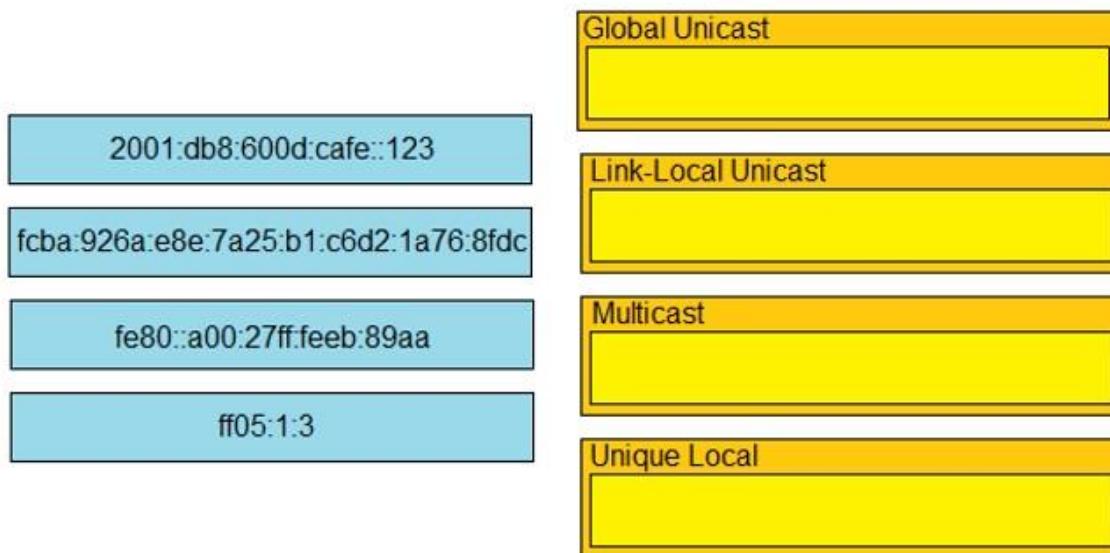
may be used by multiple organizations at the same time

private IPv6 addresses

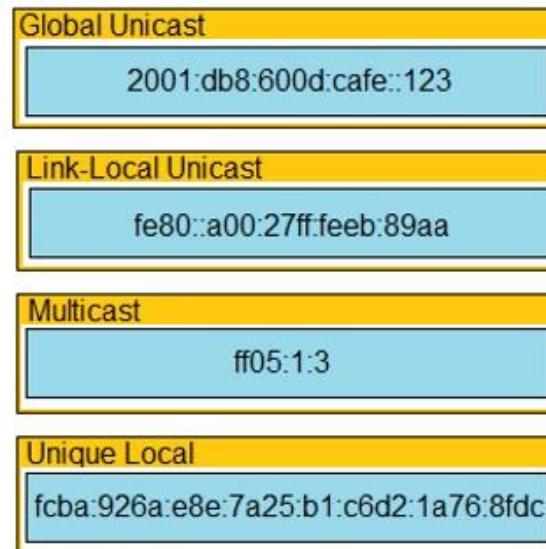
**QUESTION 662**

Drag and Drop Question

Drag and drop the IPv6 addresses from the left onto the corresponding address types on the right.

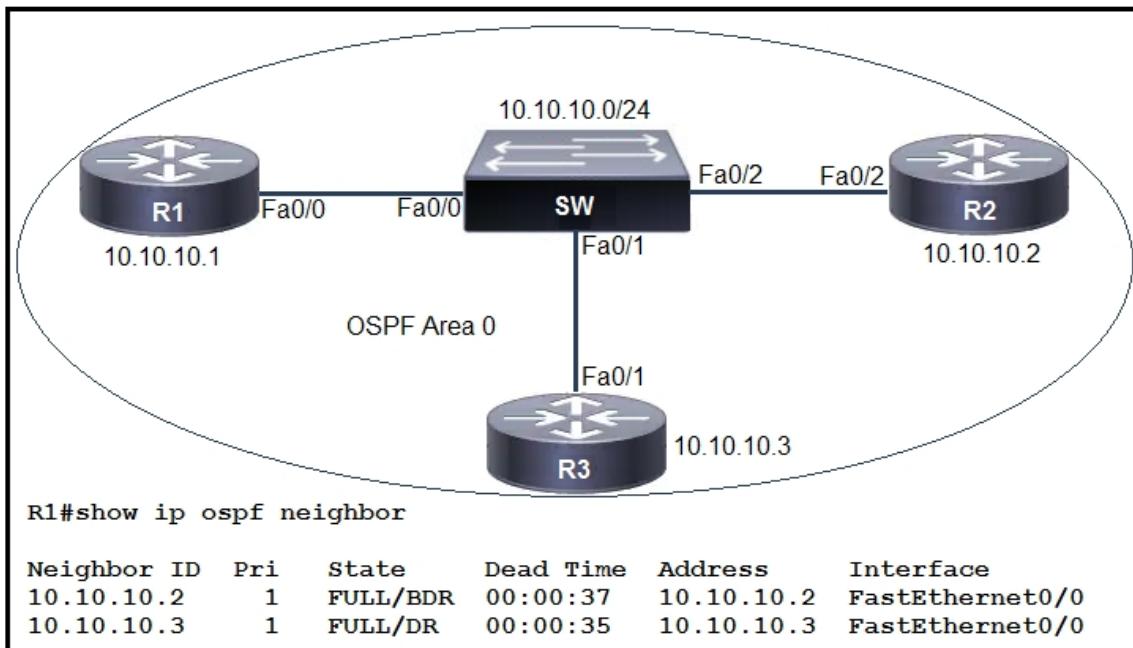


**Answer:**



**QUESTION 663**

Refer to the exhibit. R1 has taken the DROTHER role in the OSPF DR/BDR election process. Which configuration must an engineer implement so that R1 is elected as the DR?



- A. R1(config)#interface FastEthernet 0/0  
R1(config-if)#ip ospf priority 1  
R1#clear ip ospf process
- B. R3(config)#interface FastEthernet 0/1  
R3(config-if)#ip ospf priority 200  
R3#clear ip ospf process
- C. R2(config)#interface FastEthernet 0/2  
R2(config-if)#ip ospf priority 1  
R2#clear ip ospf process
- D. R1(config)#interface FastEthernet 0/0  
R1(config-if)#ip ospf priority 200  
R1#clear ip ospf process

**Answer:** D

#### QUESTION 664

What is a feature of WPA?

- A. 802.1x authentication
- B. preshared key
- C. TKIP/MIC encryption
- D. small Wi-Fi application

**Answer:** C

#### QUESTION 665

Refer to the exhibit. The network administrator must prevent the switch Cat9K-2 IP address from being visible in LLDP without disabling the protocol.

Which action must be taken to complete the task?

```
Cat9K-1# show lldp entry Cat9K-2

Local Intf: Gi1/0/21
Chassis id: 308b.b2b3.2880
Port id: Gi1/0/21
Port Description: GigabitEthernet1/0/21
System Name: Cat9K-2

Management Addresses:
IP: 10.5.110.2
```

- A. Configure the no lldp tlv-select-management-address command globally on Cat9K-2
- B. Configure the no lldp transmit command on interface G1/0/21 in Cat9K-1
- C. Configure the no lldp receive command on interface G1/0/21 on Cat9K-1
- D. Configure the no lldp mac-phy-cfg command globally on Cat9K-2

**Answer:** A

**Explanation:**

This example shows how to enable LLDP to send or receive IPv4 management address TLVs:

```
switch# configure terminal
switch(config)# lldp tlv-select management-address v4
```

Source:

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus3000/sw/layer2/602\\_U1\\_1/b\\_Cisco\\_n3k\\_Layer\\_2\\_Switching\\_Config\\_602\\_u1\\_1/b\\_Cisco\\_n3k\\_Layer\\_2\\_Switching\\_Config\\_602\\_u1\\_1\\_chapter\\_01001.pdf](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/nexus3000/sw/layer2/602_U1_1/b_Cisco_n3k_Layer_2_Switching_Config_602_u1_1/b_Cisco_n3k_Layer_2_Switching_Config_602_u1_1_chapter_01001.pdf)

#### QUESTION 666

Refer to the exhibit. What are the two steps an engineer must take to provide the highest encryption and authentication using domain credentials from LDAP?

| General                                                                                                                                                                                    | Security       | QoS                | Policy-Mapping | Advanced |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------|----------------|----------|
| <b>Layer 2</b>                                                                                                                                                                             | <b>Layer 3</b> | <b>AAA Servers</b> |                |          |
| Layer 2 Security <a href="#">6</a> <input type="text"/><br><input checked="" type="checkbox"/> MAC Filtering <a href="#">9</a>                                                             |                |                    |                |          |
| <b>Fast Transition</b> <hr/> <input checked="" type="checkbox"/> Fast Transition                                                                                                           |                |                    |                |          |
| <b>Protected Management Frame</b> <hr/> PMF <input style="border: 1px solid black; padding: 2px; margin-left: 10px;" type="button" value="Disabled"/>                                      |                |                    |                |          |
| <b>WPA+WPA2 Parameters</b> <hr/> WPA Policy <input type="checkbox"/><br>WPA2 Policy <input type="checkbox"/><br>WPA2 Encryption <input type="checkbox"/> AES <input type="checkbox"/> TKIP |                |                    |                |          |
| <b>Authentication Key Management</b> <hr/> 802.1X <input type="checkbox"/> Enable<br>CCKM <input type="checkbox"/> Enable<br>PSK <input type="checkbox"/> Enable                           |                |                    |                |          |

- A. Select PSK under Authentication Key Management
- B. Select WPA+WPA2 on Layer 2 Security
- C. Select Static-WEP + 802.1X on Layer 2 Security
- D. Select WPA Policy with TKIP Encryption
- E. Select 802.1X from under Authentication Key Management

**Answer:** BE

#### QUESTION 667

Which WAN topology has the highest degree of reliability?

- A. full mesh
- B. Point-to-point
- C. hub-and-spoke
- D. router-on-a-stick

**Answer:** A

#### QUESTION 668

Refer to the exhibit. Which change to the configuration on Switch2 allows the two switches to establish an EtherChannel?

```

Switch1#show etherchannel summary
Flags: D - down P - in port-channel
 I - stand-alone S - suspended
 H - Hot-standby (LACP only)
 R - Layer3 S - Layer2
 U - in use f - failed to allocate aggregator
 u - unsuitable for bundling
 w - waiting to be aggregated
 d - default port

Number of channel-groups in use: 1
Number of aggregators: 1
Group Port-channel Protocol Ports
-----+-----+-----+
 1 Pol (SD) LACP Fa0/2 (I) Fa0/1 (I)

Switch1#show run
Building configuration...
interface Port-channel1
!
interface FastEthernet0/1
 channel-group 1 mode passive
!
interface FastEthernet0/2
 channel-group 1 mode passive
Switch2#show run
Building configuration...
interface Port-channel1
!
interface FastEthernet0/1
 channel-group 1 mode passive
!
interface FastEthernet0/2
 channel-group 1 mode passive

```

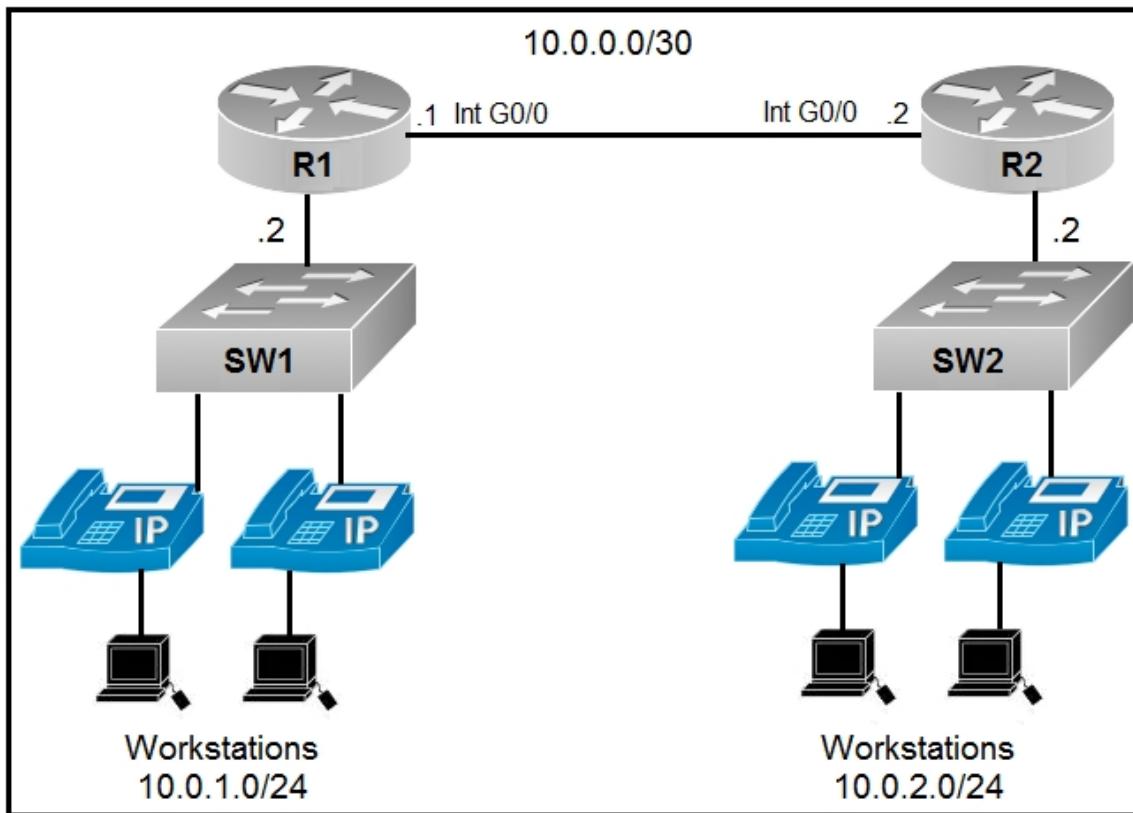
- A. Change the protocol to EtherChannel mode on.
- B. Change the LACP mode to active
- C. Change the LACP mode to desirable
- D. Change the protocol to PAqP and use auto mode

**Answer:** B

#### QUESTION 669

Refer to the exhibit. An engineer is asked to configure router R1 so that it forms an OSPF single-area neighbor relationship with R2.

Which command sequence must be implemented to configure the router?



- A. router ospf 100 network 10.0.0.0 0.0.0.252 area0 network 10.0.1.0 0.0.0.255 area0
- B. router ospf 100 network 10.0.0.0 0.0.0.3 area0 network 10.0.2.0 255.255.255.0 area0
- C. router ospf 10 network 10.0.0.0 0.0.0.3 area0 network 10.0.1.0 0.0.0.255 area0
- D. router ospf 10 network 10.0.0.0 0.0.0.3 area0 network 10.0.2.0 0.0.0.255 area0

**Answer:** C

#### QUESTION 670

What is a function performed by a web server?

- A. provide an application that is transmitted over HTTP
- B. send and retrieve email from client devices
- C. authenticate and authorize a user's identity
- D. securely store files for FTP access

**Answer:** A

#### QUESTION 671

What is the collapsed layer in collapsed core architectures?

- A. core and WAN
- B. access and WAN
- C. distribution and access
- D. core and distribution

**Answer:** D

**Explanation:**

A collapsed core architecture takes the normal three-tier hierarchical network and collapses it into a two-tier network. In a two-tier network, the function of the switches in the core layer and distribution layer are “collapsed” into a combined core and distribution layer on a single switch.

#### **QUESTION 672**

Which set of 2.4 GHz nonoverlapping wireless channels is standard in the United States?

- A. channels 2, 7, 9, and 11
- B. channels 1, 6, 11, and 14
- C. channels 2, 7, and 11
- D. channels 1, 6, and 11

**Answer:** D

#### **QUESTION 673**

An engineer is installing a new wireless printer with a static IP address on the Wi-Fi network. Which feature must be enabled and configured to prevent connection issues with the printer?

- A. client exclusion
- B. passive client
- C. DHCP address assignment
- D. static IP tunneling

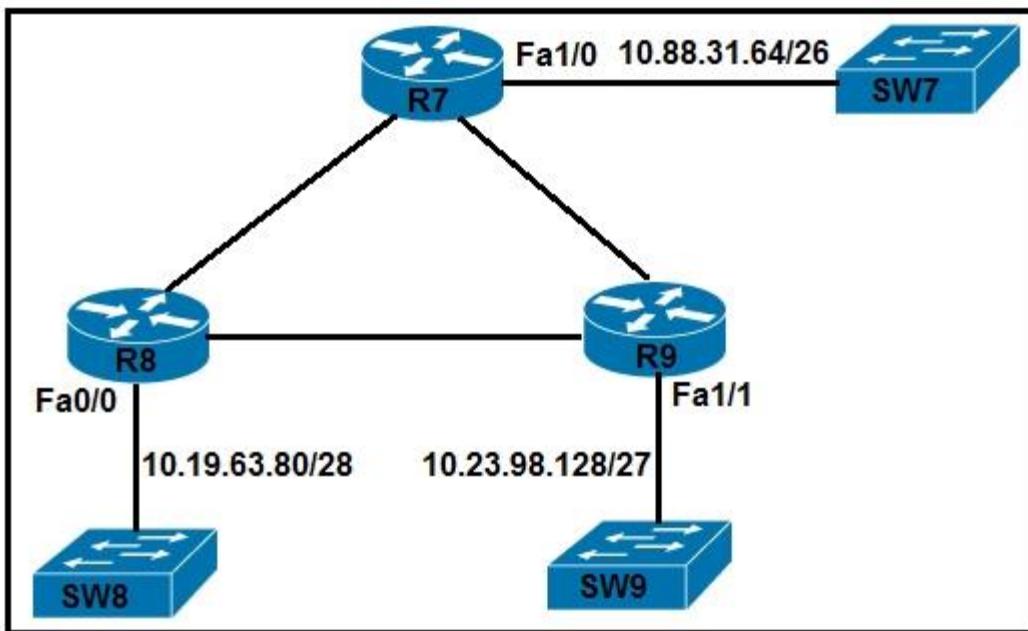
**Answer:** B

**Explanation:**

Passive clients are wireless devices, such as scales and printers that are configured with a static IP address. These clients do not transmit any IP information such as IP address, subnet mask, and gateway information when they associate with an access point. As a result, when passive clients are used, the controller never knows the IP address unless they use the DHCP.

#### **QUESTION 674**

Refer to the exhibit. Each router must be configured with the last usable IP address in the subnet. Which configuration fulfills this requirement?

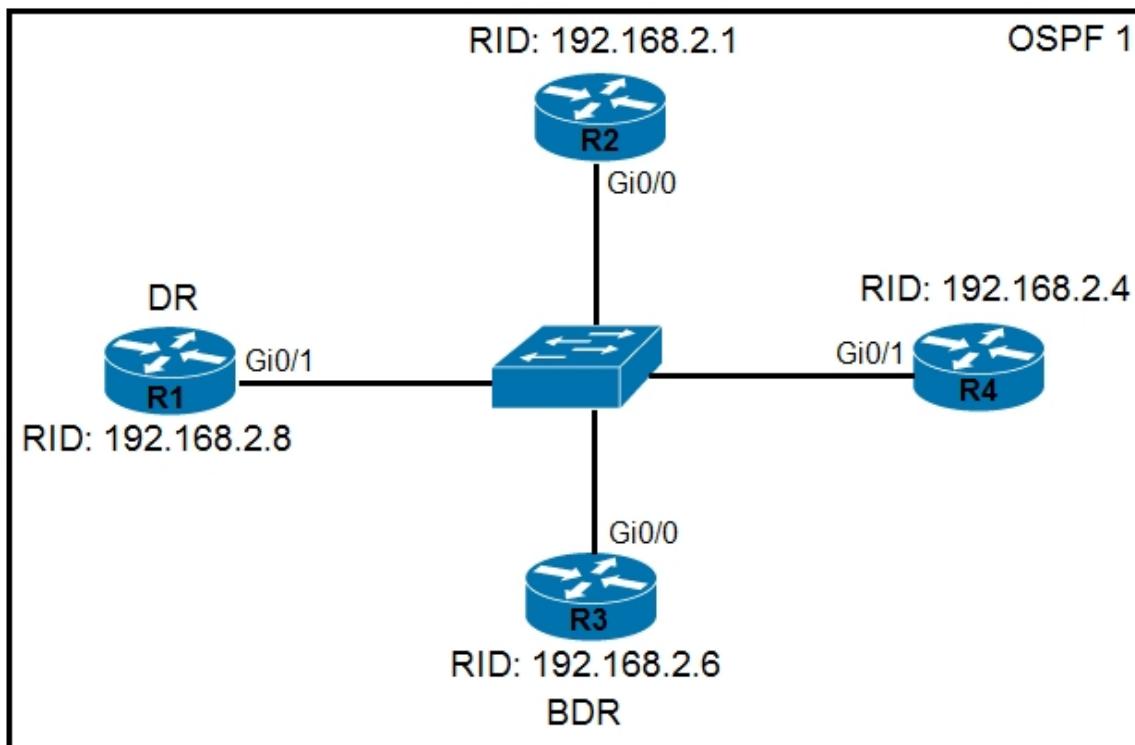


- A. R7# interface FastEthernet1/0 ip address 10.88.31.127 255.255.255.192  
R8# interface FastEthernet0/0 ip address 10.19.63.95 255.255.255.240  
R9# interface FastEthernet1/1 ip address 10.23.98.159 255.255.255.224
- B. R7# interface FastEthernet1/0 ip address 10.88.31.126 255.255.255.240  
R8# interface FastEthernet0/0 ip address 10.19.63.94 255.255.255.192  
R9# interface FastEthernet1/1 ip address 10.23.98.158 255.255.255.248
- C. R7# interface FastEthernet1/0 ip address 10.88.31.127 255.255.255.240  
R8# interface FastEthernet0/0 ip address 10.19.63.95 255.255.255.192  
R9# interface FastEthernet1/1 ip address 10.23.98.159 255.255.255.248
- D. R7# interface FastEthernet1/0 ip address 10.88.31.126 255.255.255.192  
R8# interface FastEthernet0/0 ip address 10.19.63.94 255.255.255.240  
R9# interface FastEthernet1/1 ip address 10.23.98.158 255.255.255.224

**Answer:** D

#### QUESTION 675

Refer to the exhibit. All routers in the network are configured. R2 must be the DR. After the engineer connected the devices, R1 was elected as the DR. Which command sequence must be configured on R2 to be elected as the DR in the network?



- A. R2(config)#interface gi0/0  
R2(config-if)#ip ospf priority 100
- B. R2(config)#router ospf 1  
R2(config-router)#router-id 192.168.2.7
- C. R2(config)#router ospf 1  
R2(config-router)#router-id 10.100.100.100
- D. R2(config)#interface gi0/0  
R2(config-if)#ip ospf priority 1

**Answer:** A

#### QUESTION 676

An engineer is configuring data and voice services to pass through the same port. The designated switch interface fastethernet0/1 must transmit packets using the same priority for data when they are received from the access port of the IP phone.  
Which configuration must be used?

- A. interface fastethernet0/1  
switchport voice vlan dot1p
- B. interface fastethernet0/1  
switchport priority extend cos 7
- C. interface fastethernet0/1  
switchport voice vlan untagged
- D. interface fastethernet0/1  
switchport priority extend trust

**Answer:** D

**Explanation:**

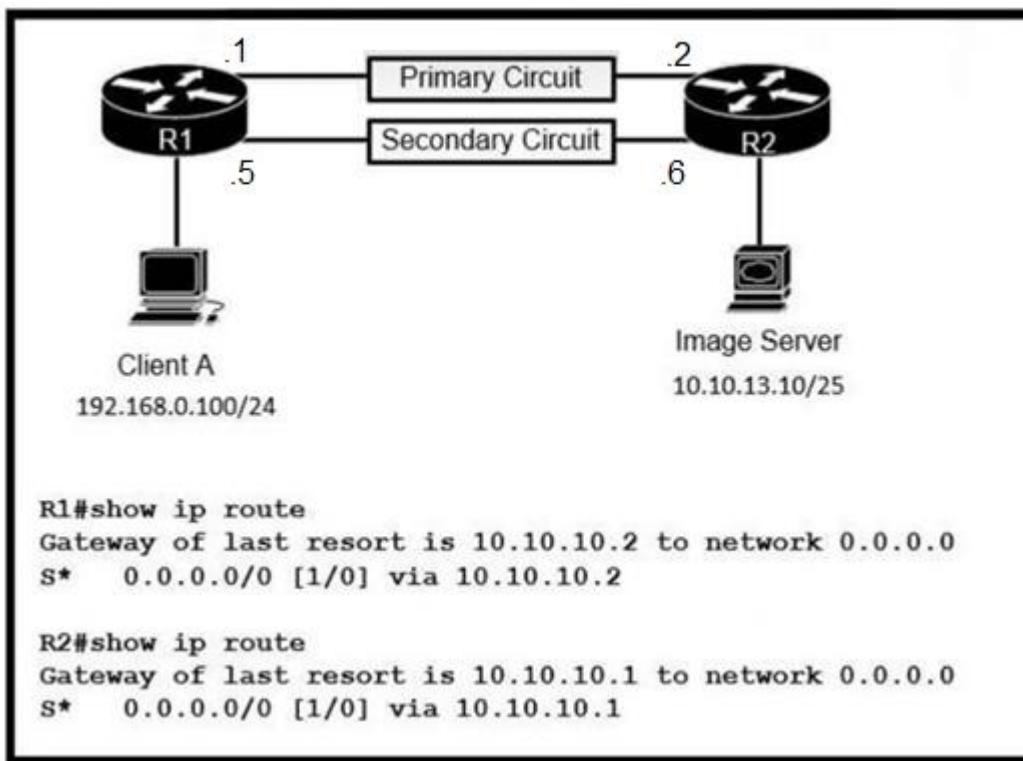
Set the priority of data traffic received from the Cisco IP Phone access port:  
 cos value - Configure the "phone" to override the priority received from the "PC or the attached device" with the specified CoS value. The value is a number from 0 to 7, with 7 as the highest priority. The default priority is cos 0.  
 So, If we set the value 7 here it means, port will prioritize the voice traffic over data traffic.  
 trust - Configure the phone access port to trust the priority received from the "PC or the attached device".  
 When traffic from pc is trusted, it will consider both voice and data traffic as same priority. (Since voice traffic is prioritised over data traffic by default.)

### QUESTION 677

Refer to the exhibit. Routers R1 and R2 have been configured with their respective LAN interfaces.

The two circuits are operational and reachable across WAN.

Which command set establishes failover redundancy if the primary circuit goes down?



- A. R1(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.6  
R2(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.5
- B. R1(config)#ip route 10.10.13.10 255.255.255.255 10.10.10.2  
R2(config)#ip route 192.168.0.100 255.255.255.255 10.10.10.1
- C. R1(config)#ip route 10.10.13.10 255.255.255.255 10.10.10.6  
R2(config)#ip route 192.168.0.100 255.255.255.255 10.10.10.5
- D. R1(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.6 2  
R2(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.5 2

**Answer:** D

**QUESTION 678**

What is the MAC address used with VRRP as a virtual address?

- A. 00-00-0C-07-AD-89
- B. 00-00-5E-00-01-0a
- C. 00-07-C0-70-AB-01
- D. 00-C6-41-93-90-91

**Answer:** B

**QUESTION 679**

Which port type supports the spanning-tree portfast command without additional configuration?

- A. access ports
- B. Layer 3 main Interfaces
- C. Layer 3 suninterfaces
- D. trunk ports

**Answer:** A

**QUESTION 680**

Which type of traffic Is sent with pure iPsec?

- A. broadcast packets from a switch that is attempting to locate a MAC address at one of several remote sites
- B. multicast traffic from a server at one site to hosts at another location
- C. spanning-tree updates between switches that are at two different sites
- D. unicast messages from a host at a remote site to a server at headquarters

**Answer:** D

**QUESTION 681**

What are two examples of multifactor authentication? (Choose two.)

- A. single sign-on
- B. unique user knowledge
- C. passwords that expire
- D. soft tokens
- E. shared password responsibility

**Answer:** BC

**Explanation:**

Single sign-on allows users to access multiple applications, websites, resources with one set of login credentials.

It is not a part of a MFA, it actually needs MFA to be secured.

A soft (or hard) token can be a part of a MFA

A password that expires can be a part of a MFA

**QUESTION 682**

How many bits represent network id in a IPv6 address?

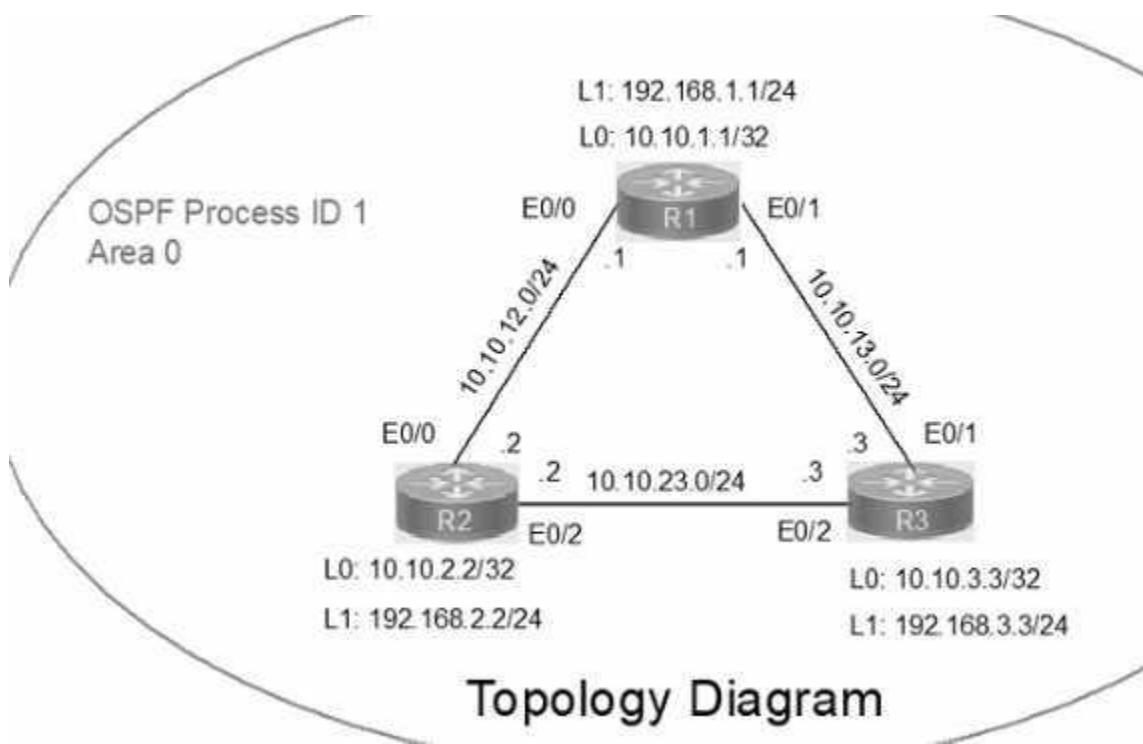
- A. 32
- B. 48
- C. 64
- D. 128

**Answer:** C

### QUESTION 683

#### Lab Simulation 1

Refer to the exhibit.



#### Guidelines

This is a lab item in which tasks will be performed on virtual devices.

- Refer to the Tasks tab to view the tasks for this lab item
- Refer to the Topology tab to access the device console(s) and perform the tasks.
- Console access is available for all required devices by clicking the device icon or using the tab(s) above the console window.
- All necessary preconfigurations have been applied.
- Do not change the enable password or hostname for any device.
- Save your configurations to NVRAM before moving to the next item.
- Click Next at the bottom of the screen to submit this lab and move to the next question
- When Next is clicked, the lab closes and cannot be reopened

IP connectivity between the three routers is configured. OSPF adjacencies must be established.

1. Configure R1 and R2 Router IDs using the interface IP addresses from the link that is shared between them.

2. Configure the R2 links with a max value facing R1 and R3. R2 must become the DR. R1 and R3 links facing R2 must remain with the default OSPF configuration for DR election. Verify the configuration after clearing the OSPF process.
3. Using a host wildcard mask, configure all three routers to advertise their respective Loopback1 networks.
4. Configure the link between R1 and R3 to disable their ability to add other OSPF routers.

**Answer:**

```
on R1
conf terminal
interface Loopback0
ip address 10.10.1.1 255.255.255.255
!
interface Loopback1
ip address 192.168.1.1 255.255.255.0
!
interface Ethernet0/0
no shut
ip address 10.10.12.1 255.255.255.0
ip ospf 1 area 0
duplex auto
!
interface Ethernet0/1
no shut
ip address 10.10.13.1 255.255.255.0
ip ospf 1 area 0
duplex auto
!
router ospf 1
router-id 10.10.12.1
network 10.10.1.1 0.0.0.0 area 0
network 192.168.1.0 0.0.0.255 area 0
!
copy run star
```

---

```
On R2
conf terminal
interface Loopback0
ip address 10.10.2.2 255.255.255.255
!
interface Loopback1
ip address 192.168.2.2 255.255.255.0
!
interface Ethernet0/0
no shut
ip address 10.10.12.2 255.255.255.0
ip ospf priority 255
ip ospf 1 area 0
duplex auto
!
interface Ethernet0/2
no shut
ip address 10.10.23.2 255.255.255.0
```

```
ip ospf priority 255
ip ospf 1 area 0
duplex auto
!
router ospf 1
network 10.10.2.2 0.0.0.0 area 0
network 192.168.2.0 0.0.0.255 area 0
!
copy runs start
```

---

```
On R3
conf ter
interface Loopback0
ip address 10.10.3.3 255.255.255.255
!
interface Loopback1
ip address 192.168.3.3 255.255.255.0
!
interface Ethernet0/1
no shut
ip address 10.10.13.3 255.255.255.0
ip ospf 1 area 0
duplex auto
!
interface Ethernet0/2
no shut
ip address 10.10.23.3 255.255.255.0
ip ospf 1 area 0
duplex auto
!
router ospf 1
network 10.10.3.3 0.0.0.0 area 0
network 192.168.3.0 0.0.0.255 area 0
!
copy run start
!
```

**QUESTION 684****Lab Simulation 2**

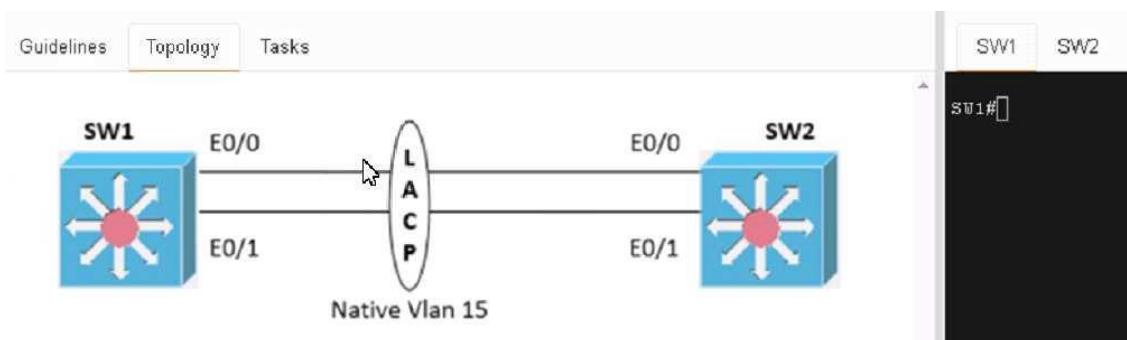
Physical connectivity is implemented between the two Layer 2 switches, and the network connectivity between them must be configured:

1. Configure an LACP EtherChannel and number it as 1; configure it between switches SW1 and SVV2 using interfaces Ethernet0/0 and Ethernet0/1 on both sides. The LACP mode must match on both ends.
2. Configure the EtherChannel as a trunk link.
3. Configure the trunk link with 802.1 q tags.
4. Configure the native VLAN of the EtherChannel as VLAN 15.

## Guidelines

This is a lab item in which tasks will be performed on virtual devices.

- Refer to the **Tasks** tab to view the tasks for this lab item.
- Refer to the **Topology** tab to access the device console(s) and perform the tasks.
- Console access is available for all required devices by clicking the device icon or using the tab(s) above the console window.
- All necessary preconfigurations have been applied.
- Do not change the enable password or hostname for any device.
- **Save your configurations** to NVRAM before moving to the next item.
- Click **Next** at the bottom of the screen to submit this lab and move to the next question.
- When **Next** is clicked, the lab closes and cannot be reopened.



### Answer:

On SW1:

```

conf terminal
vIan 15
exit
interface range eth0/0 - 1
channel-group 1 mode active
exit
interface port-channel 1
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk native vlan 15
end
copy run start

```

on SW2:

```

conf terminal
vIan 15
exit
interface range eth0/0 - 1
channel-group 1 mode active
exit
interface port-channel 1

```

```

switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk native vlan 15
end
copy run start

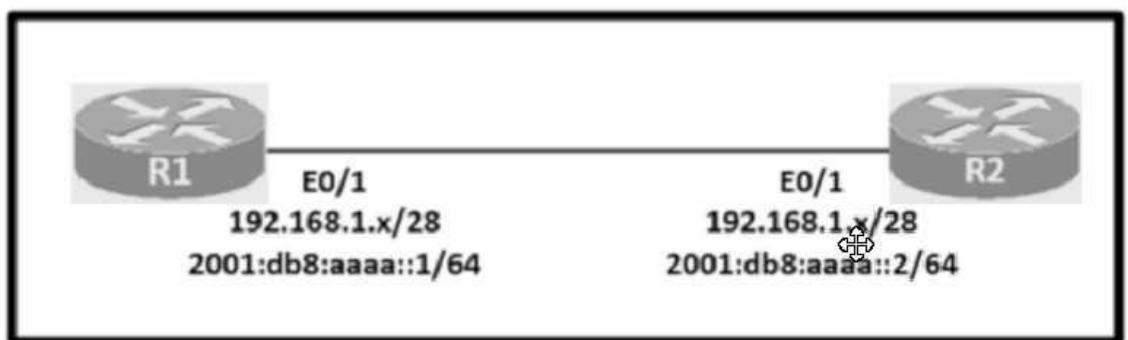
```

### QUESTION 685

#### Lab Simulation 3

Configure IPv4 and IPv6 connectivity between two routers. For IPv4, use a /28 network from the 192.168.1.0/24 private range. For IPv6, use the first /64 subnet from the 2001:0db8:aaaa::/48 subnet.

1. Using Ethernet0/1 on routers R1 and R2, configure the next usable/28 from the 192.168.1.0/24 range. The network 192.168.1.0/28 is unavailable.
2. For the IPv4 /28 subnet, router R1 must be configured with the first usable host address.
3. For the IPv4 /28 subnet, router R2 must be configured with the last usable host address.
4. For the IPv6 /64 subnet, configure the routers with the IP addressing provided from the topology.
5. A ping must work between the routers on the IPv4 and IPv6 address ranges.



Guidelines
Topology
Tasks

R1 R2

R1# []

### Guidelines

This is a lab item in which tasks will be performed on virtual devices.

- Refer to the **Tasks** tab to view the tasks for this lab item.
- Refer to the **Topology** tab to access the device console(s) and perform the tasks.
- Console access is available for all required devices by clicking the device icon or using the tab(s) above the console window.
- All necessary preconfigurations have been applied.
- Do not change the enable password or hostname for any device.
- **Save your configurations** to NVRAM before moving to the next item.
- Click **Next** at the bottom of the screen to submit this lab and move to the next question.
- When **Next** is clicked, the lab closes and cannot be reopened.

### Answer:

```

on R1
config terminal
ipv6 unicast-routing
inter eth0/1
ip addre 192.168.1.1 255.255.255.240
ipv6 addre 2001:db8:aaaa::1/64

```

```

not shut
end
copy running start

on R2
config terminal
ipv6 unicast-routing
inter eth0/1
ip address 192.168.1.14 255.255.255.240
ipv6 address 2001:db8:aaaa::2/64
not shut
end
copy running start

for test from R1
ping ipv6 2001:db8:aaaa::1

for test from R2
ping ipv6 2001:db8:aaaa::2

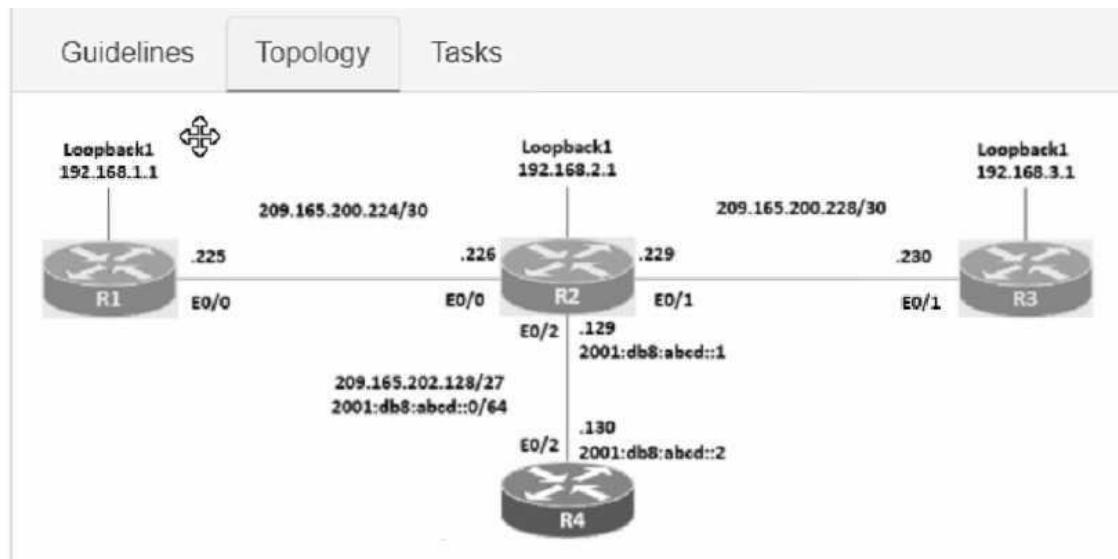
```

### QUESTION 686

#### Lab Simulation 4

Connectivity between four routers has been established. IP connectivity must be configured in the order presented to complete the implementation. No dynamic routing protocols are included.

- Configure static routing using host routes to establish connectivity from router R3 to the router R1 Loopback address using the source IP of 209.165.200.230.
- Configure an IPv4 default route on router R2 destined for router R4.
- Configure an IPv6 default router on router R2 destined for router R4.



[Guidelines](#)[Topology](#)[Tasks](#)

## Guidelines

This is a lab item in which tasks will be performed on virtual devices.

- Refer to the **Tasks** tab to view the tasks for this lab item.
- Refer to the **Topology** tab to access the device console(s) and perform the tasks.
- Console access is available for all required devices by clicking the device icon or using the tab(s) above the console window.
- All necessary preconfigurations have been applied.
- Do not change the enable password or hostname for any device.
- **Save your configurations** to NVRAM before moving to the next item.
- Click **Next** at the bottom of the screen to submit this lab and move to the next question.
- When **Next** is clicked, the lab closes and cannot be reopened.

### Answer:

```
1.- on R3
config terminal
ip route 192.168.1.1 255.255.255.255 209.165.200.229
end
copy running start
```

```
2.- on R2
config terminal
ip route 0.0.0.0 0.0.0.0 209.165.202.130
end
copy running start
```

```
3.- on R2
config terminal
ipv6 route ::/0 2001:db8:abcd::2
end
copy running start
```

### QUESTION 687 Lab Simulation 5

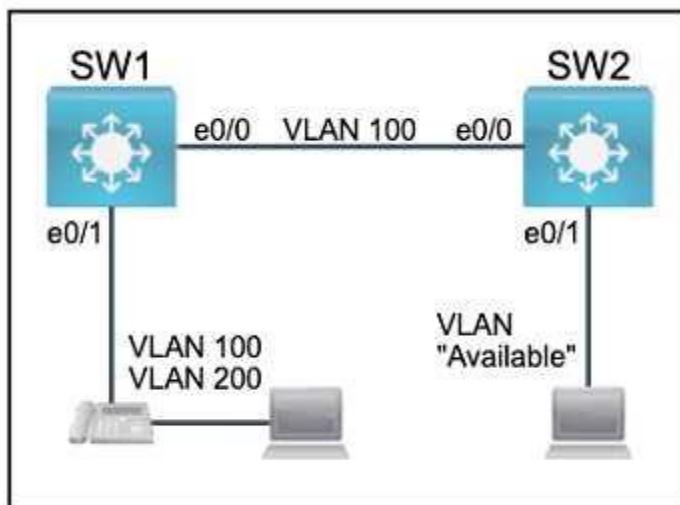
## Guidelines

This is a lab item in which tasks will be performed on virtual devices.

- Refer to the **Tasks** tab to view the tasks for this lab item.
- Refer to the **Topology** tab to access the device console(s) and perform the tasks.
- Console access is available for all required devices by clicking the device icon or using the tab(s) above the console window.
- All necessary preconfigurations have been applied.
- Do not change the enable password or hostname for any device.
- **Save your configurations** to NVRAM before moving to the next item.
- Click **Next** at the bottom of the screen to submit this lab and move to the next question.
- When **Next** is clicked, the lab closes and cannot be reopened.

All physical cabling between the two switches is installed. Configure the network connectivity between the switches using the designated VLANs and interfaces.

1. Configure VLAN 100 named Compute and VLAN 200 named Telephony where required for each task.
2. Configure Ethernet0/1 on SW2 to use the existing VLAN named Available.
3. Configure the connection between the switches using access ports.
4. Configure Ethernet0/1 on SW1 using data and voice VLANs.
5. Configure Ethernet0/1 on SW2 so that the Cisco proprietary neighbor discovery protocol is turned off for the designated interface only.



### Answer:

```
on sw1
enable
conf t
vlan 100
name Compute
vlan 200
name Telephony
int e0/1
switchport voice vlan 200
switchport access vlan 100
```

```
int e0/0
switchport mode access
do wr

on sw2
Vlan 99
Name Available
Int e0/1
Switchport access vlan 99
do wr
```

### QUESTION 688

#### Lab Simulation 6

Refer to the exhibit.

## Guidelines

This is a lab item in which tasks will be performed on virtual devices.

- Refer to the **Tasks** tab to view the tasks for this lab item.
- Refer to the **Topology** tab to access the device console(s) and perform the tasks.
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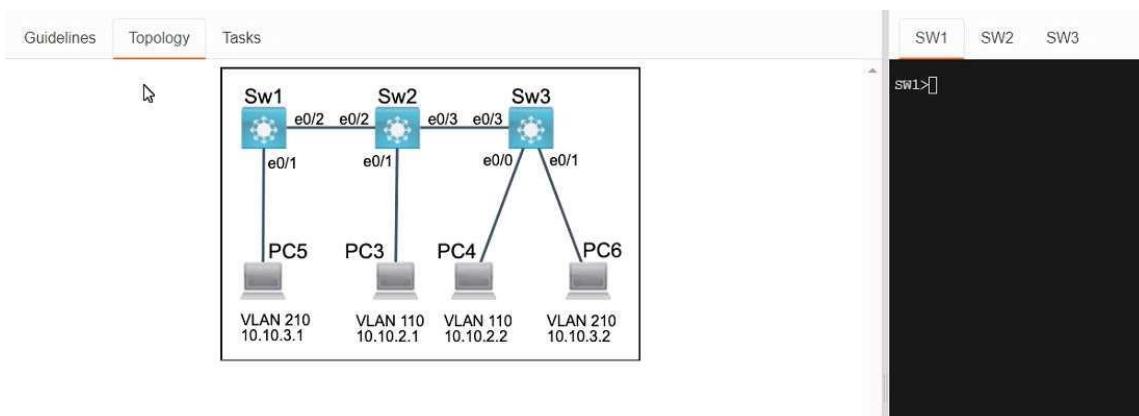


Three switches must be configured for Layer 2 connectivity. The company requires only the designated VLANs to be configured on their respective switches and permitted across any links between switches for security purposes. Do not modify or delete VTP configurations.

The network needs two user-defined VLANs configured:

VLAN 110: MARKETING  
VLAN 210: FINANCE

1. Configure the VLANs on the designated switches and assign them as access ports to the interfaces connected to the PCs.
2. Configure the e0/2 interfaces on Sw1 and Sw2 as 802.1q trunks with only the required VLANs permitted.
3. Configure the e0/3 interfaces on Sw2 and Sw3 as 802.1q trunks with only the required VLANs permitted.


**Answer:**

```
Sw1
enable
config t
Vlan 210
Name FINANCE
Int e0/1
Switchport access vlan 210
do wr
```

```
Sw2
Enable
config t
Vlan 110
Name MARKETING
Int e0/1
Switchport acees vlan 110
do wr
```

```
Sw3
Enable
config t
Vlan 110
Name MARKETING
Vlan 210
Name FINANCE
Int e0/0
Switchport access vlan 110
Int e0/1
Switchport access vlan 210
```

```
Sw1
Int e0/1
Switchport allowed vlan 210
```

```
Sw2
Int e0/2
Switchport trunk allowed vlan 210
```

```
Sw3
```

Int e0/3

Switchport trunk allowed vlan 210

Switchport trunk allowed vlan 210,110

### QUESTION 689

#### Lab Simulation 7

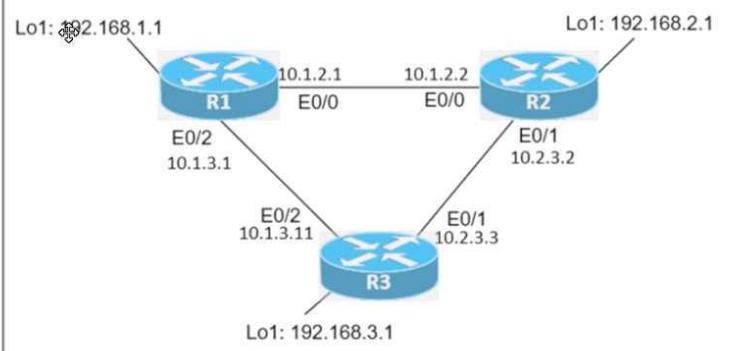
Guidelines
Topology
Tasks

### Guidelines

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### Topology



```

graph LR
 R1((R1)) --- E0_0_1[10.1.2.1]
 R1 --- E0_0_2[10.1.3.1]
 R1 --- E0_0_3[10.1.3.11]
 R1 --- Lo1_1[192.168.1.1]
 R2((R2)) --- E0_0_1[10.1.2.2]
 R2 --- E0_0_2[10.2.3.2]
 R2 --- E0_0_3[10.2.3.3]
 R2 --- Lo1_2[192.168.2.1]
 R3((R3)) --- E0_0_1[10.2.3.3]
 R3 --- E0_0_2[10.2.3.3]
 R3 --- Lo1_3[192.168.3.1]
 E0_0_1 --- E0_0_2
 E0_0_2 --- E0_0_3
 E0_0_3 --- E0_0_1

```

### Tasks

|     |     |     |
|-----|-----|-----|
| R1  | R2  | R3  |
| R1# | R2# | R3# |

Connectivity between three routers has been established, and IP services must be configured in the order presented to complete the implementation. Tasks assigned include configuration of NAT, NTP, DHCP, and SSH services.

1. All traffic sent from R3 to the R1 Loopback address must be configured for NAT on R2. All source addresses must be translated from R3 to the IP address of Ethernet0/0 on R2, while using only a standard access list named NAT. To verify, a ping must be successful to the R1 Loopback address sourced from R3. Do not use NVE/NAT configuration.
2. Configure R1 as an NTP server and R2 as a client, not as a peer, using the IP address of the R1 Ethernet0/2 interface. Set the clock on the NTP server for midnight on January 1, 2019.
3. Configure R1 as a DHCP server for the network 10.1.3.0/24 in a pool named TEST. Using a single command, exclude addresses 1-10 from the range. Interface Ethernet0/2 on R3 must be issued the IP address of 10.1.3.11 via DHCP.
4. Configure SSH connectivity from R1 to R3, while excluding access via other remote connection protocols. Access for user root and password Cisco must be set on router R3 using RSA and

1024 bits. Verify connectivity using an SSH session from router R1 using a destination address of 10.1.3.11. Do NOT modify console access or line numbers to accomplish this task.

Answer:

```
conf t
R1(config)#ntp master 1
R2(config)#ntp server 10.1.2.1
Exit
Router#clock set 00:00:00 jan 1 2019
ip dhcp pool TEST
network 10.1.3.0 255.255.255.0
ip dhcp excluded-address 10.1.3.1 10.1.3.10
R3(config)#int e0/3
R3(config)#int e0/2
ip address dhcp
no shut

crypto key generate RSA
Copy run start
```

**QUESTION 690**

**Lab Simulation 8**

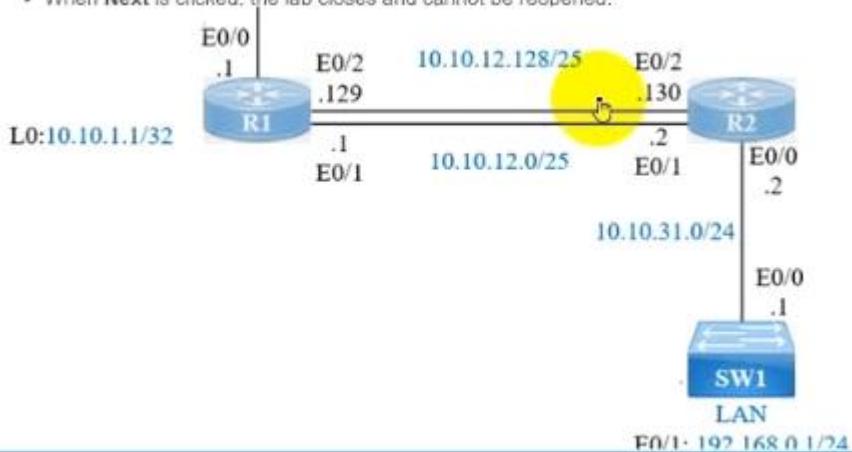
Refer to the exhibit.

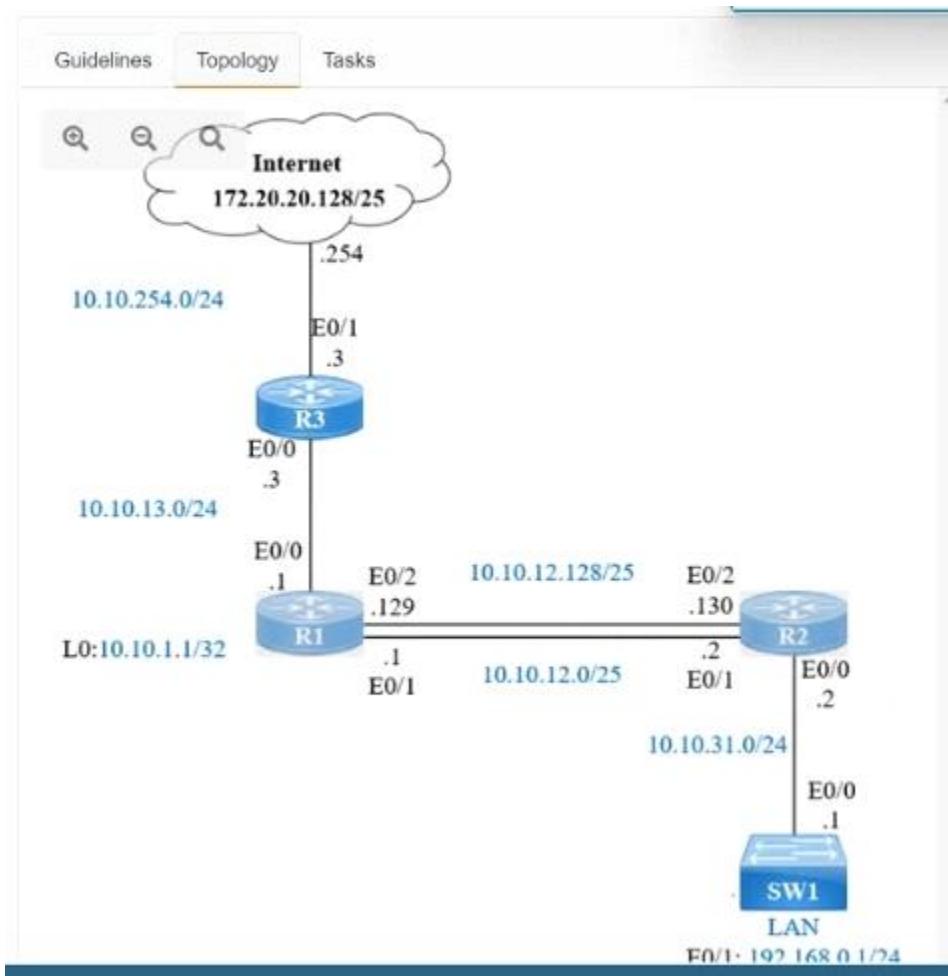
Guidelines   Topology   Tasks

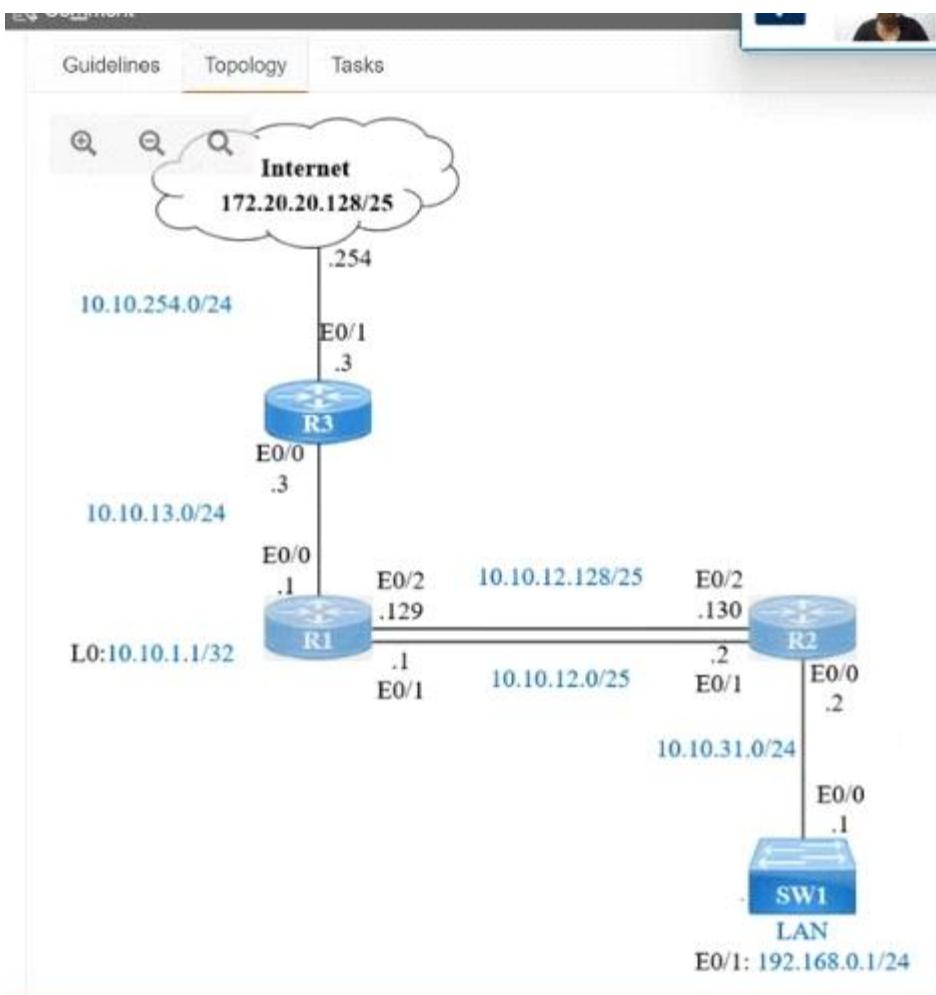
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IP connectivity and OSPF are preconfigured on all devices where necessary. Do not make any changes to the IP addressing or OSPF. The company policy uses connected interfaces and next hops when configuring static routes except for load balancing or redundancy without floating static. Connectivity must be established between subnet 172.20.20.128/25 on the Internet and the LAN at 192.168.0.0/24 connected to SW1:

1. Configure reachability to the switch SW1 LAN subnet in router R2.
2. Configure default reachability to the Internet subnet in router R1.
3. Configure a single static route in router R2 to reach to the Internet subnet considering both redundant links between routers R1 and R2. A default route is NOT allowed in router R2.
4. Configure a static route in router R1 toward the switch SW1 LAN subnet where the primary link must be through Ethernet0/1, and the backup link must be through Ethernet0/2 using a floating route. Use the minimal administrative distance value when required.

**Answer:**

On R2:

Enable

Conf t

Ip route 192.168.1.0 255.255.255.0 10.10.31.1

On R1:

Enable

Conf t  
Ip route 0.0.0.0 0.0.0.0 10.10.13.3

On R2  
Ip route 172.20.20.128 255.255.255.128 e0/2  
Ip route 172.20.20.128 255.255.255.128 e0/1

On R1  
Ip route 192.168.0.0 255.255.255.0 e0/1  
Ip route 192.168.0.0 255.255.255.0 10.10.12.2 3

Save all configurations after every router from anyone of these command Do wr  
Or  
Copy run start

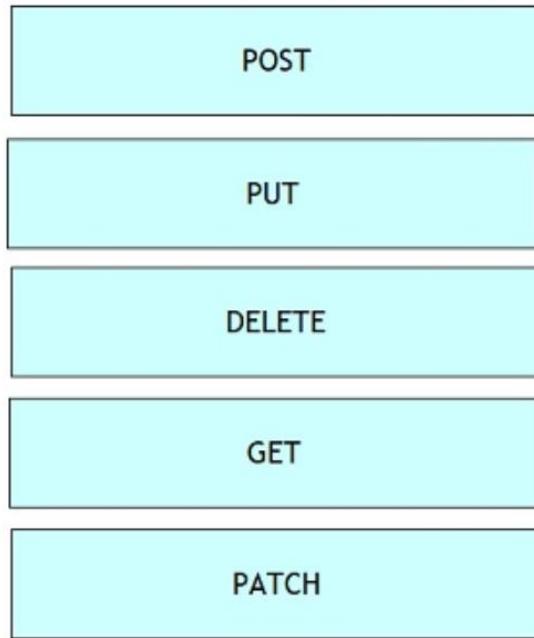
### QUESTION 691

Drag and Drop Question

Drag and drop the HTTP methods used with REST-Based APIs from the left onto the descriptions on the right.

|        |                                                                                          |
|--------|------------------------------------------------------------------------------------------|
| DELETE | creates a resource and returns its URI in the response header                            |
| GET    | creates or replaces a previously modified resource using information in the request body |
| POST   | removes a resource                                                                       |
| PATCH  | retrieves a list of a resource's URIs                                                    |
| PUT    | updates a resource using instructions included in the request body                       |

Answer:



**Explanation:**

The most commonly used HTTP methods POST, GET, PUT, PATCH, DELETE are similar to CURD (create, update, read, delete) operations in the database. Just try to remember below the key Points:

- Create NEW record =>POST
- read=>GET
- If the record exists then update else create a new record=>PUT
- update/modify=>PATCH
- delete=>DELETE

**QUESTION 692**

Which WAN topology is most appropriate for a centrally located server farm with several satellite branches?

- A. star
- B. hub and spoke
- C. point-to-point
- D. full mesh

**Answer:** B

**QUESTION 693**

Which two types of information are held in the mac address table ?

- A. destination ip addresses
- B. protocols
- C. port numbers
- D. mac address
- E. source ip address

**Answer:** CD

**QUESTION 694**

Which three options are benefits of using TACACS+ on a device? (Choose three)

- A. It ensures that user activity is untraceable
- B. It provides a secure accounting facility on the device.
- C. device-administration packets are encrypted in their entirety.
- D. It allows the user to remotely access devices from other vendors.
- E. It allows the users to be authenticated against a remote server.
- F. It supports access-level authorization for commands.

**Answer:** CEF

**QUESTION 695**

What layer of the OSI Model is included in TCP/IP Model's INTERNET layer?

- A. Application
- B. Session
- C. Data Link
- D. Presentation
- E. Network

**Answer:** E

**QUESTION 696**

A security administrator wants to profile endpoints and gain visibility into attempted authentications. Which 802.1x mode allows these actions?

- A. Monitor mode
- B. High-Security mode
- C. Low-impact mode
- D. Closed mode

**Answer:** A

**QUESTION 697**

How to verify SSH connections was secured?

- A. ssh -v 1 -l admin IP
- B. ssh -v 2 -l admin IP
- C. ssh -l admin IP

**Answer:** B

**QUESTION 698**

How many usable host are there per subnet if you have the address of 192.168.10.0 with a

subnet mask of 255.255.255.240?

- A. 4
- B. 8
- C. 16
- D. 14

**Answer:** D

**QUESTION 699**

What interconnection cable can you use when you use a MDI connection?

- A. cut-through
- B. straight-through
- C. crossover
- D. rollover

**Answer:** C

**QUESTION 700**

which command is used to know the duplex speed of serial link?

- A. show line
- B. show interface
- C. show protocol
- D. show run

**Answer:** B

**QUESTION 701**

When troubleshooting client DNS issues, which two tasks must you perform? (Choose two)

- A. Ping a public website IP address.
- B. Ping the DNS Server.
- C. Determine whether a DHCP address has been assigned.
- D. Determine whether the hardware address is correct.
- E. Determine whether the name servers have been configured

**Answer:** BE

**Explanation:**

In order for DNS to work you have to have a name server configured (either statically or dynamically) and you must be able to reach it (which, presumably, could be verified via ping).

**QUESTION 702**

What does traffic shaping do to reduce congestion in a network?

- A. buffers and queues packets
- B. buffers without queuing packets
- C. queues without buffering packets

- D. drops packets

**Answer:** A

**QUESTION 703**

Which NTP type designates a router without an external referee clock as an authoritative time source ?

- A. Client
- B. Server
- C. peer
- D. master

**Answer:** D

**QUESTION 704**

Which statement about SNMPv2 is true?

- A. Its privacy algorithms use MD5 encryption by default.
- B. it requires passwords to be encrypyed
- C. Its authetication and privacy algorithms are enable without default values.
- D. It requires passwords at least eight characters en length.

**Answer:** C

**QUESTION 705**

which type of IP address of ipv6 that also exist in IPv4 but barely used?

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

**Answer:** C

**QUESTION 706**

What are two characteristics of Telnet? (Choose two.)

- A. It sends data in clear text format.
- B. It is no longer supported on Cisco network devices.
- C. It is more secure than SSH.
- D. It requires an enterprise license in order to be implemented.
- E. It requires that the destination device be configured to support Telnet connections.

**Answer:** AE

**QUESTION 707**

Which type of broadcast barely used in IPv4 which also exist in IPv6 like?

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

**Answer:** D

**QUESTION 708**

When troubleshooting ethernet connectivity issues how can you verify that an ip address is known to a router?

- A. Check Whether the ip address is in the routing table
- B. Check Whether an ACL is blocking the ip address
- C. Check Whether the ip address is in the CAM Table
- D. Check Whether the ip address is in the ARP Table

**Answer:** D

**QUESTION 709**

Which command can you enter to verify that a router is synced with a configures time source?

- A. show ntp authenticate
- B. ntp associations
- C. ntp server time
- D. ntp authenticate
- E. show ntp associations

**Answer:** E

**QUESTION 710**

What are the two minimum required components of a DHCP binding? (Choose two.)

- A. a DHCP pool
- B. an exclusion list
- C. a hardware address
- D. an IP address
- E. an ip-helper statement

**Answer:** CD

**QUESTION 711**

Which path does a router choose when it receives a packet with multiple possible paths to the destination over different routing protocols?

- A. the path with both the lowest administrative distance and the highest metric
- B. the path with the lowest administrative distance
- C. the path with the lowest metric

- D. the path with both the lowest administrative distance and lowest metric

**Answer:** B

**QUESTION 712**

Which two statements about firewalls are true ?

- A. They can be used with an intrusion prevention system
- B. They can limit unauthorized user access to protect data
- C. Each wireless access point requires its own firewall
- D. They must be placed only at locations where the private network connects to the internet
- E. They can prevent attacks from the internet only

**Answer:** AB

**QUESTION 713**

Which two statements about data VLANs on access ports are true ? ( Choose two)

- A. They can be configured as trunk ports
- B. Two or more VLANs can be configured on the interface
- C. 802.1Q encapsulation must be configured on the interface
- D. Exactly one VLAN can be configured on the interface.
- E. They can be configured as host ports.

**Answer:** DE

**QUESTION 714**

Where does the configuration reside when a helper address is configured to support DHCP ?

- A. on the switch trunk interface.
- B. on the router closest to the client.
- C. on the router closest to the server.
- D. on every router along the path.

**Answer:** B

**QUESTION 715**

How does NAT overloading provide one-to-many address translation?

- A. It uses a pool of addresses
- B. It converts IPV4 addresses to unused IPv6 Addresses
- C. It assigns a unique TCP/UDP port to each session
- D. It uses virtual MAC Address and Virtual IP Addresses

**Answer:** C

**QUESTION 716**

Which IEEE mechanism is responsible for the authentication of devices when they attempt to

connect to a local network?

- A. 802.1x
- B. 802.11
- C. 802.2x
- D. 802.3x

**Answer:** A

**QUESTION 717**

If router R1 knows a static route to a destination network and then learns about the same destination network through a dynamic routing protocol, how does R1 respond?

- A. It refuses to advertise the dynamic route to other neighbors
- B. It sends a withdrawal signal to the neighboring router
- C. It disables the routing protocol
- D. It prefers the static route

**Answer:** D

**Explanation:**

By default the administrative distance of a static route is 1, meaning it will be preferred over all dynamic routing protocols. If you want to have the dynamic routing protocol used and have the static route be used only as a backup, you need to increase the AD of the static route so that it is higher than the dynamic routing protocol.

**QUESTION 718**

Which two statements about floating static routes are true? (Choose two)

- A. They are routes to the exact /32 destination address
- B. They are used when a route to the destination network is missing
- C. They have a higher administrative distance than the default static route administrative distance
- D. They are used as back-up routes when the primary route goes down
- E. They are dynamic routes that are learned from a server

**Answer:** CD

**QUESTION 719**

When you enable PortFast on a switch port, the port immediately transitions to which state?

- A. Blocking
- B. Forwarding
- C. Learning
- D. Listening

**Answer:** B

**QUESTION 720**

When is the most appropriate time to escalate an issue that you are troubleshooting?

- A. when you lack proper resources to resolve the issue
- B. when you have gathered all available information about the issue
- C. when you have been unable to resolve the issue after 30 minutes
- D. when a more urgent issue that requires your intervention is detected

**Answer:** B

**QUESTION 721**

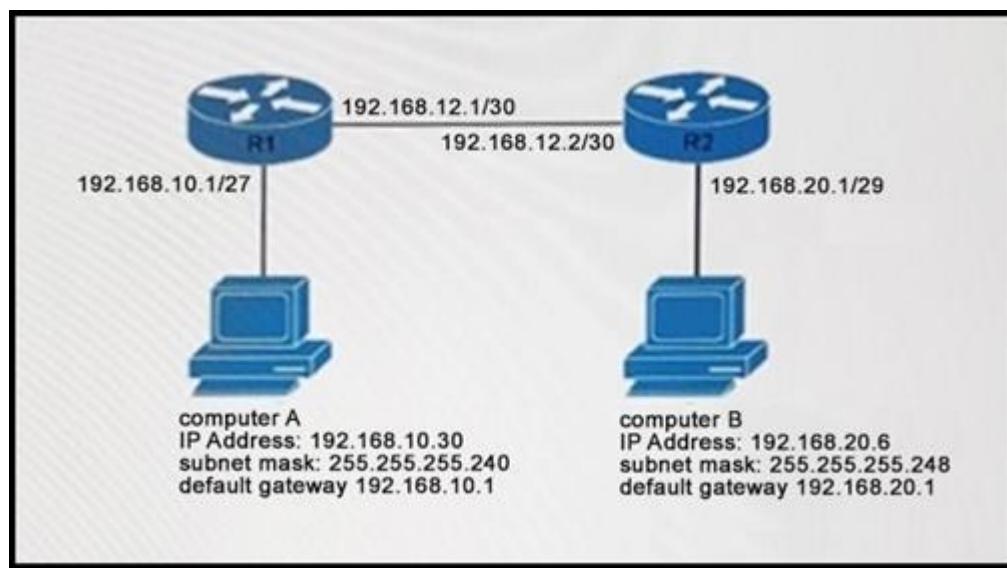
What is the command to see assigned address in DHCP?

- A. show ip DHCP statistic
- B. show ip dhcp pool
- C. show ip dhcp binding
- D. show ip dhcp database

**Answer:** C

**QUESTION 722**

Refer to the exhibit, you determine that Computer A cannot ping Computer Which reason for the problem is most likely true?



- A. The Subnet mask for Computer A is incorrect
- B. The default gateway address for Computer A is incorrect
- C. The subnet mask for computer B is incorrect.
- D. The default gateway address for computer B is incorrect

**Answer:** A

**QUESTION 723**

For which two protocols can PortFast alleviate potential host startup issues? (Choose two.)

- A. DHCP
- B. DNS
- C. OSPF
- D. RIP
- E. CDP

**Answer:** AB

**QUESTION 724**

Which three encapsulation layers in the OSI model are combined into the TCP/IP application layer? (Choose three)

- A. Session
- B. transport
- C. presentation
- D. application
- E. data-link
- F. network

**Answer:** ACD

**QUESTION 725**

When is the most appropriate time to escalate an issue that you troubleshooting?

- A. When you lack the proper to resolve the issue.
- B. When a more urgent issue that requires your intervention is detected
- C. When you have gathered all information about an issue
- D. When you have been unable to resolve the issue after 30 min

**Answer:** C

**QUESTION 726**

Which two command can you enter to display the current time sources statistics on devices ? (Choose two)

- A. Show ntp associations.
- B. Show clock details
- C. Show clock.
- D. Show time.
- E. Show ntp status

**Answer:** AE

**QUESTION 727**

Which command can you enter in a network switch configuration so that learned mac addresses are saved in configuration as they connect ?

- A. Switch(config-if)#Switch port-security

- B. Switch(config-if)#Switch port-security Mac-address sticky
- C. Switch(config-if)#Switch port-security maximum 10
- D. Switch(config-if)#Switch mode access

**Answer:** B

**QUESTION 728**

Which statement about snmpv2 is true?

- A. it requires password at least eight characters in length
- B. it requires passwords to be encrypted
- C. its privacy algorithms use md5 encryption by default
- D. its authentic and privacy algorithms are enabled without default values

**Answer:** D

**QUESTION 729**

Which two steps must you perform to enable router-on-a-stick on a switch? (Choose two.)

- A. Configure an IP route to the VLAN destination network.
- B. Connect the Router to a trunk port.
- C. Configure full duplex.
- D. Configure the subinterface number exactly the same as the matching VLAN.
- E. Assign the access port to a VLAN.

**Answer:** BE

**QUESTION 730**

Which feature can you use to restrict SNMP queries to a specific OID tree?

- A. server group
- B. a community
- C. a view record
- D. an access group

**Answer:** C

**QUESTION 731**

In which two circumstances are private IPv4 addresses appropriate? (Choose two)

- A. on internal hosts that stream data solely to external resources
- B. on hosts that communicates only with other internal hosts
- C. on the public-facing interface of a firewall
- D. on hosts that require minimal access to external resources
- E. to allow hosts inside an enterprise to communicate in both directions with hosts outside the enterprise

**Answer:** BD

**QUESTION 732**

Which NTP command configures the local device as an NTP reference clock source?

- A. ntp peer
- B. ntp broadcast
- C. ntp master
- D. ntp server

**Answer:** C

**QUESTION 733**

Which statement about static routes is true?

- A. The source interface can be configured to make routing decisions.
- B. A subnet mask is entered for the next-hop address.
- C. The subnet mask is 255.255.255.0 by default
- D. The exit interface can be specified to indicate where the packets will be routed.

**Answer:** D

**Explanation:**

Static routing can be used to define an exit point from a router when no other routes are available or necessary. This is called a default route.

**QUESTION 734**

In which two situations should you use out-of-band management?

- A. when a network device fails to forward packets
- B. when you require ROMMON access
- C. when management applications need concurrent access to the device
- D. when you require administrator access from multiple locations
- E. when the control plane fails to respond

**Answer:** AB

**QUESTION 735**

What happens when an 802.11a node broadcasts within the range of an 802.11g access point?

- A. The access point transmits, but the node is unable to receive.
- B. A connection occurs
- C. Both the node and the access point are unable to transmit.
- D. The node transmits, but the access point is unable to receive.

**Answer:** D

**QUESTION 736**

Which value indicate the distance from the ntp authoritative time source?

- A. priority
- B. location

- C. layer
- D. stratum

**Answer:** D

**QUESTION 737**

Which NTP type designates a router without an external reference clock as an authoritative time source?

- A. server
- B. peer
- C. master
- D. client

**Answer:** C

**QUESTION 738**

Which 3 feature are represented by A letter in AAA? (Choose Three)

- A. authorization
- B. accounting
- C. authentication
- D. accountability
- E. accessibility
- F. authority

**Answer:** ABC

**QUESTION 739**

Which component of a routing table entry represents the subnet mask?

- A. routing protocol code
- B. prefix
- C. metric
- D. network mask

**Answer:** D

**QUESTION 740**

Which two tasks can help you gather relevant facts when you troubleshoot a network problem? (Choose two)

- A. Eliminate known issues first
- B. Define the problem in terms of symptoms and causes
- C. Ask questions of the users who are affected by the problem
- D. Change one setting or component and then analyze the result
- E. Collect technical data from network management systems and logging servers

**Answer:** BE

**QUESTION 741**

Which NTP command configures the local devices as an NTP reference clock source?

- A. NTP Peer
- B. NTP Broadcast
- C. NTP Master
- D. NTP Server

**Answer:** C

**QUESTION 742**

Which two statements about wireless LAN controllers are true? (Choose two.)

- A. They can simplify the management and deployment of wireless LANs.
- B. They rely on external firewalls for WLAN security.
- C. They are best suited to smaller wireless networks.
- D. They must be configured through a GUI over HTTP or HTTPS.
- E. They can manage mobility policies at a systemwide level.

**Answer:** AE

**QUESTION 743**

Which command is necessary to permit SSH or Telnet access to a Cisco switch that is otherwise configured for these vty line protocols?

- A. transport type all
- B. transport output all
- C. transport preferred all
- D. transport input all

**Answer:** D

**QUESTION 744**

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

- A. It can run on a UNIX server.
- B. It authenticates against the user database on the local device.
- C. It is more secure than AAA authentication.
- D. It is enabled on Cisco routers by default.
- E. It uses a managed database.

**Answer:** AE

**QUESTION 745**

Which two statements correctly describe RADIUS? (Choose two)

- A. It separates authentication, authorization, and accounting functions

- B. It uses TCP as its transport protocol
- C. It encrypts only the password
- D. It combines authentication and authorization
- E. I can authorize specific router commands

**Answer:** CD

**QUESTION 746**

Which API use HTTP messages to transfer data to applications residing on different host ?

- A. OpFlex
- B. REST
- C. OpenStack
- D. OpenFlow

**Answer:** B

**QUESTION 747**

Which command can you enter on a Cisco IOS device to enable a scheduled algorithm that directs lookup calls to multiple DNS hosts?

- A. ip domain round-robin
- B. ip name-server 192.168.10.14 192.168.10.15
- C. ip domain lookup
- D. ip domain list

**Answer:** B

**QUESTION 748**

Which two services can be provided by a wireless controller? (Choose two)

- A. issuing IP addresses to wired devices
- B. mitigating threats from the internet
- C. providing authentication services to users
- D. managing interference in a dense network
- E. Layer 3 routing between wired and wireless devices

**Answer:** CD

**QUESTION 749**

Which two statements correctly describe distance-vector routing protocols? (Choose two)

- A. they specify the next hop toward the destination subnet
- B. they require quick network convergence to support normal operations
- C. they generate a complete topology of the network
- D. they update other devices on the network when one device detects a topology change
- E. they use a variety of metrics to identify the distance to a destination network.

**Answer:** AE

**QUESTION 750**

Which type of access list compares source and destination IP address?

- A. standard
- B. extended
- C. IP named
- D. reflexive

**Answer:** B

**QUESTION 751**

Which two descriptions of TACACS+ are true? (Choose two.)

- A. It encrypts only the password.
- B. It uses UDP as its transport protocol.
- C. It separates authentication, authorization, and accounting functions.
- D. It can authorize specific router commands.
- E. It combines authentication and authorization

**Answer:** CD

**QUESTION 752**

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.

**Answer:** BD

**QUESTION 753**

When a router undergoes the exchange protocol within OSPF, in what order does it pass through each state?

- A. exstart state > loading state > exchange state > full state
- B. exstart state > exchange state > loading state > full state
- C. exstart state > full state > loading state > exchange state
- D. loading state > exchange state > full state > exstart state

**Answer:** B

**QUESTION 754**

A network administrator creates a layer 3 EtherChannel, bundling four interfaces into channel group 1. On what interface is the IP address configured?

- A. the port-channel 1 interface
- B. the highest number member interface
- C. all member interfaces
- D. the lowest number member interface

**Answer:** A

#### QUESTION 755

Refer to the exhibit. If the router Cisco returns the given output and has not had its router ID set manually, what value will OSPF use as its router ID?

| Interface       | IP-Address  | OK? Method Status                    | Protocol |
|-----------------|-------------|--------------------------------------|----------|
| FastEthernet0/0 | 192.168.1.1 | YES manual up                        | up       |
| FastEthernet0/1 | 172.16.1.1  | YES manual up                        | up       |
| Loopback0       | 1.1.1.1     | YES manual up                        | up       |
| Loopback1       | 2.2.2.2     | YES manual up                        | up       |
| Vlan1           | unassigned  | YES unset administratively down down |          |

- A. 192.168.1.1
- B. 172.16.1.1
- C. 1.1.1.1
- D. 2.2.2.2

**Answer:** D

#### QUESTION 756

What command sequence will configure a router to run OSPF and add network 10.1.1.0 /24 to area 0?

- A. router ospf area 0  
network 10.1.1.0 255.255.255.0 area 0
- B. router ospf  
network 10.1.1.0 0.0.0.255
- C. router ospf 1  
network 10.1.1.0 0.0.0.255 area 0
- D. router ospf area 0  
network 10.1.1.0 0.0.0.255 area 0
- E. router ospf  
network 10.1.1.0 255.255.255.0 area 0
- F. router ospf 1  
network 10.1.1.0 0.0.0.255

**Answer:** C

**QUESTION 757**

What OSPF command, when configured, will include all interfaces into area 0?

- A. network 0.0.0.0 255.255.255.255 area 0
- B. network 0.0.0.0 0.0.0.0 area 0
- C. network 255.255.255.255 0.0.0.0 area 0
- D. network all-interfaces area 0

**Answer:** A

**QUESTION 758**

Which statement describes the process ID that is used to run OSPF on a router?

- A. It is globally significant and is used to represent the AS number.
- B. It is locally significant and is used to identify an instance of the OSPF database.
- C. It is globally significant and is used to identify OSPF stub areas.
- D. It is locally significant and must be the same throughout an area.

**Answer:** B

**QUESTION 759**

Which three are the components of SNMP? (Choose three)

- A. MIB
- B. SNMP Manager
- C. SysLog Server
- D. SNMP Agent
- E. Set

**Answer:** ABD

**QUESTION 760**

What is the alert message generated by SNMP agents called ?

- A. TRAP
- B. INFORM
- C. GET
- D. SET

**Answer:** AB

**Explanation:**

A TRAP is a SNMP message sent from one application to another (which is typically on a remote host). Their purpose is merely to notify the other application that something has happened, has been noticed, etc. The big problem with TRAPs is that they're unacknowledged so you don't actually know if the remote application received your oh-so-important message to it. SNMPv2 PDUs fixed this by introducing the notion of an INFORM, which is nothing more than an acknowledged TRAP.

**QUESTION 761**

Which three features are added in SNMPv3 over SNMPv2?

- A. Message Integrity
- B. Compression
- C. Authentication
- D. Encryption
- E. Error Detection

**Answer:** ACD

**QUESTION 762**

Which additional configuration step is necessary in order to connect to an access point that has SSID broadcasting disabled?

- A. Set the SSID value in the client software to public.
- B. Configure open authentication on the AP and the client.
- C. Set the SSID value on the client to the SSID configured on the AP.
- D. Configured MAC address filtering to permit the client to connect to the AP.

**Answer:** C

**QUESTION 763**

What are two characteristics of SSH? (Choose two.)

- A. most common remote-access method
- B. unsecured
- C. encrypted
- D. uses port 22
- E. operates at the transport layer

**Answer:** CD

**QUESTION 764**

As a CCNA candidate, you must have a firm understanding of the IPv6 address structure. Refer to IPv6 address, could you tell me how many bits are included in each field?

- A. 24
- B. 4
- C. 3
- D. 16

**Answer:** D

**QUESTION 765**

Which name describes an IPv6 host-enable tunneling technique that uses IPv4 UDP, does not require dedicated gateway tunnels, and can pass through existing IPv4 NAT gateways?

- A. dual stack

- B. dynamic
- C. Teredo
- D. Manual 6to4

**Answer:** C

**QUESTION 766**

Assuming a subnet mask of 255.255.248.0, three of the following addresses are valid host addresses. Which are these addresses? (Choose three.)

- A. 172.16.9.0
- B. 172.16.8.0
- C. 172.16.31.0
- D. 172.16.20.0

**Answer:** ACD

**QUESTION 767**

In which situation would the use of a static route be appropriate?

- A. To configure a route to the first Layer 3 device on the network segment.
- B. To configure a route from an ISP router into a corporate network.
- C. To configure a route when the administrative distance of the current routing protocol is too low.
- D. To reach a network is more than 15 hops away.
- E. To provide access to the Internet for enterprise hosts.

**Answer:** B

**QUESTION 768**

Which of the following services use UDP? (Choose three.)

- A. Telnet
- B. TFTP
- C. SNMP
- D. DNS
- E. SMTP
- F. HTTP

**Answer:** BCD

**QUESTION 769**

If a router has four interfaces and each interface is connected to four switches, how many broadcast domains are present on the router?

- A. 1
- B. 2
- C. 4
- D. 8

**Answer:** C

**QUESTION 770**

What is the correct routing match to reach 172.16.1.5/32?

- A. 172.16.1.0/26
- B. 172.16.1.0/25
- C. 172.16.1.0/24
- D. the default route

**Answer:** A

**QUESTION 771**

Which technology allows a large number of private IP addresses to be represented by a smaller number of public IP addresses?

- A. NAT
- B. NTP
- C. RFC 1631
- D. RFC 1918

**Answer:** A

**QUESTION 772**

What is the effect of the overload keyword in a static NAT translation configuration?

- A. It enables port address translation.
- B. It enables the use of a secondary pool of IP addresses when the first pool is depleted.
- C. It enables the inside interface to receive traffic.
- D. It enables the outside interface to forward traffic.

**Answer:** A

**QUESTION 773**

Which technology can enable multiple VLANs to communicate with one another?

- A. inter-VLAN routing using a Layer 3 switch
- B. inter-VLAN routing using a Layer 2 switch
- C. intra-VLAN routing using router on a stick
- D. intra-VLAN routing using a Layer 3 switch

**Answer:** A

**QUESTION 774**

Which command can you enter to set the default route for all traffic to an interface?

- A. router(config)#ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1

- B. router(config)#ip route 0.0.0.0 255.255.255.255 GigabitEthernet0/1
- C. router(config-router)#default-information originate
- D. router(config-router)#default-information originate always

**Answer:** A

**QUESTION 775**

Which two types of NAT addresses are used in a Cisco NAT device? (Choose two.)

- A. inside local
- B. inside global
- C. inside private
- D. outside private
- E. external global
- F. external local

**Answer:** AB

**QUESTION 776**

What is the danger of the permit any entry in a NAT access list?

- A. It can lead to overloaded resources on the router.
- B. It can cause too many addresses to be assigned to the same interface.
- C. It can disable the overload command.
- D. It prevents the correct translation of IP addresses on the inside network.

**Answer:** A

**QUESTION 777**

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

```
CiscoSwitch-MDF-1#configure terminal
CiscoSwitch-MDF-1#interface VLAN 1
CiscoSwitch-MDF-1(config-if)#ip address 192.168.2.2 255.255.255.0
CiscoSwitch-MDF-1(config-if)#end
```

- A. It configures an inactive switch virtual interface.
- B. It configures an active management interface.
- C. It configures the native VLAN.
- D. It configures the default VLAN.

**Answer:** A

**QUESTION 778**

Which command can you enter to view the ports that are assigned to VLAN 20?

- A. Switch#show vlan id 20
- B. Switch#show ip interface brief
- C. Switch#show interface vlan 20
- D. Switch#show ip interface vlan 20

**Answer:** A

**QUESTION 779**

If primary and secondary root switches with priority 16384 both experience catastrophic losses, which tertiary switch can take over?

- A. a switch with priority 20480
- B. a switch with priority 8192
- C. a switch with priority 4096
- D. a switch with priority 12288

**Answer:** A

**QUESTION 780**

Which two features can dynamically assign IPv6 addresses? (Choose two.)

- A. IPv6 stateless autoconfiguration
- B. DHCP
- C. NHRP
- D. IPv6 stateful autoconfiguration
- E. ISATAP tunneling

**Answer:** AD

**QUESTION 781**

What is the default port-security behavior on a trunk link?

- A. It causes a network loop when a violation occurs.
- B. It disables the native VLAN configuration as soon as port security is enabled.
- C. It places the port in the err-disabled state if it learns more than one MAC address.
- D. It places the port in the err-disabled slate after 10 MAC addresses are statically configured.

**Answer:** B

**QUESTION 782**

Which command can you enter to display the hits counter for NAT traffic?

- A. show ip nat statistics
- B. debug ip nat
- C. show ip debug nat
- D. clear ip nat statistics

**Answer:** A

**QUESTION 783**

Which two statements about IPv6 router advertisement messages are true? (Choose two.)

- A. They use ICMPv6 type 134.
- B. The advertised prefix length must be 64 bits.
- C. The advertised prefix length must be 48 bits.
- D. They are sourced from the configured IPv6 interface address.
- E. Their destination is always the link-local address of the neighboring node.

**Answer:** AB

**QUESTION 784**

Which three statements about IPv6 prefixes are true? (Choose three.)

- A. FF00:/8 is used for IPv6 multicast.
- B. FE80::/10 is used for link-local unicast.
- C. FC00::/7 is used in private networks.
- D. 2001::1/127 is used for loopback addresses.
- E. FE80::/8 is used for link-local unicast.
- F. FEC0::/10 is used for IPv6 broadcast.

**Answer:** ABC

**QUESTION 785**

After you configure the Loopback0 interface, which command can you enter to verify the status of the interface and determine whether fast switching is enabled?

- A. Router#show ip interface loopback 0
- B. Router#show run
- C. Router#show interface loopback 0
- D. Router#show ip interface brief

**Answer:** A

**QUESTION 786**

Which three statements about link-state routing are true? (Choose three.)

- A. Routes are updated when a change in topology occurs.
- B. Updates are sent to a multicast address by default.
- C. OSPF is a link-state protocol.
- D. Updates are sent to a broadcast address.
- E. RIP is a link-state protocol.
- F. It uses split horizon.

**Answer:** ABC

**QUESTION 787**

Which NAT function can map multiple inside addresses to a single outside address?

- A. PAT
- B. SFTP
- C. RARP
- D. ARP
- E. TFTP

**Answer:** A

**QUESTION 788**

What is the first step in the NAT configuration process?

- A. Define inside and outside interfaces.
- B. Define public and private IP addresses.
- C. Define IP address pools.
- D. Define global and local interfaces.

**Answer:** A

**QUESTION 789**

Which version of SNMP first allowed user-based access?

- A. SNMPv3 with RBAC
- B. SNMPv3
- C. SNMPv1
- D. SNMPv2

**Answer:** B

**QUESTION 790**

Which option is the benefit of implementing an intelligent DNS for a cloud computing solution?

- A. It reduces the need for a backup data center.
- B. It can redirect user requests to locations that are using fewer network resources.
- C. It enables the ISP to maintain DNS records automatically.
- D. It eliminates the need for a GSS.

**Answer:** B

**QUESTION 791**

Which protocol supports sharing the VLAN configuration between two or more switches?

- A. multicast
- B. STP
- C. VTP
- D. split-horizon

**Answer:** C

**QUESTION 792**

What is the default VLAN on an access port?

- A. 0
- B. 1
- C. 10
- D. 1024

**Answer:** B

**QUESTION 793**

Which statement about QoS default behavior is true?

- A. Ports are untrusted by default.
- B. VoIP traffic is passed without being tagged.
- C. Video traffic is passed with a well-known DSCP value of 46.
- D. Packets are classified internally with an environment.
- E. Packets that arrive with a tag are untagged at the edge of an administrative domain.

**Answer:** E

**QUESTION 794**

Which statement about slow inter VLAN forwarding is true?

- A. The VLAN is experiencing slowness in the point-to-point collisionless connection.
- B. The VLANs are experiencing slowness because multiple devices are connected to the same hub.
- C. The local VLAN is working normally, but traffic to the alternate VLAN is forwarded slower than expected.
- D. The entire VLAN is experiencing slowness.
- E. The VLANs are experiencing slowness due to a duplex mismatch.

**Answer:** E

**QUESTION 795**

Which technology supports the stateless assignment of IPv6 addresses? (Choose two)

- A. DNS
- B. DHCPv6
- C. DHCP
- D. autoconfiguration

**Answer:** BD

**QUESTION 796**

Which statement about the inside interface configuration in a NAT deployment is true?

- A. It is defined globally
- B. It identifies the location of source addresses for outgoing packets to be translated using access or route maps.
- C. It must be configured if static NAT is used
- D. It identifies the public IP address that traffic will use to reach the internet.

**Answer:** B

**Explanation:**

This module describes how to configure Network Address Translation (NAT) for IP address conservation and how to configure inside and outside source addresses. This module also provides information about the benefits of configuring NAT for IP address conservation. NAT enables private IP internetworks that use nonregistered IP addresses to connect to the Internet. NAT operates on a device, usually connecting two networks, and translates the private (not globally unique) addresses in the internal network into legal addresses before packets are forwarded onto another network. NAT can be configured to advertise to the outside world only one address for the entire network. This ability provides additional security by effectively hiding the entire internal network behind that one address. NAT is also used at the enterprise edge to allow internal users access to the Internet and to allow Internet access to internal devices such as mail servers.

#### **QUESTION 797**

Which NAT type is used to translate a single inside address to a single outside address?

- A. dynamic NAT
- B. NAT overload
- C. PAT
- D. static NAT

**Answer:** D

**Explanation:**

Network address translation (NAT) is the process of modifying IP address information in IP packet headers while in transit across a traffic routing device.

There are two different types of NAT:

NAT  
PAT

#### **QUESTION 798**

What is the default lease time for a DHCP binding?

- A. 24 hours
- B. 12 hours
- C. 48 hours
- D. 36 hours

**Answer:** A

**Explanation:**

By default, each IP address assigned by a DHCP Server comes with a one- day lease, which is the amount of time that the address is valid. To change the lease value for an IP address, use the following command in DHCP pool configuration mode:

#### **QUESTION 799**

Which RFC was created to alleviate the depletion of IPv4 public addresses?

- A. RFC 4193
- B. RFC 1519
- C. RFC 1518
- D. RFC 1918

**Answer:** D

**QUESTION 800**

What are three characteristics of the TCP protocol? (Choose three.)

- A. It uses a single SYN-ACK message to establish a connection.
- B. The connection is established before data is transmitted.
- C. It ensures that all data is transmitted and received by the remote device.
- D. It supports significantly higher transmission speeds than UDP.
- E. It requires applications to determine when data packets must be retransmitted.
- F. It uses separate SYN and ACK messages to establish a connection.

**Answer:** BCF

**QUESTION 801**

Which statement about RADIUS security is true?

- A. It supports EAP authentication for connecting to wireless networks.
- B. It provides encrypted multiprotocol support.
- C. Device-administration packets are encrypted in their entirety.
- D. It ensures that user activity is fully anonymous.

**Answer:** A

**QUESTION 802**

Which two statements about IPv4 multicast traffic are true? (Choose two.)

- A. It burdens the source host without affecting remote hosts.
- B. It uses a minimum amount of network bandwidth.
- C. It is bandwidth-intensive.
- D. It simultaneously delivers multiple streams of data.
- E. It is the most efficient way to deliver data to multiple receivers.

**Answer:** BE

**QUESTION 803**

Which type of device can be replaced by the use of subinterfaces for VLAN routing?

- A. Layer 2 bridge
- B. Layer 2 switch
- C. Layer 3 switch

D. router

**Answer:** C

**QUESTION 804**

Which command can you enter to display duplicate IP addresses that the DHCP server assigns?

- A. show ip dhcp conflict 10.0.2.12
- B. show ip dhcp database 10.0.2.12
- C. show ip dhcp server statistics
- D. show ip dhcp binding 10.0.2.12

**Answer:** A

**QUESTION 805**

What is the subnet address of 192.168.1.42 255.255.255.248?

- A. 192.168.1.16/28
- B. 192.168.1.32/27
- C. 192.168.1.40/29
- D. 192.168.1.8/29
- E. 192.168.1.48/29

**Answer:** C

**QUESTION 806**

Which command can you enter to configure an IPv6 floating static route?

- A. router(config)#ipv6 route FE80:0202::/32 serial 0/1 1
- B. router (config)#ipv6 route ::/0 serial 0/1
- C. router(config)#ipv6 route static resolve default
- D. router(config)#ipv6 route FE80.0202::/32serial 0/1 201

**Answer:** D

**QUESTION 807**

Which sequence begins a unique local IPv6 address in binary notation?

- A. 1111110
- B. 1111111
- C. 00000000
- D. 1111100

**Answer:** D

**Explanation:**

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 808**

Which two statements about fiber cable are true? (Choose two)

- A. Single-mode fiber supports SC and LC connectors only.
- B. Multimode cable supports speeds between 100 Mbps and 9.92 Gbps.
- C. Single-mode cable is most appropriate for installations longer than 10 km.
- D. Fiber cable is relatively inexpensive and supports a higher data rate than coaxial cable.
- E. Multimode cable supports speeds between 100 Mbps and 100 Gbps.

**Answer:** DE

**QUESTION 809**

Which information is used to install the best route to a destination in IP routing table?

- A. the tunnel ID
- B. the prefix length
- C. the interface number
- D. the autonomous system

**Answer:** B

**QUESTION 810**

An administrator has connected devices to a switch and, for security reasons, wants the dynamically learned MAC addresses from the address table added to the running configuration. Which action must be taken to accomplish this?

- A. Use the no switchport port-security command to allow MAC addresses to be added to the configuration.
- B. Enable port security and use the keyword sticky.
- C. Set the switchport mode to trunk and save the running configuration.
- D. Use the switchport protected command to have the MAC addresses added to the configuration.

**Answer:** B

**QUESTION 811**

Which two of these functions do routers perform on packets? (Choose two.)

- A. update the Layer 3 headers of outbound packets so that the packets are properly directed to valid next hops
- B. update the Layer 2 headers of outbound packets with the MAC addresses of the next hops
- C. examine the Layer 3 headers of inbound packets and use that information to determine the complete paths along which the packets will be routed to their ultimate destinations
- D. examine the Layer 3 headers of inbound packets and use that information to determine the next hops for the packets
- E. examine the Layer 2 headers of inbound packets and use that information to determine the next hops for the packets

- F. update the Layer 3 headers of outbound packets so that the packets are properly directed to their ultimate destinations

**Answer:** BD

**QUESTION 812**

Which two options will help to solve the problem of a network that is suffering a broadcast storm?  
(Choose two.)

- A. a Layer 3 switch
- B. a hub
- C. a bridge
- D. an access point
- E. a router

**Answer:** AE

**QUESTION 913**

A switch has 48 ports and 4 VLANs. How many collision and broadcast domains exist on the switch (collision, broadcast)?

- A. 4,48
- B. 48,4
- C. 48,1
- D. 4,1
- E. 1,48

**Answer:** B

**QUESTION 814**

Which statement describes the effect of the overload keyword in the ip nat inside source list 90 interface ethernet 0/0 overload command?

- A. Addresses that match access listinsideare translated to the IP address of the Ethernet 0/0 interface.
- B. Hosts that match access listinsideare translated to an address in the Ethernet 0/0 network.
- C. Hosts on the Ethernet 0/0 LAN are translated to the address pool in access list90.
- D. Addresses that match access list90are translated through PAT to the IP address of the Ethernet 0/0 interface.

**Answer:** D

**QUESTION 815**

How many host addresses are available on the network 192.168.1.0 subnet 255.255.255.240 ?

- A. 6
- B. 8
- C. 14
- D. 16

**Answer:** C

**QUESTION 816**

Which two statements are true for multicast MAC address directions?

- A. 01:00:5E:xx:xx:xx
- B. one to one
- C. 01 00 xx xxxxxxxx
- D. 02 xx xxxxxxxx
- E. one to many

**Answer:** AE

**Explanation:**

The Internet authorities have reserved the multicast address range of 01:00:5E:00:00:00 to 01:00:5E:7F:FF:FF for Ethernet and Fiber Distributed Data Interface (FDDI) media access control (MAC) addresses.

**QUESTION 817**

Which subnet address is for the IP address 172.19.20.23/28?

- A. 172.19.20.20
- B. 172.19.20.0
- C. 172.19.20.32
- D. 172.19.20.15
- E. 172.19.20.16

**Answer:** E

**QUESTION 818**

The command ip route 192.168.100.160 255.255.255.224 192.168.10.2 was issued on a router. No routing protocols or other static routes are configured on the router. Which statement is true about this command?

- A. The interface with IP address 192.168.10.2 is on this router.
- B. The command sets a gateway of last resort for the router.
- C. Packets that are destined for host 192.168.100.160 will be sent to 192.168.10.2.
- D. The command creates a static route for all IP traffic with the source address 192.168.100.160.

**Answer:** C

**QUESTION 819**

Which feature can validate address requests and filter out invalid messages?

- A. IP Source Guard
- B. port security
- C. DHCP snooping
- D. dynamic ARP inspection

**Answer:** C

**QUESTION 820**

An administrator is working with the 192.168.4.0 network, which has been subnetted with a /26 mask. Which two addresses can be assigned to hosts within the same subnet? (Choose two.)

- A. 192.168.4.67
- B. 192.168.4.61
- C. 192.168.4.128
- D. 192.168.4.132
- E. 192.168.4.125
- F. 192.168.4.63

**Answer:** AE

**QUESTION 821**

On a live network, which two commands will verify the operational status of router interfaces? (Choose two.)

- A. Router# show ip interface brief
- B. Router# debug interface
- C. Router# show ip protocols
- D. Router# show interfaces
- E. Router# show start

**Answer:** AD

**QUESTION 822**

In which STP state does MAC address learning take place on a PortFast-enabled port?

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

**Answer:** D

**QUESTION 823**

Which command can you enter to assign an interface to the default VLAN?

- A. Switch(config-if)# switchport access vlan 1
- B. Switch(config-if)# switchport trunk native vlan 1
- C. Switch(config-if)# vlan 1
- D. Switch(config)# int vlan 1

**Answer:** A

**QUESTION 824**

Which set of conditions comprises a successful ping attempt between two connected routers configured with IP addresses on the same subnet?

- A. The destination host receives an echo reply from the source host within one second and the source host receives an echo request from the destination host.
- B. The destination host receives an echo request from the source host within one second.
- C. The destination host receives an echo reply from the source host within one second and the source host receives an echo reply from the destination host within two seconds.
- D. The destination host receives an echo request from the source host and the source host receives an echo request from the destination host within one second.
- E. The destination host receives an echo request from the source host and the source host receives an echo reply from the destination host within two seconds.

**Answer:** E

**QUESTION 825**

Which command can you enter to configure an IPv6 static route?

- A. router(config)#ipv6 route FE80:0202::/32 serial 0/1 1
- B. router(config)#ipv6 route FE80:0202::/32 serial 0/1 201
- C. router(config)#ipv6 route ::/0 serial 0/1
- D. router(config)#ipv6 route static resolve default

**Answer:** B

**QUESTION 826**

Which three options are types of slow VLAN connectivity? (Choose three.)

- A. slow broadcast domain connectivity
- B. slow routing domain connectivity
- C. slow default gateway connectivity
- D. slow application domain connectivity
- E. slow collision domain connectivity
- F. slow inter-VLAN connectivity

**Answer:** ADE

**QUESTION 827**

Which two statements about the spanning-tree bridge ID are true? (Choose two.)

- A. It is composed of a 4-bit bridge priority and a 12-bit system ID extension.
- B. The bridge ID is transmitted in the IP header to elect the root bridge.
- C. The system ID extension is a value between 1 and 4095.
- D. It is composed of an 8-bit bridge priority and a 16-bit system ID extension.
- E. The bridge priority must be incremented in blocks of 4096.

**Answer:** AE

**QUESTION 828**

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

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

**Answer:** BCD

**Explanation:**

OSPF implements a two-tier hierarchical routing model that uses a core or backbone tier known as area zero (0). Attached to that backbone via area border routers (ABRs) are a number of secondary tier areas. The hierarchical approach is used to achieve the following:  
Rapid convergence because of link and/or switch failures  
Deterministic traffic recovery  
Scalable and manageable routing hierarchy, reduced routing overhead.

#### QUESTION 829

Which command must you use to test DNS connectivity?

- A. telnet
- B. show hosts
- C. ipconfig
- D. show interfaces

**Answer:** B

#### QUESTION 830

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

**Answer:** BD

#### QUESTION 831

According to security best practices, which two actions must you take to protect an unused switch port? (Choose two.)

- A. Administratively shut down the port.
- B. Configure the port as a trunk port.
- C. Configure the port to automatically come online.
- D. Enable CDP.
- E. Configure the port as an access port on a VLAN other than VLAN 1.

**Answer:** AE

**QUESTION 832**

Which IOS troubleshooting tool should you use to direct system messages to your screen?

- A. log events
- B. terminal monitor
- C. local SPAN
- D. APIC-EM

**Answer:** B

**QUESTION 833**

Which feature or protocol must you enable so that the output of the show interfaces trunk command includes information about native VLAN mismatches?

- A. RSTP
- B. CDP
- C. PortFast
- D. DTP

**Answer:** B

**QUESTION 834**

Which two protocols does the internet layer in the TCP/IP model encapsulate? (Choose two.)

- A. DNS
- B. TCP
- C. SMTP
- D. ARP
- E. ICMP

**Answer:** DE

**QUESTION 835**

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

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

**Answer:** BC

**Explanation:**

VLAN 1 is a system default VLAN, you can use this VLAN but you cannot delete it. By default VLAN 1 is used 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 836

Which two TCP messages use a 32-bit number as part of the initial TCP handshake? (Choose two.)

- A. SYN
- B. RST
- C. SYN-ACK
- D. FIN
- E. ACK

**Answer:** AE

#### QUESTION 837

Which port security violation mode drops traffic from unknown MAC addresses and sends an SNMP trap?

- A. protect
- B. restrict
- C. shutdown
- D. shutdown VLAN

**Answer:** B

#### QUESTION 838

What is the difference between 1000BASE-LX/LH and 1000BASE-ZX interfaces?

- A. 1000BASE-ZX is supported on links up to 1000km, and 1000BASE-LX/LH operates over links up to 70 km.
- B. 1000BASE-LX/LH interoperates with multimode and single-mode fiber, and 1000BASE-ZX needs a conditioning patch cable with a multimode.
- C. 1000BASE-LX/LH is supported on links up to 10km, and 1000BASE-ZX operates over links up to 70 km
- D. 1000BASE-ZX interoperates with dual-rate 100M/1G 10Km SFP over multimode fiber, and 1000BASE-LX/LH supports only single-rate.

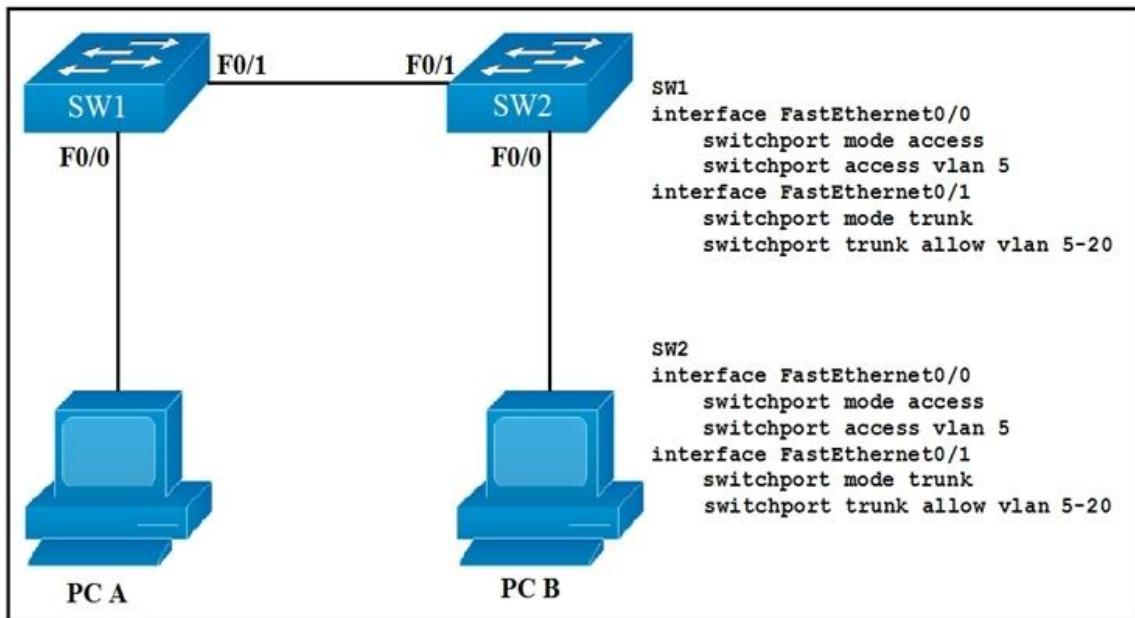
**Answer:** C

**Explanation:**

<https://www.cables-solutions.com/are-there-any-differences-between-lx-lh-and-lxlh.html>

#### QUESTION 839

Refer to the exhibit. Which VLAN ID is associated with the native VLAN?



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

**Answer:** A

#### QUESTION 840

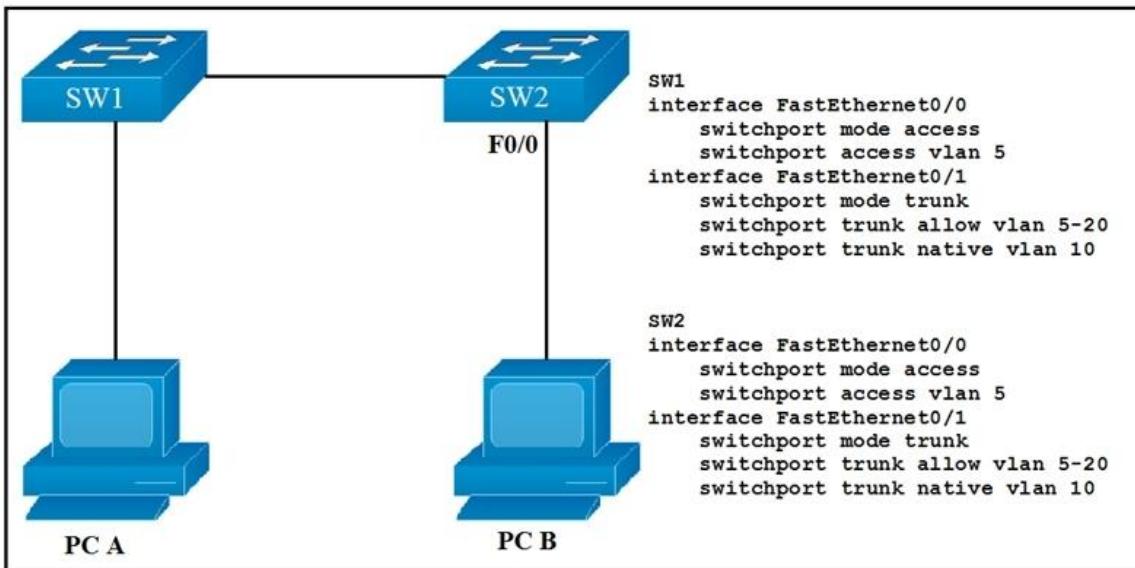
How does a Cisco IP phone handle untagged traffic that it receives from an attached PC?

- 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.

**Answer:** A

#### QUESTION 841

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

**Answer:** A

#### QUESTION 842

Which two statements about DNS lookup operations are true? (Choose two.)

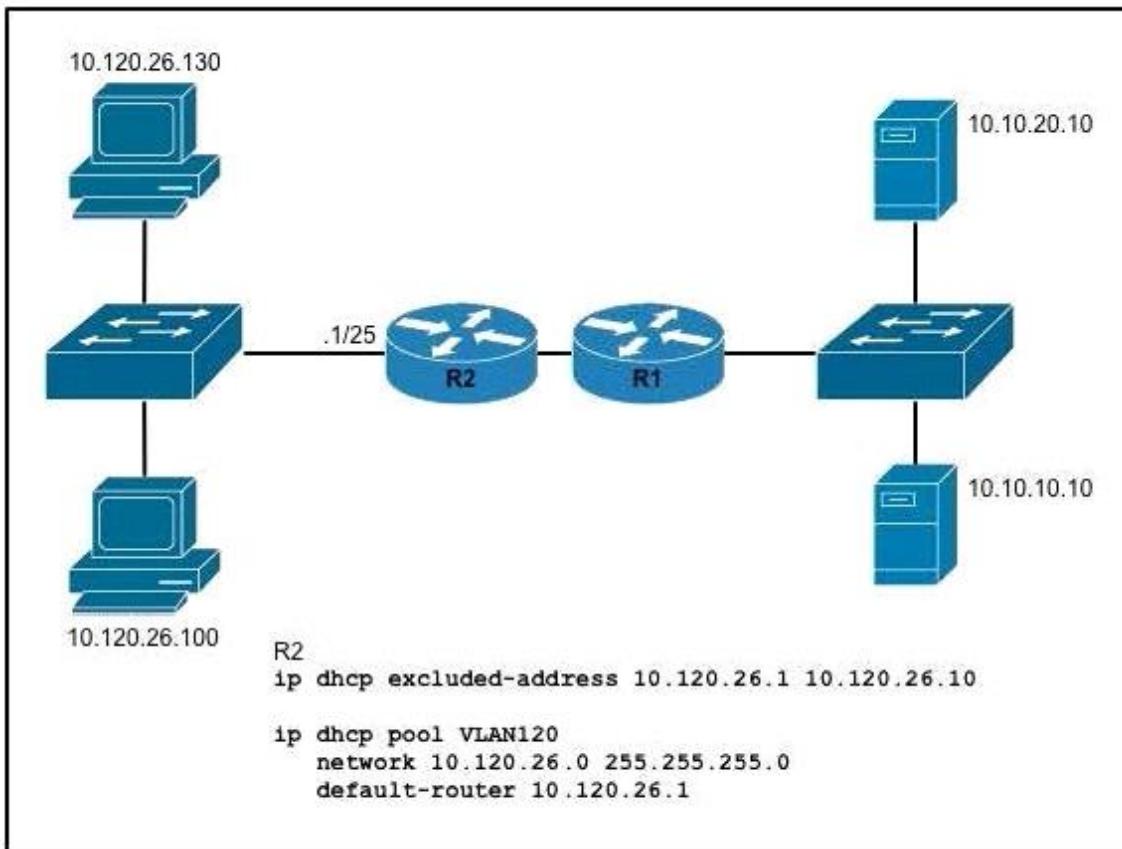
- A. When the primary IP address of the destination is down, the DNS server can forward the client to an alternate IP address.
- B. The client sends a request for IP address to domain name resolution to the DNS server.
- C. The DNS server pings the destination to verify that is available.
- D. They use destination port 53.
- E. The client sends a request for domain name to IP address resolution to the DNS server.

**Answer:** DE

#### QUESTION 843

Refer to the exhibit. Users in your office are complaining that they cannot connect to the servers at a remote site.

When troubleshooting, you find that you can successfully reach the servers from router R2. What is the most likely reason that the other users are experiencing connection failure?



- 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.

**Answer:** D

#### QUESTION 844

What are two common types of copper cable?

- A. unshielded twisted pair
- B. single-mode
- C. shielded twisted pair
- D. OM4
- E. multimode

**Answer:** AC

#### QUESTION 845

Which effect does the switchport trunk vlan 10 command have?

- A. It sets VLAN 10 as the native VLAN on the trunk.
- B. It configures the interface as a trunk port.

- C. It allows traffic from native VLAN 10 on the trunk.
- D. It prevents traffic on VLAN 1 from passing on the trunk.

**Answer:** B

**QUESTION 846**

Which two wireless security stewards use Counter Mode Cipher Block Chaining Message Authentication Code Protocol for encryption and data integrity? (Choose two.)

- A. WPA2
- B. WPA3
- C. Wi-Fi 6
- D. WEP
- E. WPA

**Answer:** AB

**QUESTION 847**

Which layer of the TCP/IP model manages the transmission of binary digits across an Ethernet cable?

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

**Answer:** B

**QUESTION 848**

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

- A. provides common view of entire topology
- B. exchanges routing tables for its own routes with neighbor
- C. calculates feasible path
- D. utilizes event-triggered updates
- E. utilizes frequent periodic updates

**Answer:** AD

**QUESTION 849**

Refer to the exhibit. An engineer is configuring a Layer 3 port-channel interface with LACP. The configuration on the first device is complete, and it is verified that both interfaces have registered the neighbor device in the CDP table.

Which task on the neighbor device enables the new port channel to come up without negotiating the channel?

```
interface g2/0/0
 channel-group 1 mode active
interface g4/0/0
 channel-group 1 mode active
interface Port-channell
 ip address 203.0.113.65 255.255.255.252

%LINEPROTO-5-UPDOWN: Line protocol on Interface Port-channell,
changed state to down
```

- A. Change the EtherChannel mode on the neighboring interfaces to auto.
- B. Configure the IP address of the neighboring device.
- C. Bring up the neighboring interfaces using the no shutdown command.
- D. Modify the static EtherChannel configuration of the device to passive mode.

**Answer:** D

**QUESTION 850**

Which encryption method is used by WPA3?

- A. PSK
- B. TKIP
- C. SAE
- D. AES

**Answer:** D

**Explanation:**

When using WPA3 only, the access point will transmit in the beacon the capability to only accept STA using WPA3 SAE. When using transition mode, the access point will broadcast in the beacon capabilities to accept STA using both WPA2 and WPA3. In this configuration, STA that do not support WPA3 can still connect to the SSID.

**QUESTION 851**

Which technology is a critical component of a cloud-based architecture?

- A. DNS
- B. MPLS
- C. DHCP
- D. IPv6

**Answer:** A

**QUESTION 852**

Which two benefits of implementing a full-mesh WAN topology are true? (Choose two.)

- A. increased latency
- B. redundancy
- C. reduced jitter

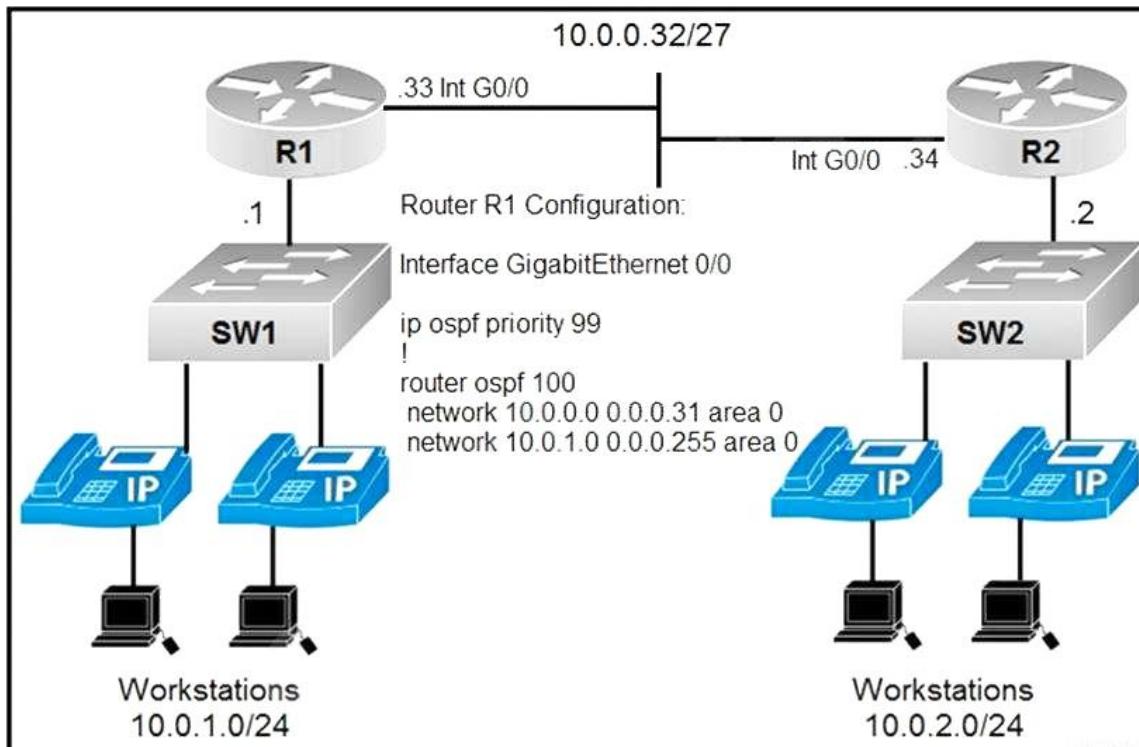
- D. reliability
- E. improved scalability

**Answer:** BD

**QUESTION 853**

Refer to the exhibit. An engineer must configure router R2 so it is elected as the DR on the WAN subnet.

Which command sequence must be configured?



- A. interface gigabitethernet0/0  
ip address 10.0.0.34 255.255.255.248  
ip ospf priority 0
- B. interface gigabitethernet0/0  
ip address 10.0.0.34 255.255.255.224  
ip ospf priority 100
- C. interface gigabitethernet0/0  
ip address 10.0.1.1 255.255.255.0  
ip ospf priority 255
- D. interface gigabitethernet0/0  
ip address 10.0.1.1 255.255.255.224  
ip ospf priority 98

**Answer:** B

**QUESTION 854**

You have the Class B network 172.16.0.0/16 and want to create 16 subnets.

What will the new subnet mask be for the 16 subnets?

- A. /18
- B. /19
- C. /21
- D. /17
- E. /22
- F. /20

**Answer:** F

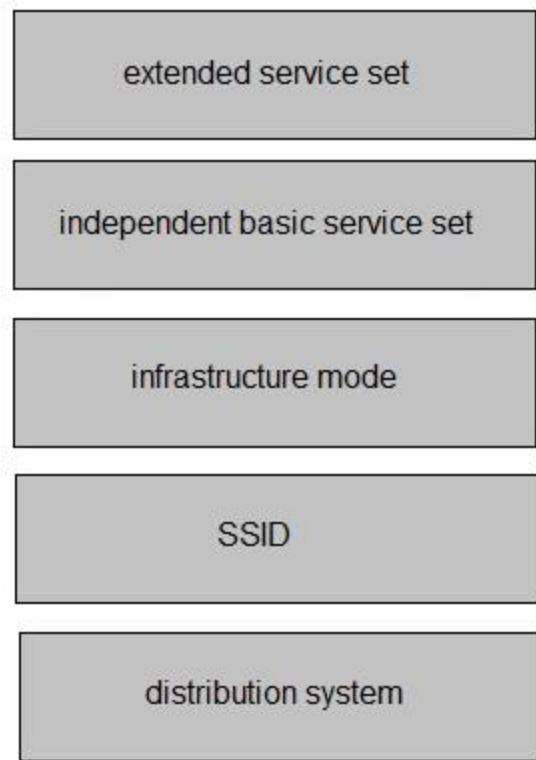
**QUESTION 855**

Drag and Drop Question

Drag and drop the Wi-Fi terms from the left onto the descriptions on the right.

|                               |                                                                                                      |
|-------------------------------|------------------------------------------------------------------------------------------------------|
| distribution system           | Wi-Fi option in which cells from different access points are linked together                         |
| extended service set          | Wi-Fi option that enables two or more clients to communicate directly without a central access point |
| independent basic service set | Wi-Fi option based around one or more access points                                                  |
| infrastructure mode           | alphanumeric text string that identifies a wireless network                                          |
| SSID                          | entire wireless cell of an access point and the linkage to the wired network                         |

**Answer:**



**Explanation:**

<https://networklessons.com/cisco/ccna-200-301/wireless-lan-802-11-service-sets>

**QUESTION 856**

Which of the following protocols are used to auto negotiate trunk formation between two switches?

- A. CDP
- B. VTP
- C. DTP
- D. STP

**Answer:** C

**QUESTION 857**

Refer to the exhibit. How many objects are present in the given JSON-encoded data?

```
{
 "aaaUser": {
 "attributes": {
 "pwd": "password1",
 "firstName": "Abraham",
 "lastName": "Lincoln",
 "phone": "5555551212",
 "email": "test@cisco.com"
 },
 "children": [
 "aaaUserDomain": {
 "attributes": {
 "name": "ExampleCisco"
 },
 "children": [{
 "aaaUserRole": {
 "attributes": {
 "name": "admin"
 }
 }
 }]
 }]
 }]
 }
}
```

- A. one
- B. four
- C. seven
- D. nine

**Answer:** D

**Explanation:**

Simply count all the opening or closing curly brackets that represent the start or closing of an object value. NOTE: there's an error on that exhibit, the opening bracket in the array is supposed to be an opening bracket.

#### QUESTION 858

Which command is used to verify your OSPFv3 neighbor adjacencies?

- A. show ospf neighbor
- B. show ipv6 brief

- C. show ipv6 ospf
- D. show ipv6 ospf neighbor

**Answer:** D

**QUESTION 859**

By default, which port is the following telnet command going to?

C:\Windows\system32> telnet 2001:DB8:172:16::100

- A. 23
- B. 21
- C. 80
- D. 43

**Answer:** A

**QUESTION 860**

What is the Layer 2 encapsulation for Ethernet?

- A. 802.1q
- B. ARPA
- C. SSL
- D. RTP

**Answer:** B

**QUESTION 861**

When a switch receives a frame for an unknown destination MAC address, how is the frame handled?

- A. broadcast to all ports on the switch
- B. flooded to all ports except the origination port
- C. forwarded to the first available port
- D. inspected and dropped by the switch

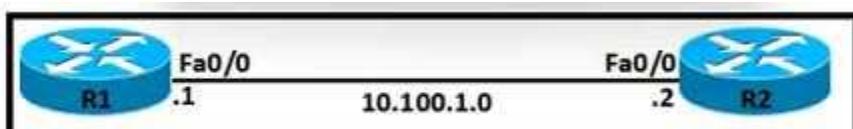
**Answer:** B

**Explanation:**

Switches tend to flood frame with the Unknown Destination MAC Address out all ports apart from the Originating (apart from the one it received) port.

**QUESTION 862**

Refer to the exhibit. An OSPF neighbor relationship must be configured using these guidelines:



- R1 is only permitted to establish a neighbor with R2
- R1 will never participate in DR elections
- R1 will use a router-id of 101.1.1.

Which configuration must be used?

- A.
- ```
interface FastEthernet0/0
    ip address 10.100.1.1 255.255.255.252
    ip ospf priority 0
    ip access-group 102 in

router ospf 10
    log-adjacency-changes
    network 10.1.1.1 0.0.0.0 area 0
    network 10.100.1.0 0.0.0.3 area 0
    router-id 10.1.1.1

access-list 102 permit 89 host 10.100.1.2 host 224.0.0.1
access-list 102 deny 89 any any
access-list 102 permit ip any any
```
- B.
- ```
interface Loopback0
 ip address 10.1.1.1 255.255.255.255

interface FastEthernet0/0
 ip address 10.100.1.1 255.255.255.252
 ip ospf priority 100
 ip access-group 102 in

router ospf 10
 log-adjacency-changes
 network 10.1.1.1 0.0.0.0 area 0
 network 10.100.1.0 0.0.0.3 area 0
 ospf router-id 10.1.1.1

access-list 102 permit 88 host 10.100.1.2 host 224.0.0.1
access-list 102 deny 88 any any
access-list 102 permit ip any any
```

- C.
- ```
interface FastEthernet0/0
    ip address 10.100.1.1 255.255.255.252
    ip ospf priority 100
    ip access-group 102 in

router ospf 10
    log-adjacency-changes
    network 10.1.1.1 0.0.0.0 area 0
    network 10.100.1.0 0.0.0.3 area 0
    ospf router-id 10.1.1.1

access-list 102 permit 89 host 10.100.1.2 host 224.0.0.1
access-list 102 deny 89 any any
access-list 102 permit ip any any
```
- D.
- ```
interface Loopback0
 ip address 10.1.1.1 255.255.255.255

interface FastEthernet0/0
 ip address 10.100.1.1 255.255.255.252
 ip ospf priority 0
 ip access-group 102 in

router ospf 10
 log-adjacency-changes
 network 10.1.1.1 0.0.0.0 area 0
 network 10.100.1.0 0.0.0.3 area 0
 ospf router-id 10.1.1.1

access-list 102 permit 88 host 10.100.1.2 host 224.0.0.1
access-list 102 deny 88 any any
access-list 102 permit ip any any
```

Answer: A

#### QUESTION 863

Under which condition is TCP preferred over UDP?

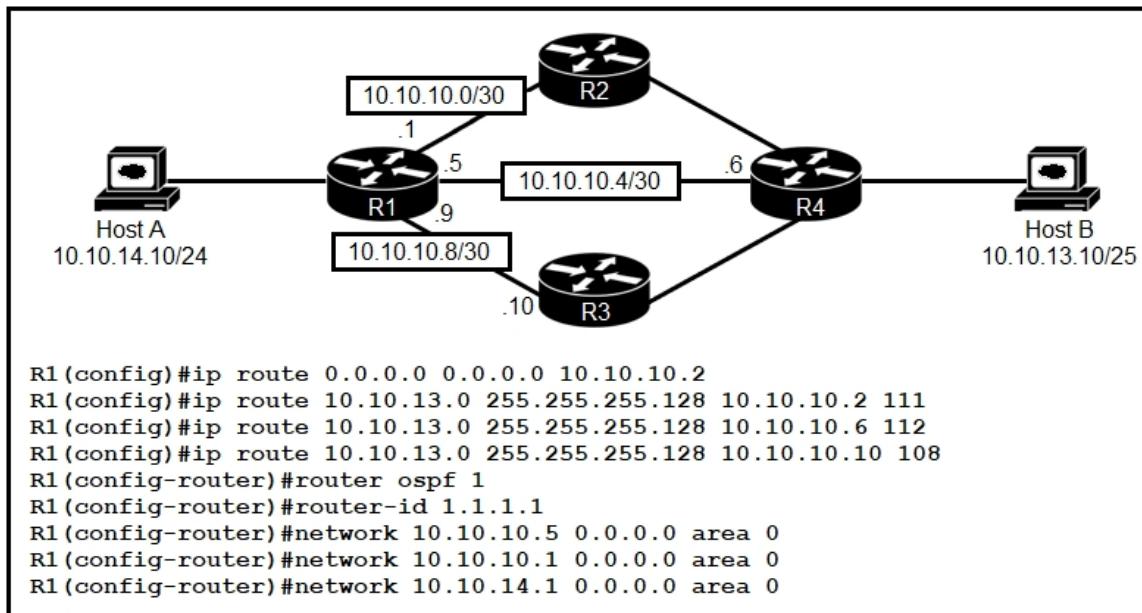
- A. UDP is used when low latency is optimal, and TCP is used when latency is tolerable.

- B. TCP is used when dropped data is more acceptable, and UDP is used when data is accepted out-of-order.
- C. TCP is used when data reliability is critical, and UDP is used when missing packets are acceptable.
- D. UDP is used when data is highly interactive, and TCP is used when data is time-sensitive.

**Answer:** C

#### QUESTION 864

Refer to the exhibit. R1 has just received a packet from host A that is destined to host B. Which route in the routing table is used by R1 to reach host B?



- A. 10.10.13.0/25 [1/0] via 10.10.10.2
- B. 10.10.13.0/25 [108/0] via 10.10.10.10
- C. 10.10.13.0/25 [110/2] via 10.10.10.6
- D. 10.10.13.0/25 [110/2] via 10.10.10.2

**Answer:** B

**Explanation:**

OSPF routing, indicated by area 0 routing command, has AD of 110. There is a floating static route configured with 108 AD. As the configured static route's AD is lower (108) than the OSPF's default AD (110) it will route the traffic via 10.10.10.10 because it has the lowest AD and thus will be put into the routing table.

#### QUESTION 865

What is a similarity between 1000BASE-LX and 1000BASE-T standards?

- A. Both use the same data-link header and trailer formats.
- B. Both cable types support RJ-45 connectors.
- C. Both support up to 550 meters between nodes.
- D. Both cable types support LR connectors.

**Answer:** A

**QUESTION 866**

Which function forwards frames to ports that have a matching destination MAC address?

- A. frame flooding
- B. frame filtering
- C. frame pushing
- D. frame switching

**Answer:** D

**Explanation:**

Flooding means that the switch sends the incoming frame to all occupied and active ports (except for the one from which it was received)

In forwarding, it first looks up the destination address in the MAC Address Table. It then forwards the frame to that specific port.

**QUESTION 867**

How do TCP and UDP fit into a query-responsible model?

- A. TCP avoids using sequencing and UDP avoids using acknowledgments
- B. TCP establishes a connection prior to sending data, and UDP sends immediately
- C. TCP encourages out-of-order packet delivery, and UDP prevents re-ordering
- D. TCP uses error detection for packets, and UDP uses error recovery.

**Answer:** B

**QUESTION 868**

What are two characteristics of an SSID? (Choose two.)

- A. It uniquely identifies a client in a WLAN.
- B. It is at most 32 characters long
- C. It uniquely identifies an access point in a WLAN
- D. It provides secured access to a WLAN.
- E. It can be hidden or broadcast in a WLAN.

**Answer:** BE

**QUESTION 869**

Why is UDP more suitable than TCP for applications that require low latency such as VoIP?

- A. UDP reliably guarantees delivery of all packets: TCP drops packets under heavy load
- B. UDP uses sequencing data for packets to arrive in order TCP offers the capability to receive packets in random order
- C. TCP uses congestion control for efficient packet delivery: UDP uses flow control mechanisms for the delivery of packets
- D. TCP sends an acknowledgement for every packet received: UDP operates without acknowledgments

**Answer:** D

**QUESTION 870**

What are the two functions of SSIDs? (Choose two.)

- A. uses the maximum of 32 alphanumeric characters
- B. controls the speed of the Wi-Fi network
- C. used exclusively with controller-based Wi-Fi networks
- D. supports a single access point
- E. broadcasts by default

**Answer:** AE

**QUESTION 871**

Which PoE mode enables powered-devices detection and guarantees power when the device detected?

- A. auto
- B. static
- C. dynamic
- D. active

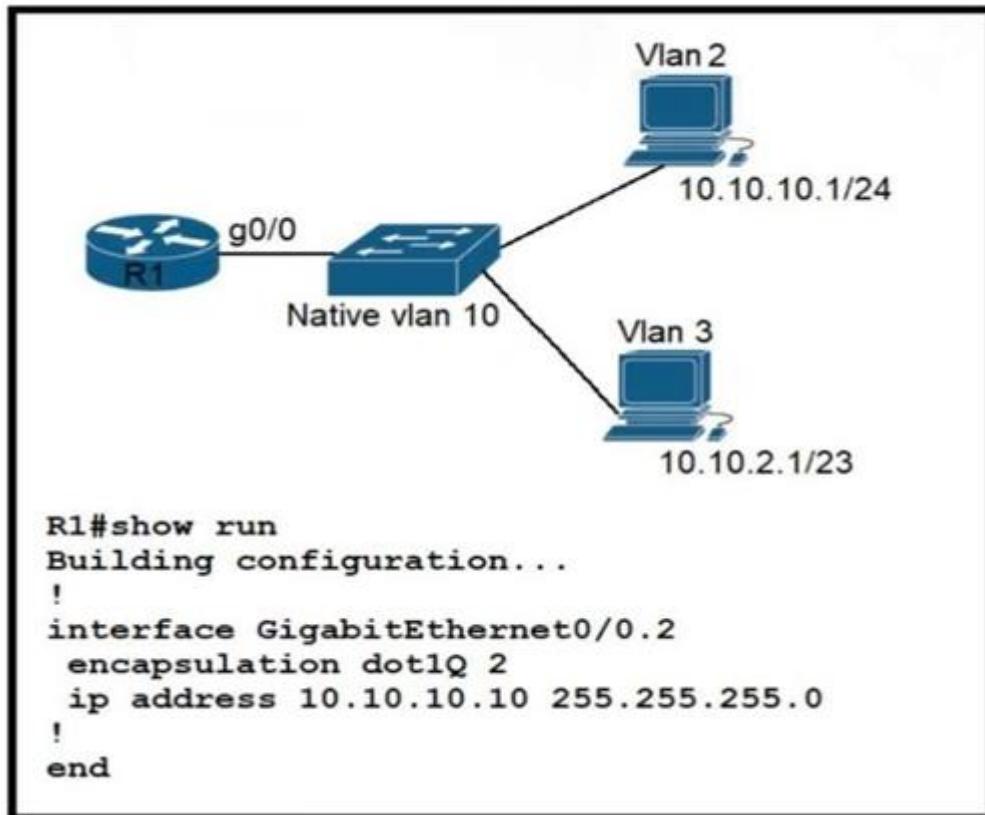
**Answer:** B

**Explanation:**

static - Enables powered-device detection; pre-allocate (reserve) power for a port before the switch discovers the powered device; the switch reserves power for this port even when no device is connected and guarantees that power will be provided upon device detection.

**QUESTION 872**

Refer to the exhibit. Configurations for the switch and PCs are complete. Which configuration must be applied so that VLANs 2 and 3 communicate back and forth?



- A. interface GigabitEthernet0/0 ip address 10.10.2.10 255.255.252.0
- B. interface GigabitEthernet0/0.10 encapsulation dot1Q 3 ip address 10.10.2.10 255.255.254.0
- C. interface GigabitEthernet0/0.3 encapsulation dot1Q 3 native ip address 10.10.2.10 255.255.252.0
- D. interface GigabitEthernet0/0.3 encapsulation dot1Q 10 ip address 10.10.2.10 255.255.255.252

**Answer:** B

**Explanation:**

R1 Subinterface Configuration (4.2.4)

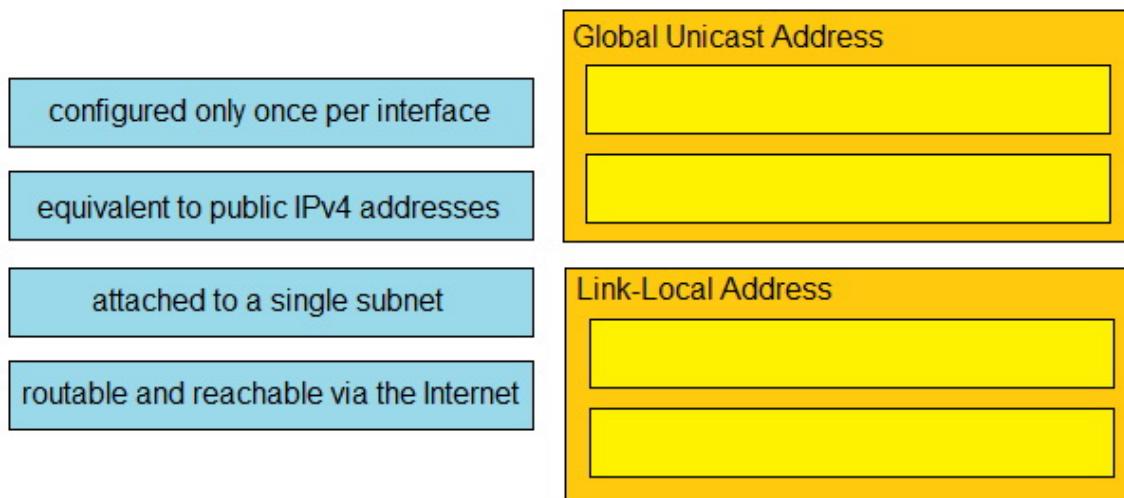
The router-on-a-stick method requires you to create a subinterface for each VLAN to be routed.

A subinterface is created using the interface `interface_id.subinterface_id` global configuration mode command. The subinterface syntax is the physical interface followed by a period and a subinterface number. Although not required, it is customary to match the subinterface number with the VLAN number.

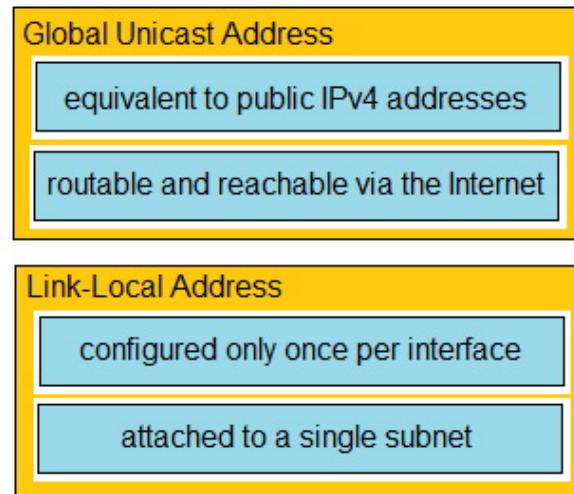
### QUESTION 873

Drag and Drop Question

Drag and drop the IPv6 address type characteristics from the left to the right.



**Answer:**



**Explanation:**

<https://www.ciscopress.com/articles/article.asp?p=2803866&seqNum=4>

#### QUESTION 874

How is RFC 1918 addressing used in a network?

- A. They are used to access the Internet from the internal network without conversion.
- B. They are used in place of public addresses for Increased security.
- C. They are used with NAT to preserve public IPv4 addresses.
- D. They are used by Internet Service Providers to route over the Internet.

**Answer: C**

**Explanation:**

This document describes address allocation for private internets. The allocation permits full network layer connectivity among all hosts inside an enterprise as well as among all public hosts

of different enterprises. The cost of using private internet address space is the potentially costly effort to renumber hosts and networks between public and private.  
<https://datatracker.ietf.org/doc/html/rfc1918>

**QUESTION 875**

Drag and Drop Question

Drag and drop the IPv6 address types from the left onto their description on the right.

|                                             |                                                                                            |
|---------------------------------------------|--------------------------------------------------------------------------------------------|
| 2001:DB8::bced:1234:456d<br>:aacc           | multicast address used<br>only locally within the site                                     |
| FD00:0000:0000:1a2d:a<br>153:3992:a19d:ccca | address that is automatically<br>created on a link when IPv6<br>is enabled on an interface |
| FE80::abcd:faff:12de:3992                   | address that is prohibited<br>from routing to the Internet                                 |
| FF05::23:becf:22:1111                       | address that is unique and<br>reserved for documentation<br>purposes                       |

**Answer:**

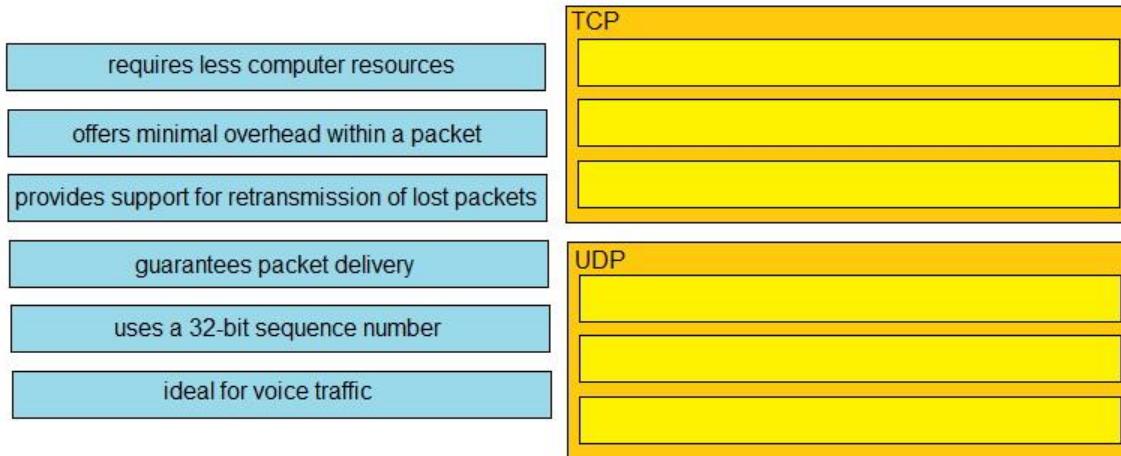
|                                             |
|---------------------------------------------|
| FF05::23:becf:22:1111                       |
| FE80::abcd:faff:12de:3992                   |
| FD00:0000:0000:1a2d:a<br>153:3992:a19d:ccca |
| 2001:DB8::bced:1234:456d<br>:aacc           |

**QUESTION 876**

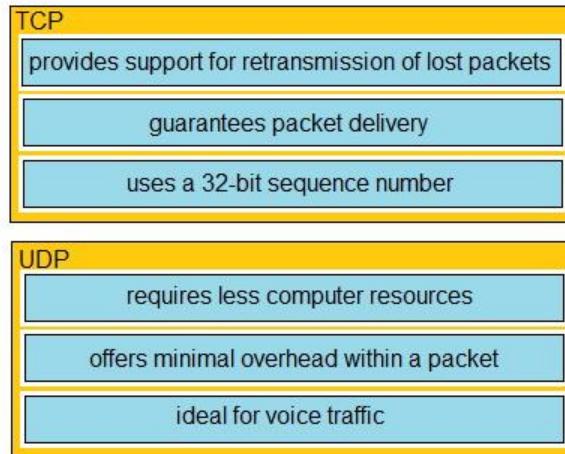
Drag and Drop Question

Drag and drop the characteristics of transport layer protocols from the left onto the corresponding

protocols on the right.



**Answer:**



### QUESTION 877

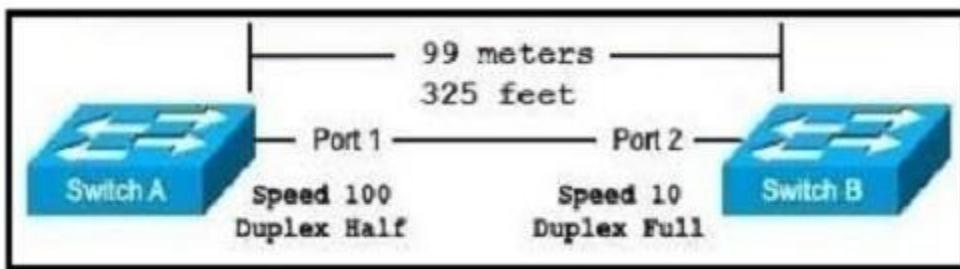
A network engineer must configure an interface with IP address 10.10.10.145 and a subnet mask equivalent to 11111111.11111111.11111111.11111000. Which subnet mask must the engineer use?

- A. /29
- B. /30
- C. /27
- D. /28

**Answer:** A

### QUESTION 878

Refer to the exhibit. The switches are connected via a Cat5 Ethernet cable that is tested successfully. The interfaces are configured as access ports and are both in a down status. What is the cause of the issue?



- A. The speed settings on the switches are mismatched
- B. The distance between the two switches is not supported by Cat5
- C. The switches are configured with incompatible duplex settings
- D. The portfast command is missing from the configuration

**Answer:** A

#### QUESTION 879

Which two IP addressing schemes provide internet access to users on the network while preserving the public IPv4 address space? (Choose two.)

- A. IPv6 addressing
- B. PAT with private internal addressing
- C. single public Class A network
- D. private networks only
- E. custom addresses from ARIN

**Answer:** AB

**Explanation:**

PAT with private internal addressing is the usual method of allowing Internet access while preserving IPv4 addresses. Another alternative is using IPV6, which will allow internet access without using any IPv4 addresses. The other answer choices will consume a great deal of public IPv4 addresses, or will not allow for internet access.

#### QUESTION 880

The address block 192.168.32.0/24 must be subnetted into smaller networks. The engineer must meet these requirements:

- Create 8 new subnets.
- Each subnet must accommodate 30 hosts.
- Interface VLAN 10 must use the last usable IP in the first new subnet.
- A Layer 3 interface is used.

Which configuration must be applied to the interface?

- A. no switchport mode trunk  
ip address 192.168.32.97 255.255.255.224
- B. switchport  
ip address 192.168.32.65 255.255.255.240
- C. no switchport

- ip address 192.168.32.30 255.255.255.224
- D. no switchport mode access  
ip address 192.168.32.62 255.255.255.240

**Answer:** C

**Explanation:**

Requirement is 8 networks with 30 hosts

255.255.255.0 = 11111111.11111111.11111111.00000000

8 networks = 1111 with increment of 16 which is less host number than require.

30 hosts = 11000000 with increment of 32

255.255.255.224 or 11111111.11111111.11111111.11100000

8 networks for /27 are 0,32,64,96,128,160,192,224

### QUESTION 881

What are two reasons to deploy private addressing on a network? (Choose two.)

- A. to subnet addresses in an organized hierarchy
- B. to reduce network maintenance costs
- C. to segment local IP addresses from the global routing table
- D. to hide sensitive data from access users within an enterprise
- E. to route protected data securely via an Internet service provider

**Answer:** BC

### QUESTION 882

Which property is shared by 10GBase-SR and 10GBase-LR interfaces?

- A. Both use the single-mode fiber type.
- B. Both require UTP cable media for transmission.
- C. Both require fiber cable media for transmission.
- D. Both use the multimode fiber type.

**Answer:** C

### QUESTION 883

What is a function spine-and-leaf architecture?

- A. Offers predictable latency of the traffic path between end devices.
- B. Exclusively sends multicast traffic between servers that are directly connected to the spine.
- C. Mitigates oversubscription by adding a layer of leaf switches.
- D. Limits payload size of traffic within the leaf layer.

**Answer:** A

**Explanation:**

With a spine-and-leaf architecture, no matter which leaf switch to which a server is connected, its traffic always has to cross the same number of devices to get to another server (unless the other server is located on the same leaf). This approach keeps latency at a predictable level because a payload only has to hop to a spine switch and another leaf switch to reach its destination.

Reference:

<https://www.cisco.com/c/en/us/products/collateral/switches/nexus-7000-series-switches/white->

**QUESTION 884**

What is the function of the control plane?

- A. It exchanges routing table information.
- B. It provides CLI access to the network device.
- C. It looks up an egress interface in the forwarding information base.
- D. It forwards traffic to the next hop.

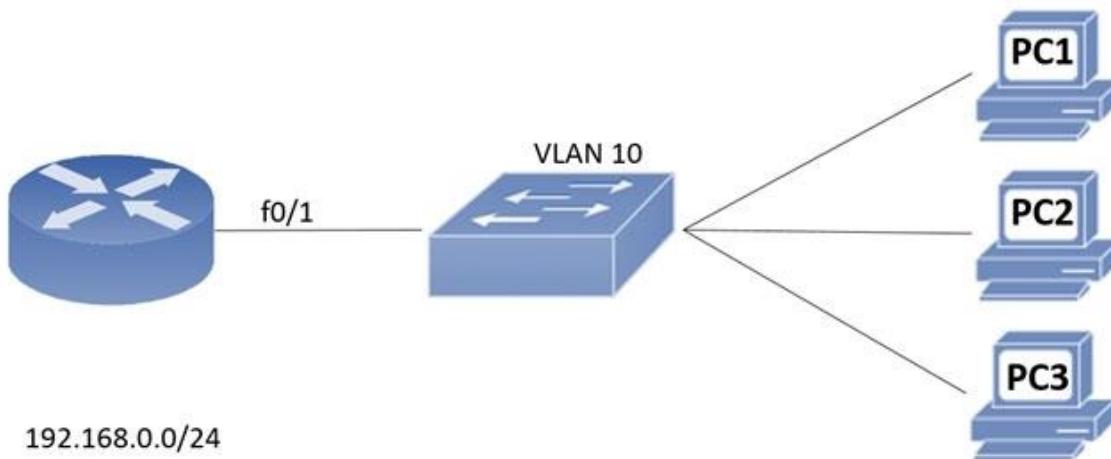
**Answer:** A

**Explanation:**

The control plane is the part of a network that controls how data packets are forwarded — meaning how data is sent from one place to another. The process of creating a routing table, for example, is considered part of the control plane. Routers use various protocols to identify network paths, and they store these paths in routing tables.

**QUESTION 885**

Refer to the exhibit. An engineer assigns IP addressing to the current VLAN with three PCs. The configuration must also account for the expansion of 30 additional VLANs using the same Class C subnet for subnetting and host count. Which command set fulfills the request while reserving address space for the expected growth?



- A. Switch(config)#interface vlan 10  
Switch(config-if)#ip address 192.168.0.1 265 255.255.252
- B. Switch(config)#interface vlan 10  
Switch(config-if)#ip address 192.168.0.1 255 255.255.248
- C. Switch(config)#interface vlan 10  
Switch(config-if)#ip address 192.168.0.1 255 255.255.0
- D. Switch(config)#interface vlan 10  
Switch(config-if)#ip address 192.168.0.1 255.255.255.128

**Answer:** B

**QUESTION 886**

## Drag and Drop Question

Drag and drop the statements about wireless architectures from the left onto the architectures on the right.

It encapsulates LWAPP traffic between the access point and the WLC in EtherType 0xB BBBB.

It facilitates Layer 2 connectivity between the WLC's wired interface and the WLAN clients.

It forwards only IP EtherType frames.

It requires IP addresses on the access point and the WLC.

It supports LWAPP tunneling within Ethernet frames and UDP packets.

It uses UDP or UDP Lite for IPv6 deployments.

Layer 2 Tunnel

Layer 3 Tunnel

**Answer:**

It facilitates Layer 2 connectivity between the WLC's wired interface and the WLAN clients.

It forwards only IP EtherType frames.

#### Layer 2 Tunnel

It encapsulates LWAPP traffic between the access point and the WLC in EtherType 0xB BBBB.

It requires IP addresses on the access point and the WLC.

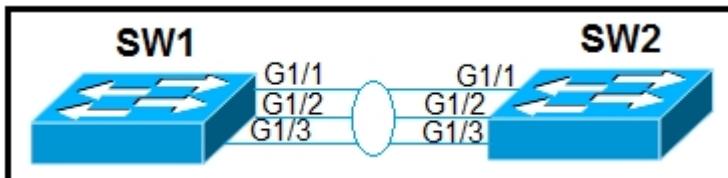
#### Layer 3 Tunnel

It supports LWAPP tunneling within Ethernet frames and UDP packets.

It uses UDP or UDP Lite for IPv6 deployments.

#### QUESTION 887

Refer to the exhibit. Which configuration establishes a Layer 2 LACP EtherChannel when applied to both switches?



- A. Interface range G1/1 - 1/3 switchport mode trunk channel-group 1 mode active no shutdown
- B. Interface range G1/1 - 1/3 switchport mode access channel-group 1 mode passive no shutdown
- C. Interface range G1/1 - 1/3 switchport mode trunk channel-group 1 mode desirable no shutdown
- D. Interface range G1/1 - 1/3 switchport mode access channel-group 1 mode on no shutdown

**Answer:** A

#### QUESTION 888

Refer to the exhibit. Which action must be taken so that neighboring devices rapidly discover switch Cat9300?

```
Cat9300# show cdp
Global CDP information:
 Sending CDP packets every 60 seconds
 Sending a holdtime value of 180 seconds
 Sending CDPv2 advertisements is enabled
```

- A. Enable portfast on the ports that connect to neighboring devices.
- B. Configure the cdp timer 10 command on switch Cat9300.
- C. Configure the cdp holdtime 10 command on switch Cat9300
- D. Configure the cdp timer 10 command on the neighbors of switch Cat9300

**Answer:** B

**QUESTION 889**

Drag and Drop Question

Drag and drop the management connection types from the left onto the definitions on the right.

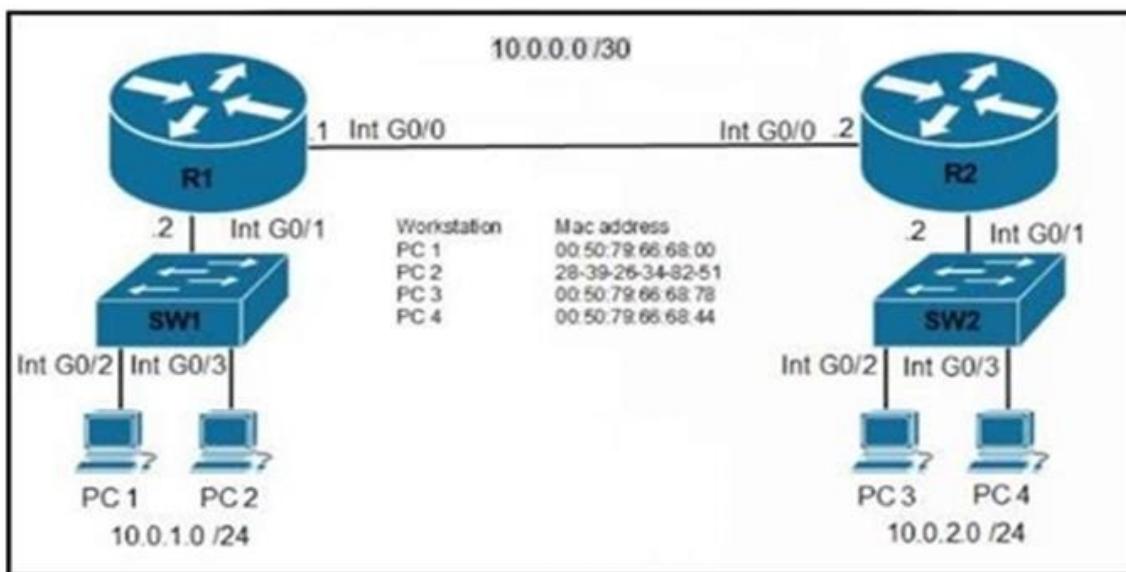
|         |                                                                         |
|---------|-------------------------------------------------------------------------|
| console | supports clear-text connections to the controller CLI                   |
| HTTPS   | supports encrypted access to CLI and a secure channel for data transfer |
| SSH     | supports physical connections over a serial cable                       |
| Telnet  | supports secure web access for management of the device                 |

**Answer:**

|         |
|---------|
| Telnet  |
| SSH     |
| console |
| HTTPS   |

**QUESTION 890**

Refer to the exhibit. An engineer must configure the interface that connects to PC1 and secure it in a way that only PC1 is allowed to use the port. No VLAN tagging can be used except for a voice VLAN. Which command sequence must be entered to configure the switch?

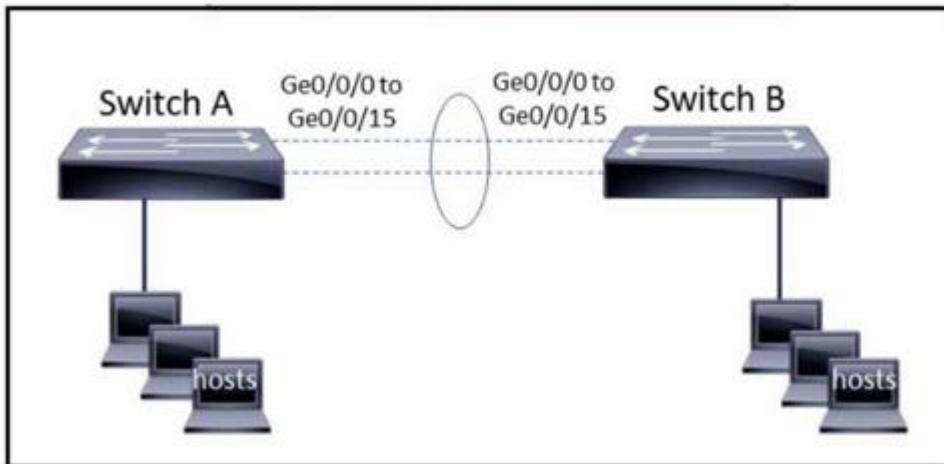


- A. SW1(config-if)#switchport mode dynamic auto  
SW1(config-if)#switchport port-security  
SW1(config-if)#switchport port-security violation restrict
- B. SW1(config-if)#switchport mode nonegotiate  
SW1(config-if)#switchport port-security  
SW1(config-if)#switchport port-security maximum 1
- C. SW1(config-if)#switchport mode access  
SW1(config-if)#switchport port-security  
SW1(config-if)#switchport port-security mac-address 0050.7966.6800
- D. SW1(config-if)#switchport mode dynamic desirable  
SW1(config-if)#switchport port-security mac-address 0050.7966.6800  
SW1(config-if)#switchport port-security mac-address sticky

**Answer:** C

#### QUESTION 891

Refer to the exhibit. The EtherChannel is configured with a speed of 1000 and duplex as full on both ends of channel group 1. What is the next step to configure the channel on switch A to respond to but not initiate LACP communication?

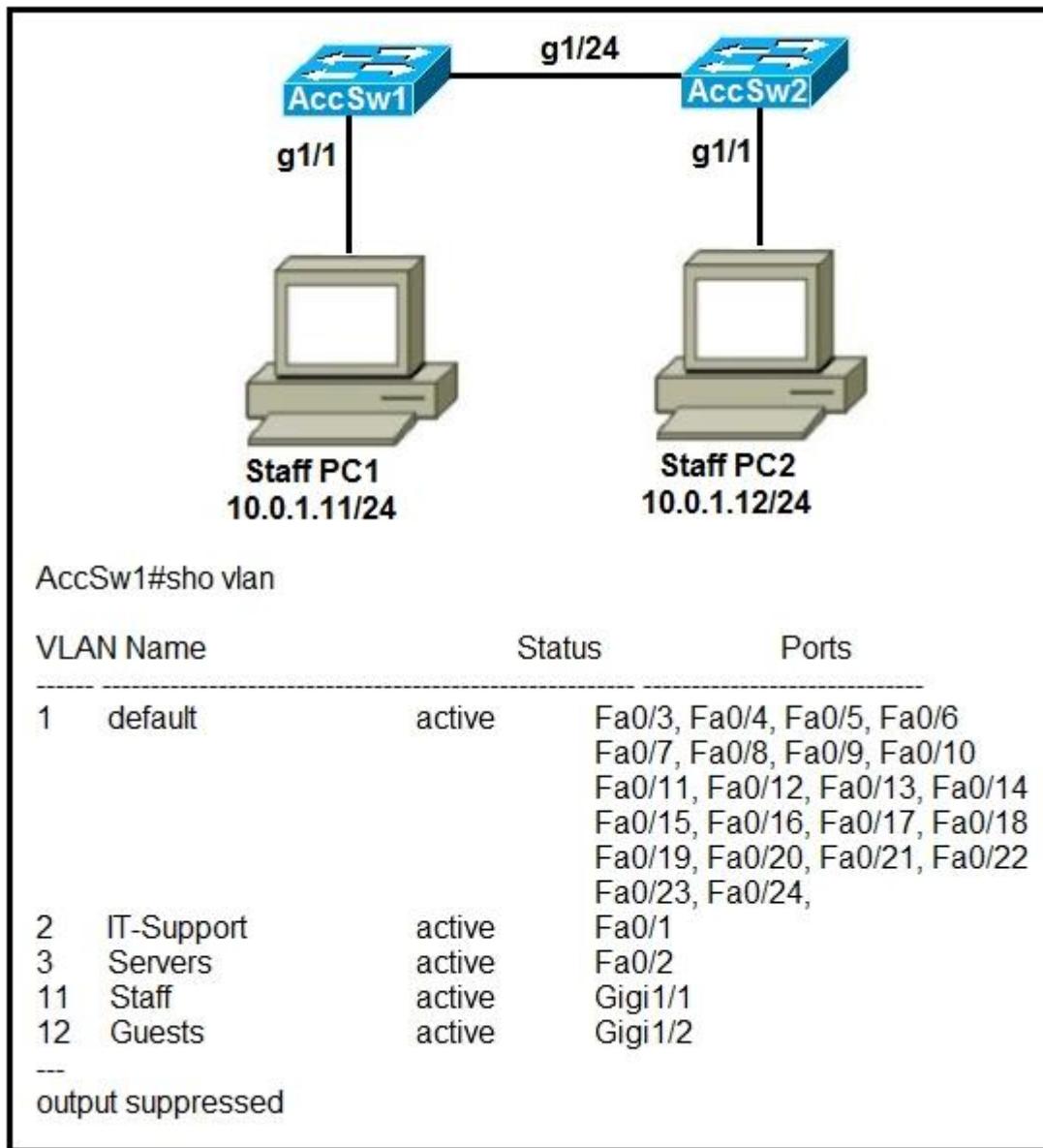


- A. interface range gigabitethernet0/0/0-15 channel-group 1 mode on
- B. interface range gigabitethernet0/0/0-15 channel-group 1 mode desirable
- C. interface port-channel 1 channel-group 1 mode auto
- D. interface port-channel 1 channel-group 1 mode passive

**Answer:** D

**QUESTION 892**

Refer to the exhibit. Switch AccSw1 has just been added to the network along with PC2. All VLANs have been implemented on AccSw2. How must the ports on AccSw2 be configured to establish Layer 2 connectivity between PC1 and PC2?



- A. interface GigabitEthernet1/2  
switchport mode access  
switchport access vlan 2  
!  
interface GigabitEthernet1/24  
switchport mode trunk
- B. interface GigabitEthernet1/1  
switchport mode access  
switchport access vlan 11  
!  
interface GigabitEthernet1/24  
switchport mode trunk
- C. interface GigabitEthernet1/24  
switchport mode trunk  
switchport trunk allowed vlan 11, 12

```

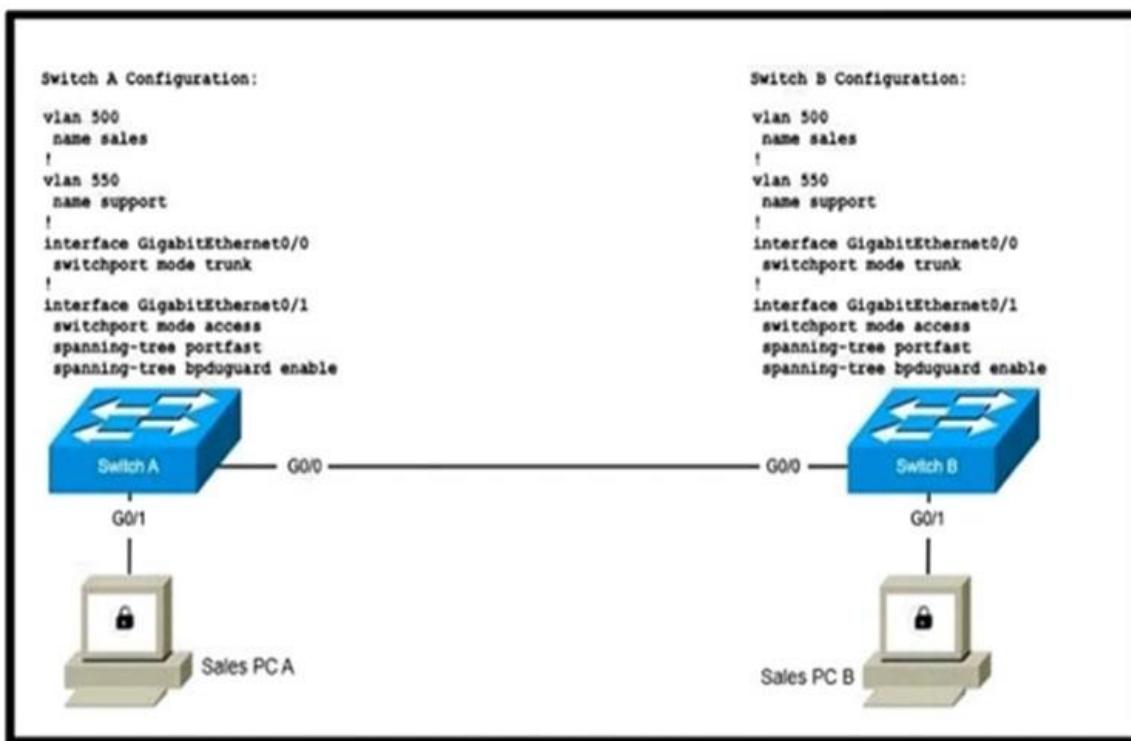
!
interface GigabitEthernet1/1
switchport access vlan 11
D. interface GigabitEthernet1/2
switchport mode access
switchport access vlan 12
!
interface GigabitEthernet1/24
switchport mode trunk
switchport trunk allowed vlan 11, 12

```

**Answer:** B

### QUESTION 893

Refer to the exhibit. Two new switches are being installed. The remote monitoring team uses the support network to monitor both switches. Which configuration is the next step to establish a Layer 2 connection between the two PCs?



- A. SwitchA(config)#interface GigabitEthernet0/1  
SwitchA(config-if)#switchport access vlan 500  
SwitchB(config)#interface GigabitEthernet0/1  
SwitchB(config-if)#switchport access vlan 500
- B. SwitchA(config)#interface GigabitEthernet0/1  
SwitchA(config-if)#switchport mode trunk  
SwitchB(config)#interface GigabitEthernet0/1  
SwitchB(config-if)#switchport mode trunk
- C. SwitchA(config)#interface GigabitEthernet0/0  
SwitchA(config-if)#switchport trunk allowed vlan 500, 550  
SwitchB(config)#interface GigabitEthernet0/0

```

SwitchB(config-if)#switchport trunk allowed vlan 500, 550
D. SwitchA(config)#interface GigabitEthernet0/0
SwitchA(config-if)#spanning-tree portfast
SwitchA(config-if)#spanning-tree bpduguard enable
SwitchB(config)#interface GigabitEthernet0/0
SwitchB(config-if)#spanning-tree portfast
SwitchB(config-if)#spanning-tree bpduguard enable

```

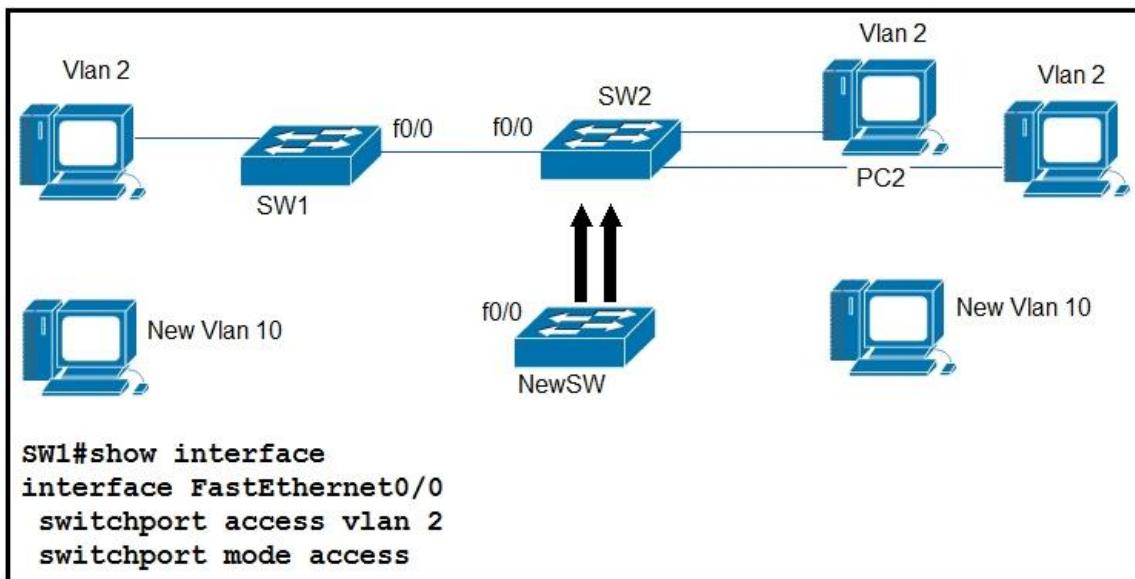
**Answer:** A

#### QUESTION 894

Refer to the exhibit. An engineer is configuring a new Cisco switch, NewSW, to replace SW2. The details have been provided:

- Switches SW1 and SW2 are third-party devices without support for trunk ports.
- The existing connections must be maintained between PC1, PC2, and PC3.
- Allow the switch to pass traffic from future VLAN 10.

Which configuration must be applied?



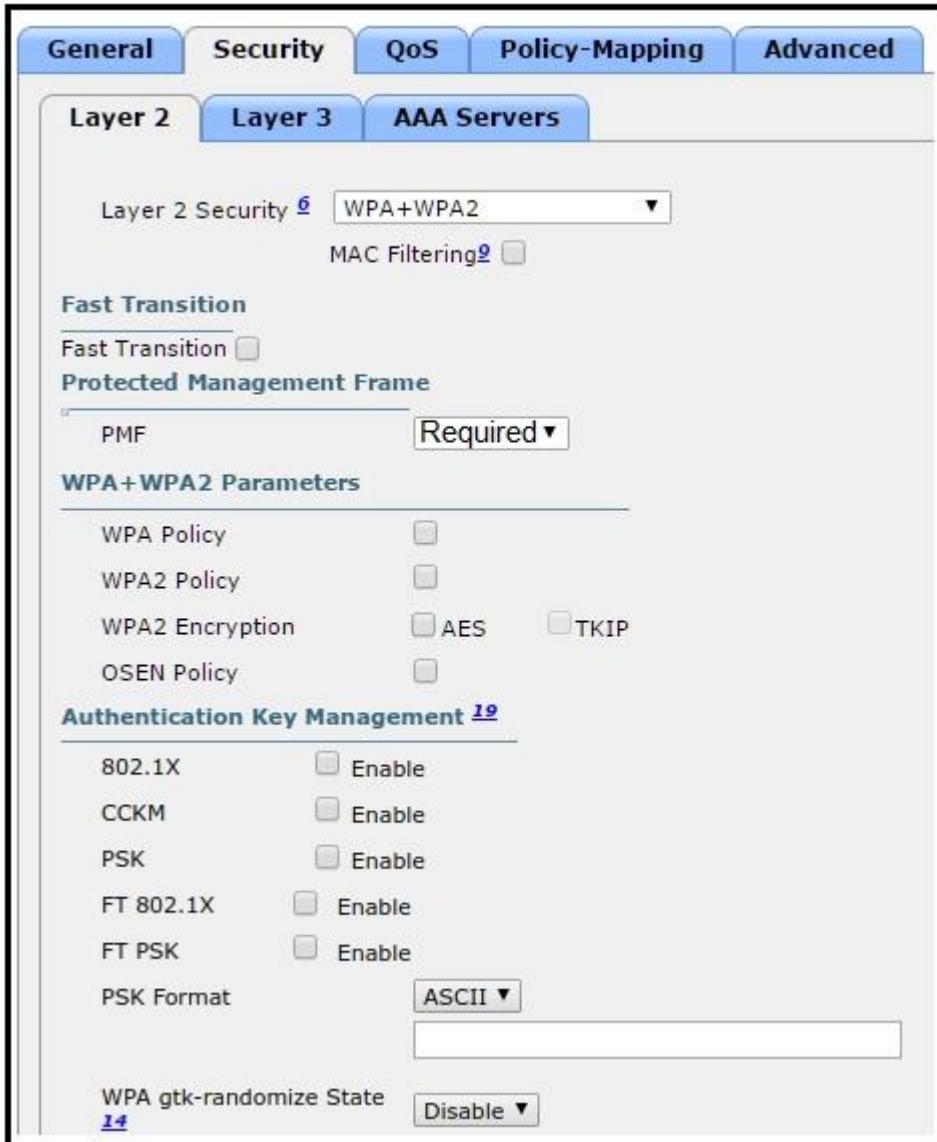
- A. NewSW(config)#interface f0/0
   
NewSW(config-if)#switchport mode trunk
   
NewSW(config-if)#switchport trunk native vlan 10
   
NewSW(config-if)#switchport trunk native vlan 10
- B. NewSW(config)#interface f0/0
   
NewSW(config-if)#switchport mode access
   
NewSW(config-if)#switchport trunk allowed vlan 2, 10
   
NewSW(config-if)#switchport trunk native vlan 2
- C. NewSW(config)#interface f0/0
   
NewSW(config-if)#switchport mode access
   
NewSW(config-if)#switchport trunk allowed vlan 2, 10
   
NewSW(config-if)#switchport trunk native vlan 10

D. NewSW(config)#interface f0/0  
 NewSW(config-if)#switchport mode trunk  
 NewSW(config-if)#switchport trunk allowed vlan 2, 10  
 NewSW(config-if)#switchport trunk native vlan 2

**Answer:** B

### QUESTION 895

Refer to the exhibit. The network engineer is configuring a new WLAN and is told to use a setup password for authentication instead of the RADIUS servers.  
 Which additional set of tasks must the engineer perform to complete the configuration?



The screenshot shows the configuration interface for a WLAN. The top navigation bar includes tabs for General, Security, QoS, Policy-Mapping, Advanced, Layer 2, Layer 3 (which is selected), and AAA Servers. The Layer 3 tab is active.

**Layer 2 Security:** Set to WPA+WPA2. There is a dropdown menu and a MAC Filtering checkbox.

**Fast Transition:** Fast Transition checkbox is checked.

**Protected Management Frame:** PMF is set to Required.

**WPA+WPA2 Parameters:**

- WPA Policy:
- WPA2 Policy:
- WPA2 Encryption:  AES  TKIP
- OSEN Policy:

**Authentication Key Management:**

- 802.1X:  Enable
- CCKM:  Enable
- PSK:  Enable
- FT 802.1X:  Enable
- FT PSK:  Enable

PSK Format: ASCII

**WPA gtk-randomize State:**  14

- A. Disable PMF Enable PSK Enable 802.1x
- B. Select WPA Policy Enable CCKM Enable PSK
- C. Select WPA Policy Select WPA2 Policy Enable FT PSK

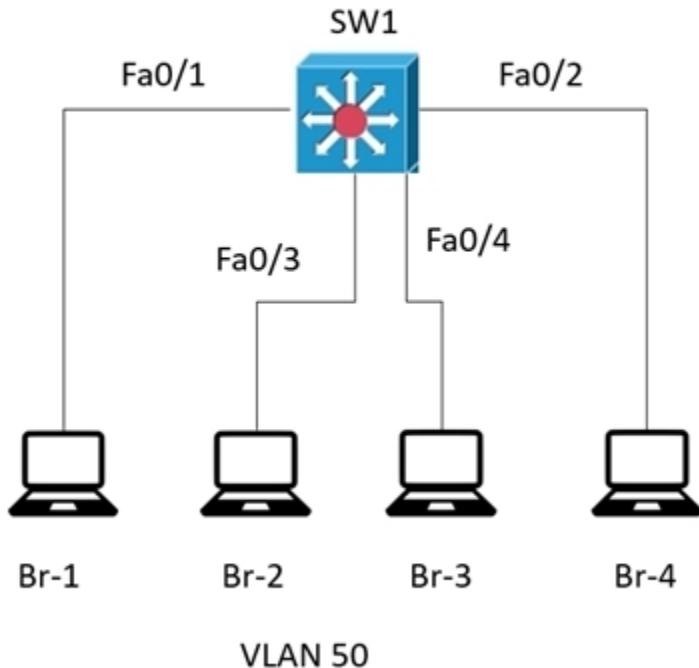
- D. Select WPA2 Policy Disable PMF Enable PSK

**Answer:** D

**QUESTION 896**

Refer to the exhibit. The entire MAC address table for SW1 is shown here:

Branch Network



**SW1#show mac-address-table**

Mac Address Table

| Vlan | Mac Address    | Type    | Ports |
|------|----------------|---------|-------|
| 50   | 000c.8590.bb7d | DYNAMIC | Fa0/1 |
| 50   | 010a.7a17.45bc | DYNAMIC | Fa0/3 |
| 50   | 7aa7.4041.0525 | DYNAMIC | Fa0/4 |

SW1#

What does SW1 do when Br-4 sends a frame for Br-2?

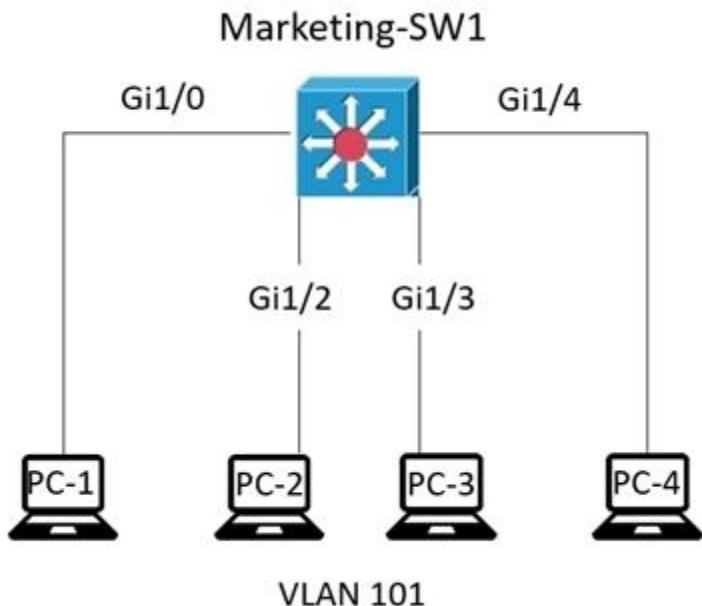
- A. It performs a lookup in the MAC address table for Br-4 and discards the frame due to a missing entry.
- B. It floods the frame out of all ports except on the port where Br-2 is connected.

- C. It inserts the source MAC address and port into the forwarding table and forwards the frame to Br-2.
- D. It maps the Layer 2 MAC address for Fa0/3 to the Layer 3 IP address and forwards the frame.

**Answer:** C

#### QUESTION 897

Refer to the exhibit. The entire Marketing-SW1 MAC address table is shown here:



```
Marketing-SW1#show mac-address-table
Mac Address Table
```

| VLAN | MAC Address    | Type    | Ports |
|------|----------------|---------|-------|
| 101  | 000a.000a.000a | DYNAMIC | Gi1/0 |
| 101  | 3986.3986.3986 | DYNAMIC | Gi1/2 |
| 101  | 00d0.00d0.00d0 | DYNAMIC | Gi1/3 |

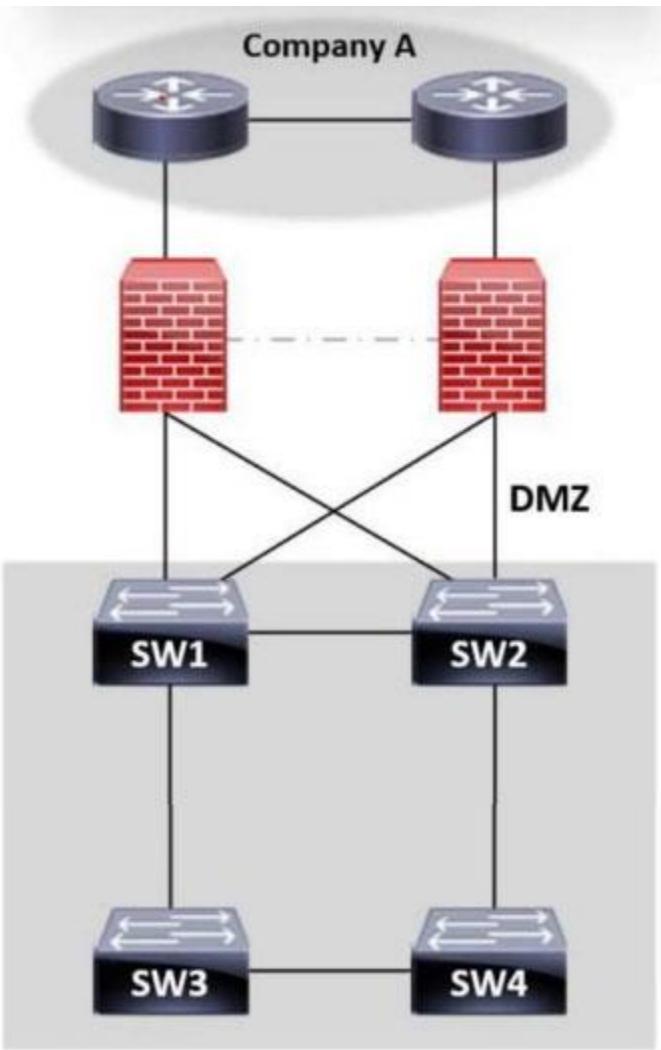
What does the switch do when PC-4 sends a frame to PC-1?

- A. It performs a lookup in the MAC address table and discards the frame due to a missing entry.
- B. It maps the Layer 2 MAC address to the Layer 3 IP address and forwards the frame.
- C. It inserts the source MAC address and port into the table and forwards the frame to PC-1.
- D. It floods the frame out of all ports except on the port where PC-1 is connected.

**Answer:** C

#### QUESTION 898

Refer to the exhibit. Which switch becomes the root of a spanning tree for VLAN 10 if the primary switch fails and all links are of equal speed?



SW1: VLAN10 - 32778 0018.1843.3cb0  
SW2: VLAN10 - 24586 004a.13e9.3912  
SW3: VLAN10 - 28682 0022.55cf.cc00  
SW4: VLAN10 - 64000 0022.66ed.a29f

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

**Answer:** C

**Explanation:**

Switch 2 is primary. But in this context, that is to say when it fails, the primary is chosen between SW1, SW3 and SW4. Thus, SW3 becomes the root.

**QUESTION 899**

Drag and Drop Question

Drag and drop the statements about access-point modes from the left onto the corresponding modes on the right.

It supports real-time Wi-Fi client troubleshooting when network engineers are offsite.

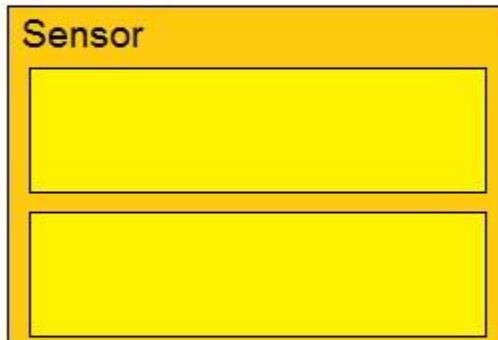
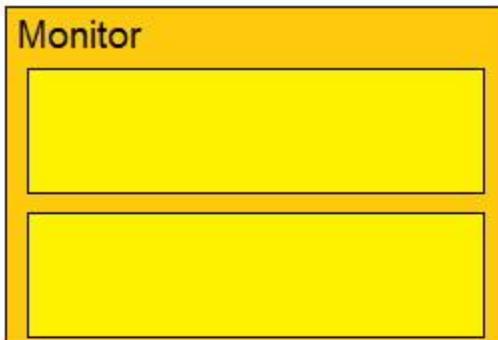
It captures and forwards packets on a specific wireless channel.

It enables enhanced RFID-tag location tracking.

It provides air-quality data and interference detection across all enabled channels.

It supports analytics for wireless performance testing.

It supports software that analyzes wireless frames on a remote device.

**Answer:**

**Monitor**

It enables enhanced RFID-tag location tracking.

It supports software that analyzes wireless frames on a remote device.

**Sensor**

It supports real-time Wi-Fi client troubleshooting when network engineers are offsite.

It supports analytics for wireless performance testing.

**Sniffer**

It captures and forwards packets on a specific wireless channel.

It provides air-quality data and interference detection across all enabled channels.

**QUESTION 900**

Refer to the exhibit. A packet sourced from 10.10.10.1 is destined for 10.10.8.14. What is the subnet mask of the destination route?

Gateway of last resort is 172.16.2.2 to network 0.0.0.0

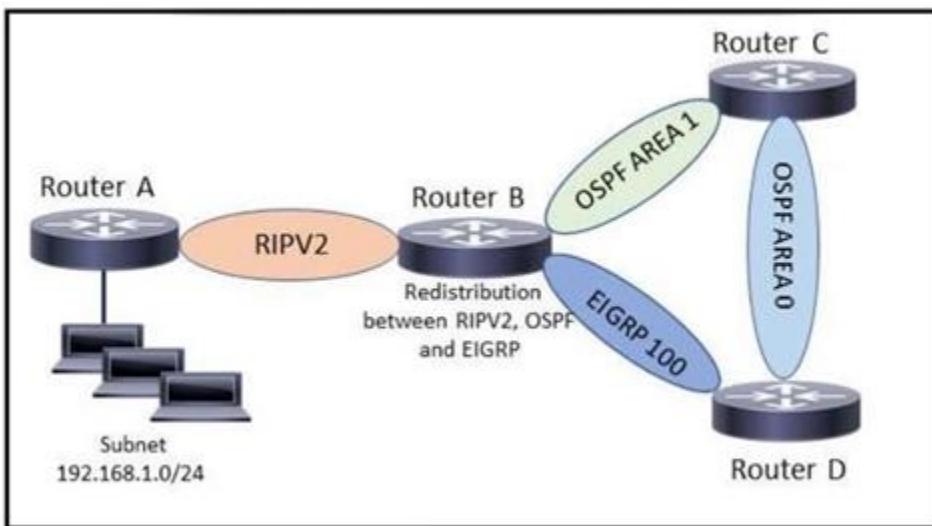
- 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
  - C 10.10.8.0/28 is directly connected, GigabitEthernet0/0/2
  - C 10.10.10.0/24 is directly connected, GigabitEthernet0/0/0
  - L 10.10.10.3.32 is directly connected, GigabitEthernet0/0/0
- 
- 172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
  - S 172.16.1.33/32 is directly connected, GigabitEthernet0/0/1
  - C 172.16.2.0/23 is directly connected, GigabitEthernet0/0/1
  - L 172.16.2.1/32 is directly connected, GigabitEthernet0/0/1
  - S\* 0.0.0.0/0 [1/0] via 172.16.2.2

- A. 255.255.254.0
- B. 255.255.255.240
- C. 255.255.255.248
- D. 255.255.255.252

**Answer:** B

### QUESTION 901

Refer to the exhibit. When an administrator executes the show ip route command on router D to view its routing table, which value is displayed for the administrative distance for the route to network 192.168.1.0?



- A. 110
- B. 120
- C. 170
- D. 90

**Answer:** A

**Explanation:**

When EIGRP is redistributed the new AD will be 170 (external EIGRP) making OSPF the lowest AD available.

### QUESTION 902

Refer to the exhibit. Which interface is chosen to forward traffic to the host at 192.168.0.55?

```
Codes: L - local, 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, H - NHRP, l - LISP
a - application route
+ - replicated route, t - next hop override, p - overrides from PfR
Gateway of last resort is 0.0.0.0 to network 0.0.0.0
S* 0.0.0.0/0 is directly connected, Null0
 10.0.0.0/8 is variably subnetted, 6 subnets, 2 masks
C 10.0.12.0/24 is directly connected, GigabitEthernet0/1
L 10.0.12.1/32 is directly connected, GigabitEthernet0/1
C 10.0.13.0/24 is directly connected, GigabitEthernet0/2
L 10.0.13.1/32 is directly connected, GigabitEthernet0/2
C 10.0.14.0/24 is directly connected, GigabitEthernet0/3
L 10.0.14.1/32 is directly connected, GigabitEthernet0/3
D 192.168.0.0/16 [90/130816] via 10.0.13.3, 00:10:09, GigabitEthernet0/2
O 192.168.0.0/23 [110/2] via 10.0.14.4, 00:00:46, GigabitEthernet0/3
S 192.168.0.0/24 [100/0] via 10.0.12.2
```

- A. GigabitEthernet0/3
- B. Null0
- C. GigabitEthernet0/1
- D. GigabitEthernet0/2

**Answer:** C

### QUESTION 903

Refer to the exhibit. Router OldR is replacing another router on the network with the intention of having OldR and R2 exchange routes. After the engineer applied the initial OSPF configuration, the routes were still missing on both devices. Which command sequence must be issued before the clear IP ospf process command is entered to enable the neighbor relationship?

```

OldR#show ip ospf interface
GigabitEthernet0/0/0 is up, line protocol is up
 Internet address is 192.168.1.2/24, Area 0
 Process ID 1, Router ID 192.168.1.1, Network Type BROADCAST, Cost: 1
 Transmit Delay is 1 sec, State DROTHER, Priority 1
 Designated Router (ID) 192.168.1.1, Interface address 192.168.1.1
 Backup Designated Router (ID) 192.168.1.1, Interface address 192.168.1.1
 Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
 Hello due in 00:00:01
 Index 1/1, flood queue length 0
 Neighbor Count is 1, Adjacent neighbor count is 2

R2#show ip ospf interface
GigabitEthernet0/0/0 is up, line protocol is up
 Internet address is 192.168.1.1/24, Area 0
 Process ID 1, Router ID 192.168.1.1, Network Type BROADCAST, Cost: 1
 Transmit Delay is 1 sec, State DROTHER, Priority 1
 Designated Router (ID) 192.168.1.1, Interface address 192.168.1.2
 Backup Designated Router (ID) 192.168.1.1, Interface address 192.168.1.2
 Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
 Hello due in 00:00:02
 Index 2/2, flood queue length 0
 Neighbor Count is 1, Adjacent neighbor count is 2

```

- A. OldR(config)#interface g0/0/0  
OldR(config-if)#ip ospf hello-interval 15
- B. OldR(config)#router ospf 1  
OldR(config-router)#network 192.168.1.0 255.255.255.0 area 2
- C. OldR(config)#interface g0/0/0  
OldR(config-if)#ip ospf dead-interval 15
- D. OldR(config)#router ospf 1  
OldR(config-router)#no router-id 192.168.1.1

**Answer:** D

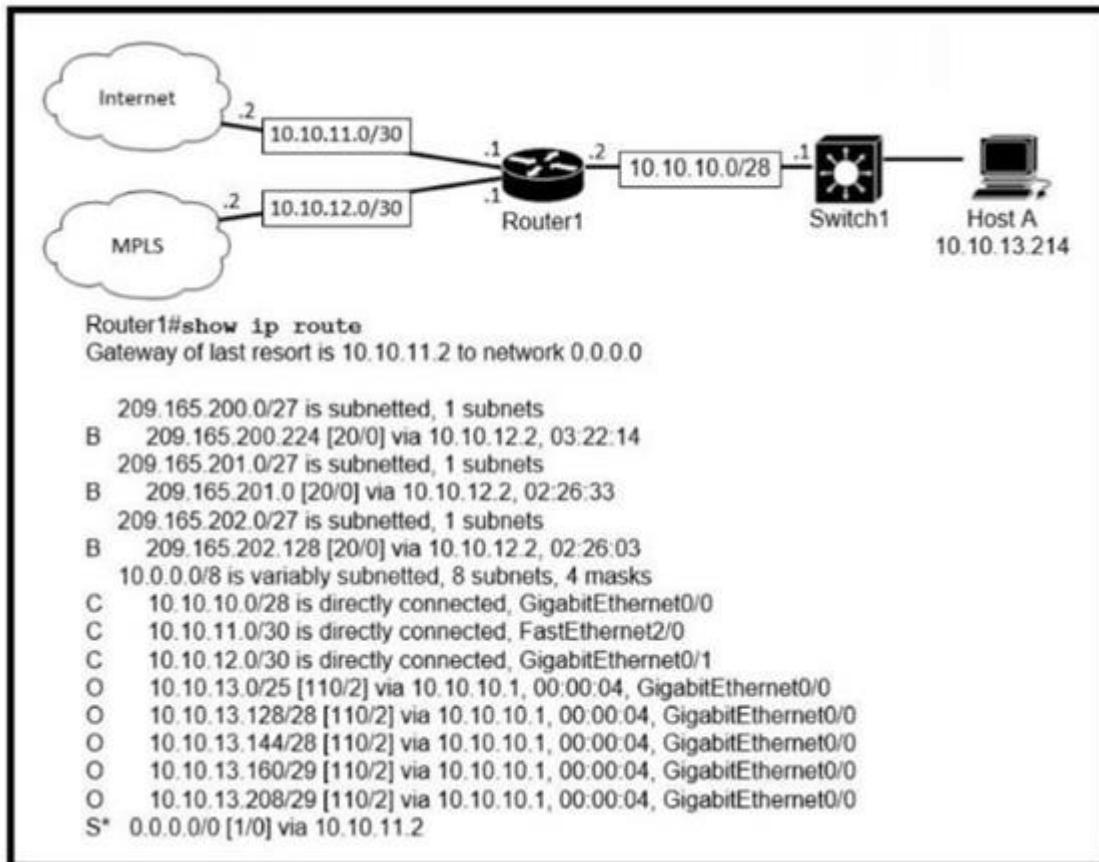
**Explanation:**

With OSPF each router must have a unique router ID. Here we see that both routers have a router ID of 192.168.1.1. Removing the router-id command on the OldR will force it to use one of its actual interface IP addresses as the router ID.

#### QUESTION 904

Drag and Drop Question

Refer to the exhibit. Drag and drop the prefix lengths from the left onto the corresponding prefixes on the right. Not all prefixes are used.



|                 |                 |
|-----------------|-----------------|
| 255.255.255.128 | 10.10.13.0      |
| 255.255.255.224 | 10.10.13.144    |
| 255.255.255.240 | 10.10.13.160    |
| 255.255.255.248 | 209.165.202.128 |
| 255.255.255.252 |                 |

**Answer:**

255.255.255.128  
255.255.255.240  
255.255.255.248  
255.255.255.224  
**255.255.255.252**

**QUESTION 905**

Refer to the exhibit. What is the subnet mask for route 172.16.4.0?

```
R1# show ip route | begin Gateway
Gateway of last resort is 0.0.0.0 to network 0.0.0.0
S* 0.0.0.0/0 is directly connected, Serial0/0/1
 172.16.0.0/16 is variably subnetted, 4 subnets, 2 masks
C 172.16.2.0/24 is directly connected, GigabitEthernet0/0
L 172.16.2.2/32 is directly connected, GigabitEthernet0/0
C 172.16.4.0/21 is directly connected, Serial0/0/1
L 172.16.8.2/26 is directly connected, Serial0/0/1
```

- A. 255.255.255.192
- B. 255.255.254.0
- C. 255.255.248.0
- D. 255.255.240.0

**Answer:** C

**QUESTION 906**

Refer to the exhibit. The network engineer is configuring router R2 as a replacement router on the network. After the initial configuration is applied, it is determined that R2 failed to show R1 as a neighbor. Which configuration must be applied to R2 to complete the OSPF configuration and enable it to establish the neighbor relationship with R1?

```
R1#show ip ospf interface g0/0/0
GigabitEthernet0/0/0 is up, line protocol is up
 Internet address is 192.168.1.2/24, Area 0
 Process ID 1, Router ID 192.168.1.1, Network Type POINT-TO-POINT, Cost: 1
 Transmit Delay is 1 sec, State POINT-TO-POINT,
 Timer intervals configured, Hello 15, Dead 40, Wait 40, Retransmit 5
 Hello due in 00:00:08
 Index 1/1, flood queue length 0
 Next 0x0(0)/0x0(0)
 Last flood scan length is 1, maximum is 1
 Last flood scan time is 0 msec, maximum is 0 msec
 Suppress hello for 0 neighbor(s)

R2#show ip ospf interface g0/0/0
GigabitEthernet0/0/0 is up, line protocol is up
 Internet address is 192.168.1.1/24, Area 0
 Process ID 1, Router ID 10.1.1.1, Network Type POINT-TO-POINT, Cost: 1
 Transmit Delay is 1 sec, State POINT-TO-POINT,
 Timer intervals configured, Hello 15, Dead 45, Wait 15, Retransmit 5
 Hello due in 00:00:11
 Index 1/1, flood queue length 0
 Next 0x0(0)/0x0(0)
 Last flood scan length is 1, maximum is 1
 Last flood scan time is 0 msec, maximum is 0 msec
 Suppress hello for 0 neighbor(s)
```

- A. R2(config)#router ospf 1  
R2(config-router)#network 192.168.1.0 255.255.255.0 area 2
- B. R2(config)#interface g0/0/0  
R2(config-if)#ip ospf hello-interval 10
- C. R2(config)#interface g0/0/0  
R2(config-if)#ip ospf dead-interval 40
- D. R2(config)#router ospf 1  
R2(config-router)#router-id 192.168.1.2

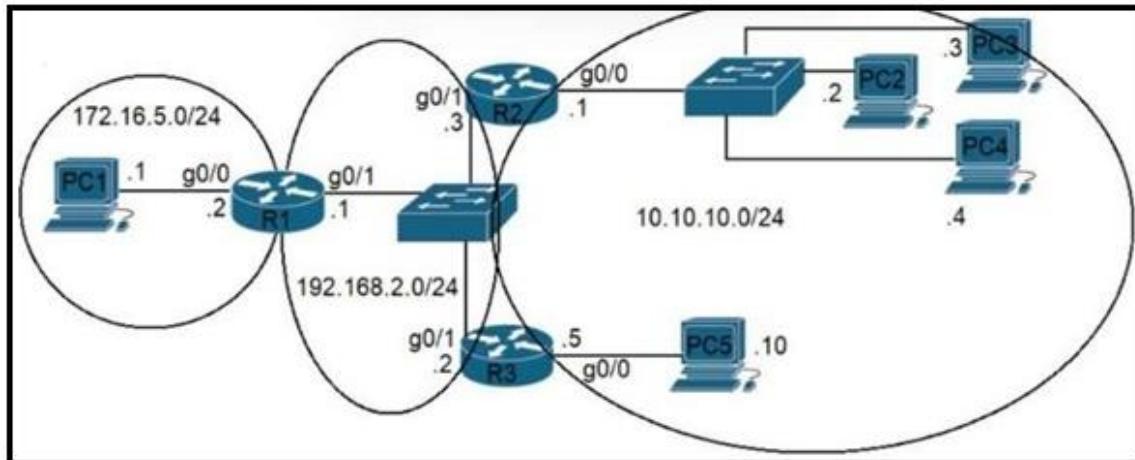
**Answer:** C

**Explanation:**

For OSPF the hello and dead timers must match to become neighbors. R1 is configured with a dead time of 40 seconds, while R2 is set to 45 seconds.

#### QUESTION 907

Refer to the exhibit. The router R1 is in the process of being configured. Routers R2 and R3 are configured correctly for the new environment. Which two commands must be configured on R1 for PC1 to communicate to all PCs on the 10.10.10.0/24 network? (Choose two.)

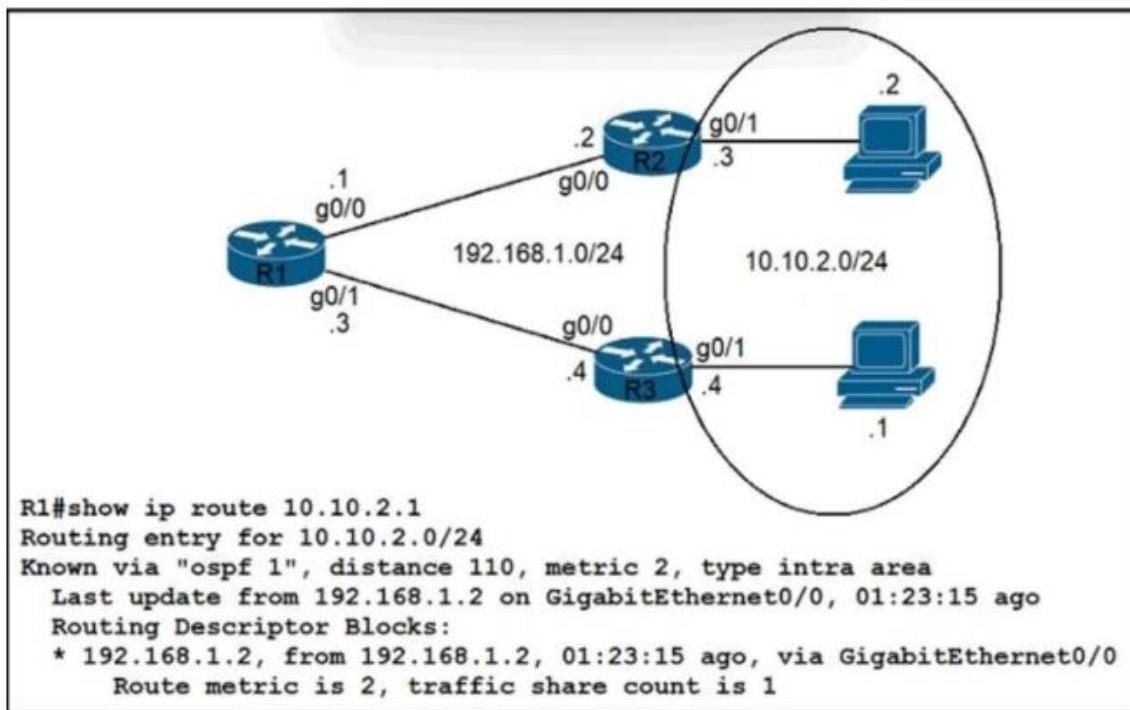


- A. ip route 10.10.10.0 255.255.255.0 192.168.2.3
- B. ip route 10.10.10.10 255.255.255.255 192.168.2.2
- C. ip route 10.10.10.10 255.255.255.255 g0/1
- D. ip route 10.10.10.8 255.255.255.248 g0/1
- E. ip route 10.10.10.0 255.255.255.248 192.168.2.2

**Answer:** AB

#### QUESTION 908

Refer to the exhibit. Traffic from R1 to the 10.10.2.0/24 subnet uses 192.168.1.2 as its next hop. A network engineer wants to update the R1 configuration so that traffic with destination 10.10.2.1 passes through router R3, and all other traffic to the 10.10.2.0/24 subnet passes through R2. Which command must be used?



- A. ip route 10.10.2.1 255.255.255.255 192.168.1.4115
- B. ip route 10.10.2.0 255.255.255.0 192.168.1.4115
- C. ip route 10.10.2.0 255.255.255.0 192.168.1.4100
- D. ip route 10.10.2.1 255.255.255.255 192.168.1.4100

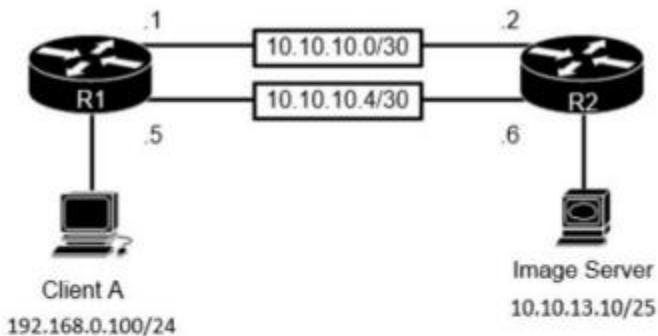
**Answer:** D

**Explanation:**

Here we need to add a host route for the specific 10.10.2.1 host, which means using a subnet mask of 255.255.255.255. We also need to configure an Administrative Distance that is less than the default OSPF AD of 115.

#### QUESTION 909

Refer to the exhibit. The image server and client A are running an application that transfers an extremely high volume of data between the two. An engineer is configuring a dedicated circuit between R1 and R2. Which set of commands must the engineer apply to the routers so that only traffic between the image server and client A is forced to use the new circuit?



```
R1#show ip route
Gateway of last resort is 10.10.10.2 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 10.10.10.2

R2#show ip route
Gateway of last resort is 10.10.10.1 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 10.10.10.1
```

- A. R1(config)#ip route 10.10.13.10 255.255.255.255 10.10.10.6  
R2(config)#ip route 192.168.0.100 255.255.255.255 10.10.10.5
- B. R1(config)#ip route 10.10.13.10 255.255.255.128 10.10.10.6  
R2(config)#ip route 192.168.0.100 255.255.255.0 10.10.10.5
- C. R1(config)#ip route 10.10.13.10 255.255.255.252 10.10.10.6  
R2(config)#ip route 192.168.0.100 255.255.255.252 10.10.10.5
- D. R1(config)#ip route 10.10.13.10 255.255.255.255 10.10.10.2  
R2(config)#ip route 192.168.0.100 255.255.255.255 10.10.10.1

**Answer:** A

#### QUESTION 910

Refer to the exhibit. An engineer is checking the routing table in the main router to identify the

path to a server on the network. Which route does the router use to reach the server at 192.168.2.2?

Gateway of last resort is not set

```

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 10.1.1.0/30 is directly connected, GigabitEthernet0/0
L 10.1.1.2/32 is directly connected, GigabitEthernet0/0
S 192.168.0.0/20 [1/0] via 10.1.1.1
 192.168.1.0/30 is subnetted, 1 subnets
 S 192.168.1.0/30 [1/0] via 10.1.1.1
 192.168.2.0/24 is variably subnetted, 2 subnets, 2 masks
 S 192.168.2.0/28 [1/0] via 10.1.1.1
 S 192.168.2.0/29 [1/0] via 10.1.1.1

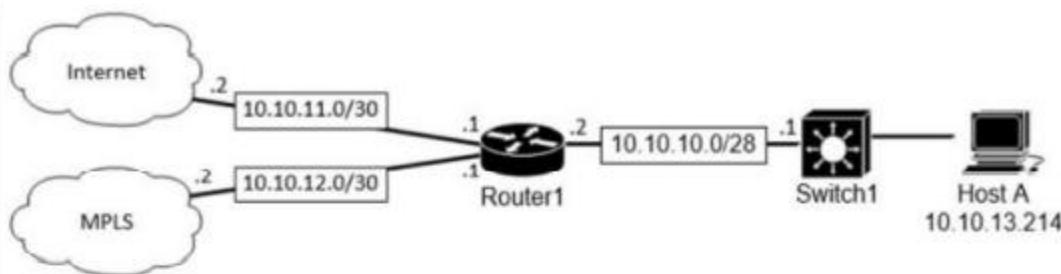
```

- A. S 192.168.0.0/20 [1/0] via 10.1.1.1
- B. S 192.168.2.0/29 [1/0] via 10.1.1.1
- C. S 192.168.2.0/28 [1/0] via 10.1.1.1
- D. S 192.168.1.0/30 [1/0] via 10.1.1.1

**Answer:** B

### QUESTION 911

Refer to the exhibit. What is the prefix length for the route that router1 will use to reach host A?



```

Router1#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0

 209.165.200.0/27 is subnetted, 1 subnets
B 209.165.200.224 [20/0] via 10.10.12.2, 03:22:14
 209.165.201.0/27 is subnetted, 1 subnets
B 209.165.201.0 [20/0] via 10.10.12.2, 02:26:33
 209.165.202.0/27 is subnetted, 1 subnets
B 209.165.202.128 [20/0] via 10.10.12.2, 02:26:03
 10.0.0.0/8 is variably subnetted, 8 subnets, 4 masks
C 10.10.10.0/28 is directly connected, GigabitEthernet0/0
C 10.10.11.0/30 is directly connected, FastEthernet2/0
C 10.10.12.0/30 is directly connected, GigabitEthernet0/1
O 10.10.13.0/25 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O 10.10.13.128/28 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O 10.10.13.144/28 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O 10.10.13.160/29 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
O 10.10.13.208/29 [110/2] via 10.10.10.1, 00:00:04, GigabitEthernet0/0
S* 0.0.0.0/0 [1/0] via 10.10.11.2

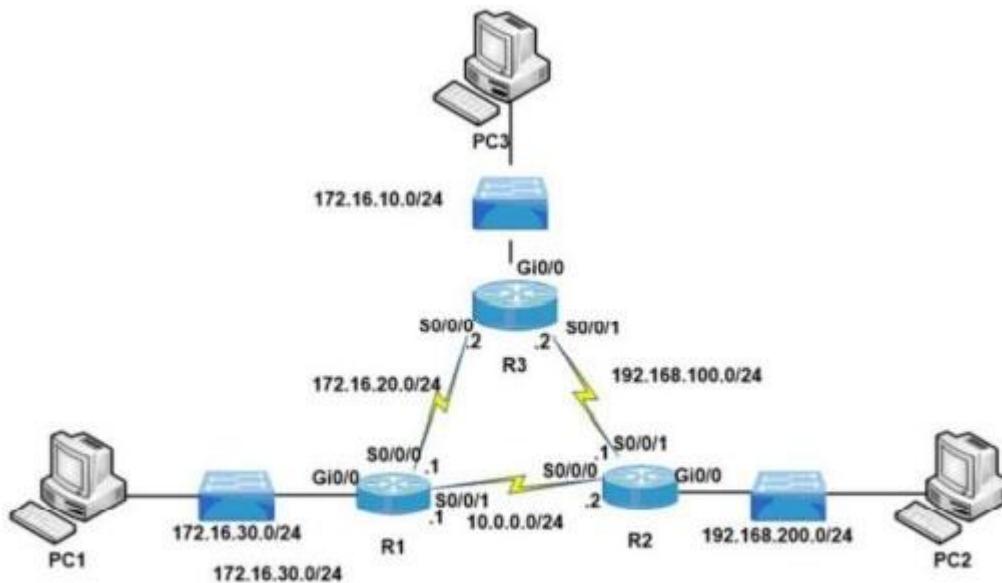
```

- A. /25
- B. /27
- C. /28
- D. /29

**Answer:** D

### QUESTION 912

Refer to the exhibit. After applying this configuration to router R1, a network engineer is verifying the implementation. If all links are operating normally, and the engineer sends a series of packets from PC1 to PC3, how are the packets routed?



```
R1(config)#ip route 0.0.0.0 .0.0.0 172.16.20.2
R1(config)#ip route 0.0.0.0 0.0.0.0 10.0.0.2 20
```

- A. They are distributed sent round robin to interfaces S0/0/0 and S0/0/1
- B. They are routed to 10.0.0.2
- C. They are routed to 192.168.100.2
- D. They are routed to 172.16.20.2

**Answer:** D

### QUESTION 913

Refer to the exhibit. How much OSPF be configured on the GigabitEthernet0/0 interface of the neighbor device to achieve the destined neighbor relationship?

### Current Neighbor Relationship

| Neighbor ID | Pri | State   | Dead Time | Address     | Interface          |
|-------------|-----|---------|-----------|-------------|--------------------|
| 192.168.1.1 | 1   | FULL/DR | 00:00:33  | 192.168.1.1 | GigabitEthernet0/0 |

### Desired Neighbor Relationship

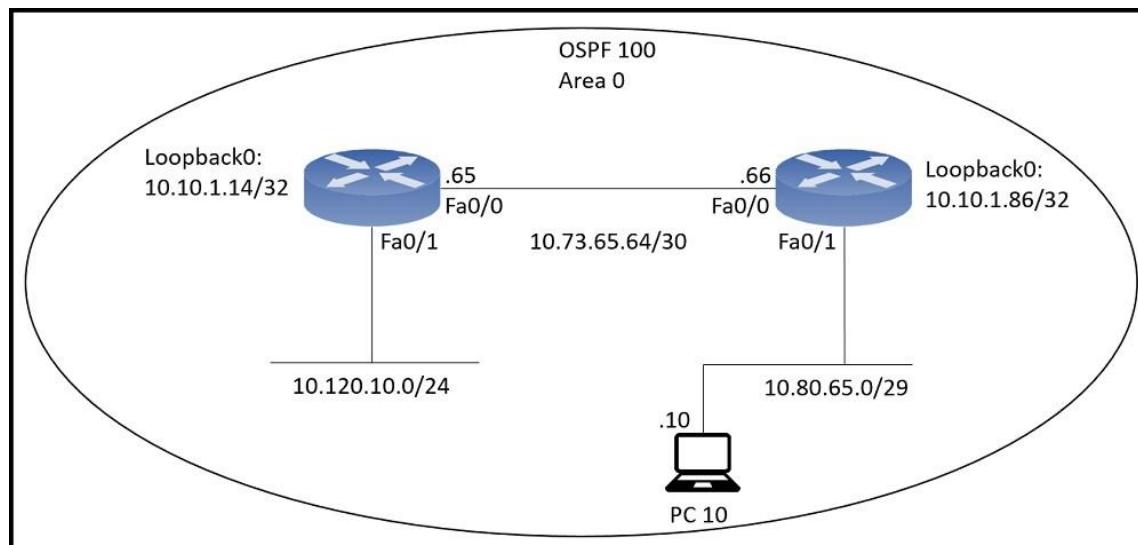
| Neighbor ID | Pri | State  | Dead Time | Address     | Interface          |
|-------------|-----|--------|-----------|-------------|--------------------|
| 192.168.1.1 | 0   | FULL/- | 00:00:31  | 192.168.1.1 | GigabitEthernet0/0 |

- A. Router(config)#interface GigabitEthernet 0/0  
Router(config-if)#ip ospf cost 5
- B. Router(config)#interface GigabitEthernet 0/0  
Router(config-if)#ip ospf priority 1
- C. Router(config)#interface GigabitEthernet 0/0  
Router(config-if)#ip ospf area 2
- D. Router(config)#interface GigabitEthernet 0/0  
Router(config-if)#ip ospf network point-to-point

**Answer:** D

### QUESTION 914

An engineer just installed network 10.120.10.0/24. Which configuration must be applied to the R14 router to add the new network to its OSPF routing table?



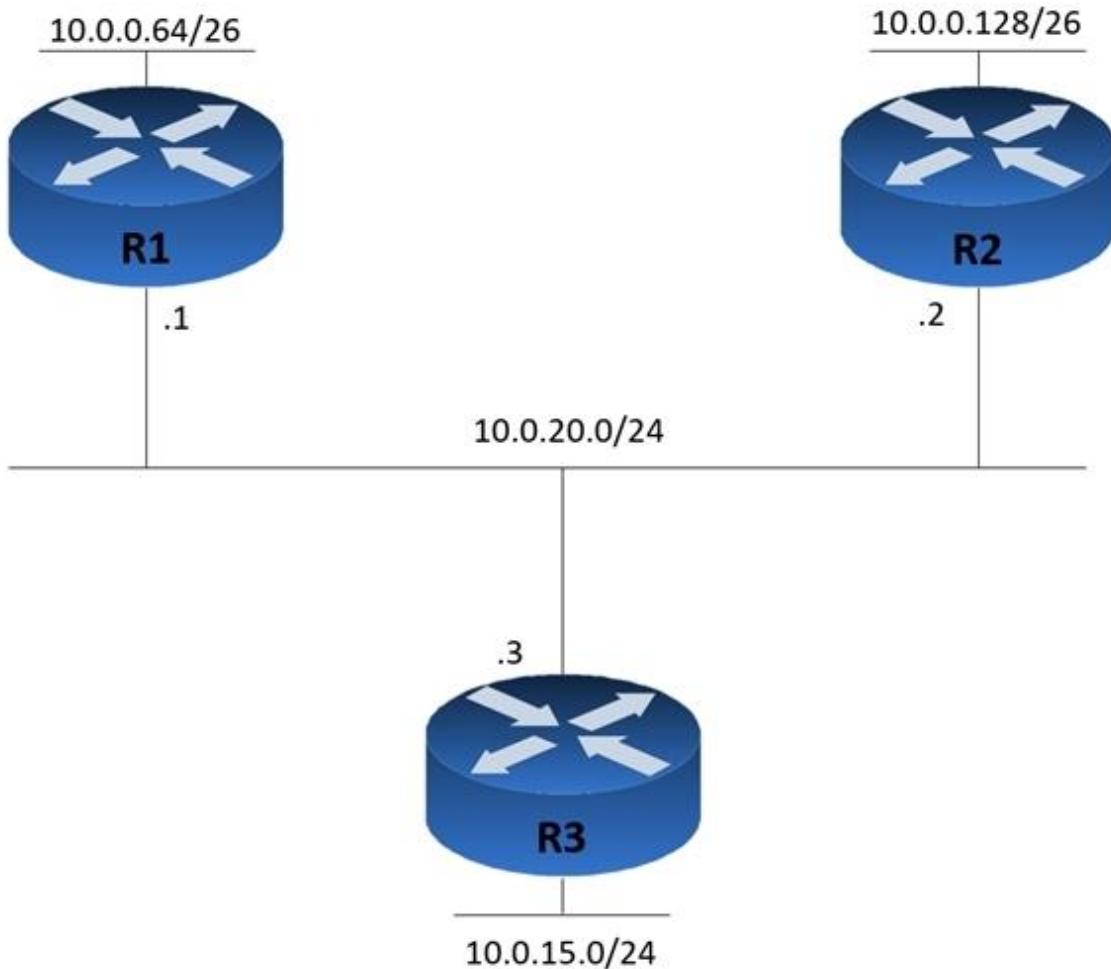
- A. Router ospf 100 Network 10.120.10.0 0.0.0.255 area 0
- B. Router ospf 120 Network 10.120.10.0 255.255.255.0 area 0  
ip route 10.120.10.0 255.255.255.0 fa0/1
- C. Router ospf 100 area 0 Network 10.120.10.0 0.0.0.255

D. Router ospf 100 Network 10.120.10.0 255.255.255.0 area 0

**Answer:** A

**QUESTION 915**

Refer to the exhibit. Router R1 is added to the network and configured with the 10.0.0.64/26 and 10.0.20.0/26 subnets. However, traffic destined for the LAN on R3 is not accessible. Which command when executed on R1 defines a static route to reach the R3 LAN?



- A. ip route 10.0.0.64 255.255.255.192 10.0.20.3
- B. ip route 10.0.15.0 255.255.255.0 10.0.20.1
- C. ip route 10.0.15.0 255.255.255.192 10.0.20.1
- D. ip route 10.0.15.0 255.255.255.0 10.0.20.3

**Answer:** D

**Explanation:**

We need to specify the destination network (10.0.15.0/24) and the next hop IP of the router to get to that network (10.0.20.3).

**QUESTION 916**

Drag and Drop Question

Drag and drop the functions of SNMP fault-management from the left onto the definitions on the right.

|                                   |                                                                                         |
|-----------------------------------|-----------------------------------------------------------------------------------------|
| event correlation and aggregation | The administrator can manually intervene at the source of the fault.                    |
| fault detection                   | The network management system launches a preconfigured script to restore functionality. |
| fault diagnosis and isolation     | The system groups alarms from related issues.                                           |
| problem resolution                | The system identifies performance degradation or service interruption.                  |
| restoration of service            | The system reports on the source of the issue.                                          |

**Answer:**

problem resolution

restoration of service

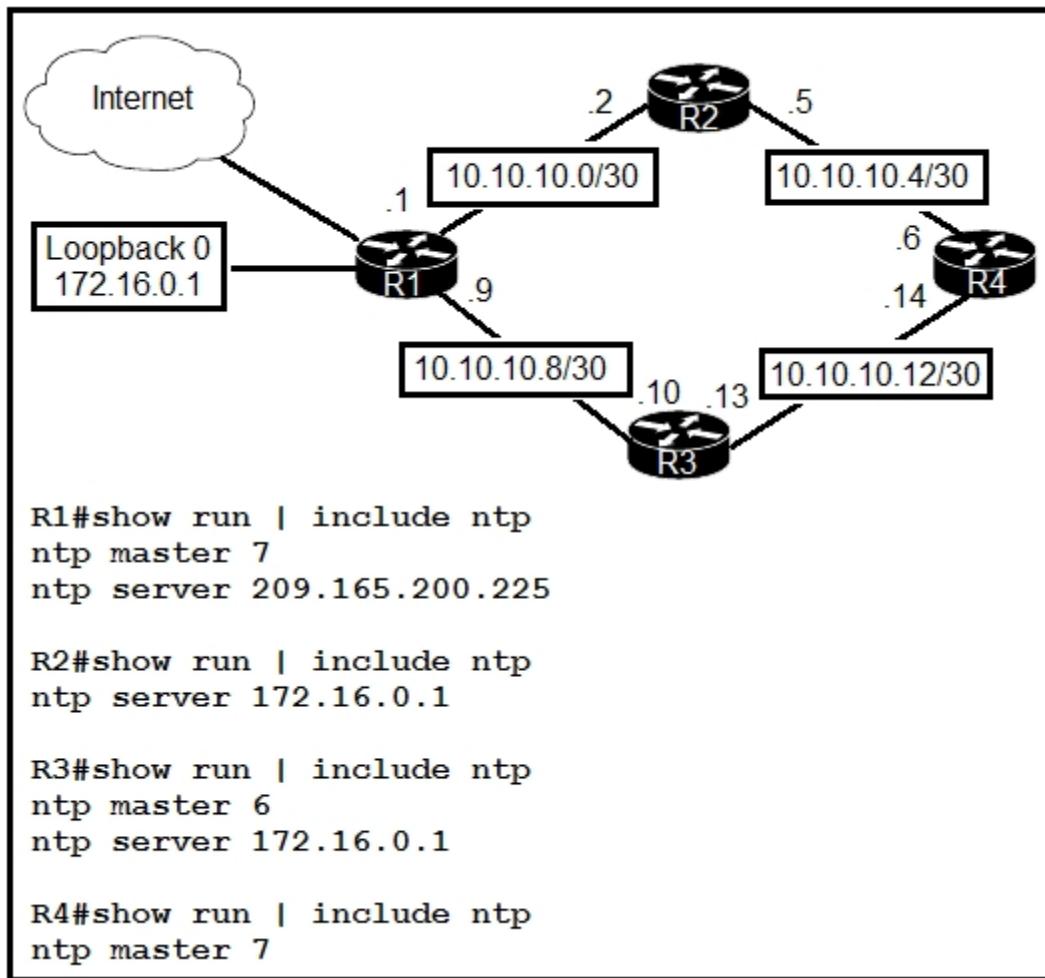
event correlation and aggregation

fault detection

fault diagnosis and isolation

**QUESTION 917**

Refer to the exhibit. Which router or router group are NTP clients?



- A. R1
- B. R2 and R3
- C. R1, R3, and R4
- D. R1, R2, and R3

**Answer:** D

#### QUESTION 918

Refer to the exhibit. What is the next step to complete the implementation for the partial NAT configuration shown?

```
CPE1# show protocols e0/1
Ethernet0/1 is up, line protocol is up
 Internet address is 10.0.12.2/24

CPE1# show ip access-list LAN
Standard IP access list LAN
 10 permit 10.0.12.0, wildcard bits 0.0.0.255

CPE1# show ip nat translations

CPE1# show ip nat statistics
Total active translations: 0 (0 static, 0 dynamic; 0 extended)
Peak translations: 0
Outside interfaces:
Inside interfaces:
 Ethernet0/1
 Hits: 0 Misses: 0
 CEF Translated packets: 0, CEF Punted packets: 0
 Expired translations: 0
 Dynamic mappings:
 -- Inside Source
 [Id: 1] access-list LAN pool NATPOOL refcount 0
 pool NATPOOL: netmask 255.255.255.0
 start 198.51.100.11 end 198.51.100.20
 type generic, total addresses 10, allocated 0 (0%), misses 0

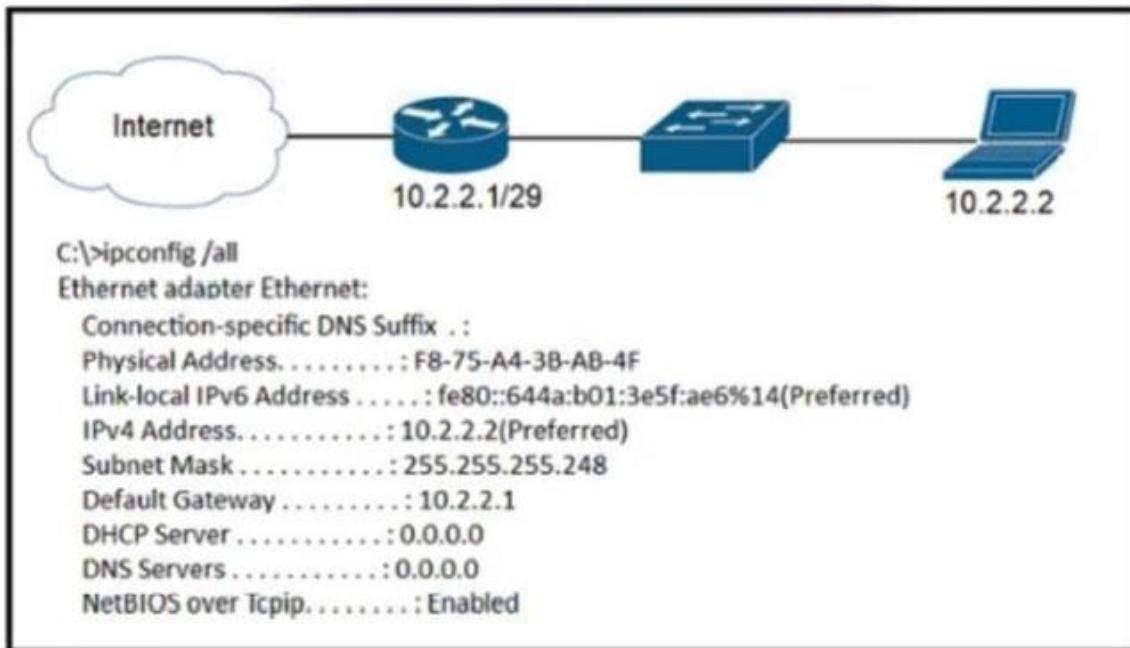
 Total doors: 0
 Appl doors: 0
 Normal doors: 0
 Queued Packets: 0
```

- A. Modify the access list for the internal network on e0/1.
- B. Reconfigure the static NAT entries that overlap the NAT pool.
- C. Apply the ACL to the pool configuration.
- D. Configure the NAT outside interface.

**Answer:** D

#### QUESTION 919

Refer to the exhibit. A newly configured PC fails to connect to the internet by using TCP port 80 to www.cisco.com. Which setting must be modified for the connection to work?



- A. Subnet Mask
- B. DNS Servers
- C. Default Gateway
- D. DHCP Servers

**Answer:** B

**QUESTION 920**

Drag and Drop Question

Drag and drop the statements about AAA from the left onto the corresponding AAA services on the right. Not all options are used.

It supports local, PPP, RADIUS, and TACACS+ options

It tracks the services that a user is using.

It records the amount of network resources consumed by the user.

It assigns per-user attributes.

It permits and denies login attempts.

### Accounting



### Authentication



**Answer:**

### Accounting

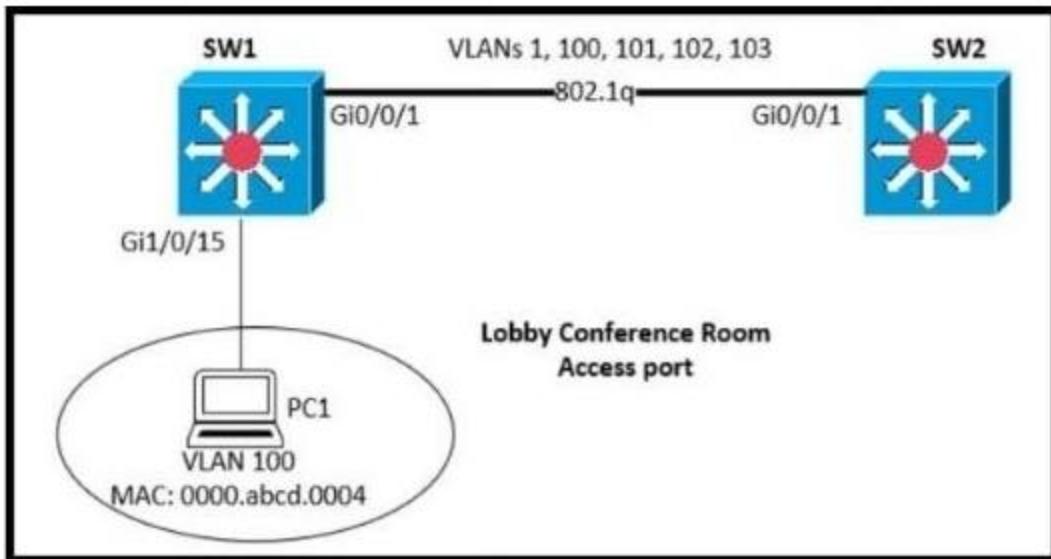


### Authentication



### QUESTION 921

SW1 supports connectivity for a lobby conference room and must be secured. The engineer must limit the connectivity from PC1 to the SW1 and SW2 network. The MAC addresses allowed must be limited to two. Which configuration secures the conference room connectivity?



- A. interface gi1/0/15  
switchport port-security  
switchport port-security maximum 2
- B. interface gi1/0/15  
switchport port-security  
switchport port-security mac-address 0000.abcd.0004 vlan 100
- C. interface gi1/0/15  
switchport port-security mac-address 0000.abcd.0004 vlan 100
- D. interface gi1/0/15  
switchport port-security mac-address 0000.abcd.0004 vlan 100  
interface switchport secure-mac limit 2

**Answer:** A

#### QUESTION 922

Refer to the exhibit. An engineer is updating the management access configuration of switch SW1 to allow secured, encrypted remote configuration. Which two commands or command sequences must the engineer apply to the switch? (Choose two.)

```
SW1#show run
Building configuration...
!
hostname SW1
!
ip domain-name CCNA-test
!
username CCNA privilege 1 password 0 cisco123
!
interface FastEthernet0/1
 switchport access vlan 10
!
interface Vlan10
 ip address 192.168.1.2 255.255.255.0
!
line vty 0 4
 login local
 transport input telnet
line vty 5 15
 login local
 transport input telnet

SW1#show crypto key mypubkey rsa
% Key pair was generated at: 0:1:23 UTC Mar 1 2020
Key name: SW1.CCNA-test
```

- A. SW1(config)#enable secret ccnaTest123
- B. SW1(config)#username NEW secret R3mote123
- C. SW1(config)#line vty 0 15  
SW1(config-line)#transport input ssh
- D. SW1(config)# crypto key generate rsa
- E. SW1(config)# interface f0/1  
SW1(config-if)# switchport mode trunk

**Answer:** BC

**QUESTION 923**

Refer to the exhibit. What is identified by the word `switch` within line 2 of the JSON Schema?

```
1 [
2 { "switch": "3750", "port": e2 },
3 { "router": "2951", "port": e20 }.
4 { "switch": "3750", "port": e23 }
5]
```

- A. array
- B. value
- C. object
- D. key

**Answer:** B

**Explanation:**

Key-value pairs have a colon between them as in "key" : "value".

**QUESTION 924**

Refer to the exhibit. Which type of JSON data is shown?

```
{"Employee's name": "Arthur"}
```

- A. boolean
- B. array
- C. key
- D. object

**Answer:** D

**QUESTION 925**

Drag and Drop Question

Drag and drop the characteristics from the left onto the technology types on the right.

This type of technology provides automation across multiple technologies and domains.

This type of technology enables consistent configuration of infrastructure resources.

Puppet is used for this type of technology.

Ansible is used for this type of technology.

**Configuration Management****Orchestration****Answer:****Configuration Management**

This type of technology enables consistent configuration of infrastructure resources.

Puppet is used for this type of technology.

**Orchestration**

This type of technology provides automation across multiple technologies and domains.

Ansible is used for this type of technology.

**QUESTION 926**

Drag and Drop Question

Drag and drop the REST API call methods for HTTP from the left onto the actions they perform

on the right. Not all methods are used.

|        |                                    |
|--------|------------------------------------|
| DELETE | creates a resource on the server   |
| GET    | reads data from the server         |
| POST   | removes a resource from the server |
| PUT    | updates an entry in the database   |
| PATCH  |                                    |

**Answer:**

|        |
|--------|
| POST   |
| GET    |
| DELETE |
| PUT    |
| PATCH  |

**QUESTION 927**

Drag and Drop Question

Drag and drop the REST principles from the left onto their definitions on the right.

|                   |                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------|
| cacheable         | divides architecture components into the consumers and producers of a service                   |
| client-server     | divides the architecture into a hierarchy of levels                                             |
| layered system    | enables the client to reuse a previous response for subsequent equivalent requests              |
| stateless         | operates without any stored session information on the server                                   |
| uniform interface | simplifies the communication between components, regardless of the architecture supporting them |

**Answer:**

|                   |
|-------------------|
| layered system    |
| cacheable         |
| uniform interface |
| stateless         |
| client-server     |

#### QUESTION 928

Drag and Drop Question

Drag and drop the Ansible terms from the left onto the right.

|              |                                                                                            |
|--------------|--------------------------------------------------------------------------------------------|
| control node | collection of actions to perform on target devices, expressed in YAML format               |
| inventory    | device with Ansible installed that manages target devices                                  |
| managed node | network device, without Ansible installed, upon which commands can be executed             |
| module       | specific action to be performed on one or more target devices                              |
| playbook     | unit of Python code to be executed                                                         |
| task         | Ansible file that defines the target devices upon which commands and tasks can be executed |

**Answer:**

|              |
|--------------|
| playbook     |
| managed node |
| control node |
| task         |
| module       |
| inventory    |

**QUESTION 929**

Refer to the exhibit. How many objects keys, and JSON list values are present?

```
{
 "Test_Questions" : [
 "Automation",
 "Configuration",
],
 "Test_Exam_Level" : [
 "CCNA",
 "CCNP",
],
 "Test_Response" : [
 "Correct",
 "Incorrect",
],
}
```

- A. Three objects, two keys, and three JSON list values
- B. Three objects, three keys, and two JSON list values
- C. One object, three keys, and three JSON list values
- D. One object, three keys, and two JSON list values

**Answer:** C

**QUESTION 930**

Drag and Drop Question

Drag and drop the statements about networking from the left onto the corresponding networking types on the right.

Maintenance costs are higher than with other networking options.

This type provides a centralized view of the network.

This type implements changes individually at each device.

This type leverages controllers to handle network management.

**Traditional Networking****Controller-Based Networking**

**Answer:**

**Traditional Networking**

Maintenance costs are higher than with other networking options.

This type implements changes individually at each device.

**Controller-Based Networking**

This type provides a centralized view of the network.

This type leverages controllers to handle network management.

**QUESTION 931**

Refer to the exhibit. A network engineer must configure NETCONF. After creating the configuration, the engineer gets output from the command show line but not from show running-config. Which command completes the configuration?

```
Device# configure terminal
Device(config)# netconf ssh acl 1
Device(config)# netconf lock-time 100
Device(config)# netconf max-sessions 1
Device(config)# netconf ma-message 10
```

- A. Device(config)# netconf lock-time 500
- B. Device(config)# netconf max-message 1000
- C. Device(config)# no netconf ssh acl 1
- D. Device(config)# netconf max-sessions 100

**Answer:** B

**QUESTION 932**

Which functionality is provided by the console connection on a Cisco WLC?

- A. out-of-band management
- B. secure in-band connectivity for device administration
- C. unencrypted in-band connectivity for file transfers
- D. HTTP-based GUI connectivity

**Answer:** B

**QUESTION 933**

What determines the sequence in which materials are planned during the material requirements planning (MRP) run?

- A. The control parameters of the MRP run
- B. The creation date of the materials
- C. The low-level code of the materials
- D. The replenishment lead time of the materials

**Answer:** C

**QUESTION 934**

Refer to the exhibit. After configuring a new static route on the CPE. The engineer entered this series of commands to verify that the new configuration is operating normally.

When is the static default route installed into the routing table?

```
Known via "connected", distance 0, metric 0 (connected, via interface)
Routing Descriptor Blocks:
 * directly connected, via Ethernet0/1
 Route metric is 0, traffic share count is 1

CPE# ping 203.0.113.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 203.0.113.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms

CPE# show ip route
Gateway of last resort is 198.51.100.1 to network 0.0.0.0
B* 0.0.0.0/0 [20/0] via 198.51.100.1, 00:02:07
 198.51.100.0/24 is variably subnetted, 2 subnets, 2 masks
C 198.51.100.0/30 is directly connected, Ethernet0/0
L 198.51.100.2/32 is directly connected, Ethernet0/0
 203.0.113.0/24 is variably subnetted, 2 subnets, 2 masks
C 203.0.113.0/30 is directly connected, Ethernet0/1
L 203.0.113.2/32 is directly connected, Ethernet0/1
```

- A. when 203.0.113.1 is no longer reachable as a next hop
- B. when the default route learned over external BGP becomes invalid
- C. when a route to 203.0.113.1 is learned via BGP
- D. when the default route over external BGP changes its next hop

**Answer:** A

#### QUESTION 935

How does encryption protect the wireless network?

- A. via integrity checks to identify wireless forgery attacks in the frame
- B. via specific ciphers to detect and prevent zero-day network attacks
- C. via an algorithm to change wireless data so that only the access point and client understand it
- D. via a policy to prevent unauthorized users from communicating on the wireless network

**Answer:** C

#### QUESTION 936

Which two cable types must be used to connect an access point to the WLC when 2.5-Gbps and 5-Gbps upload speeds are required? (Choose two.)

- A. 10GBASE-T
- B. 1000BASE-LX/LH
- C. Cat 5e
- D. Cat 5
- E. Cat 3

**Answer:** AC

**QUESTION 937**

An engineer must update the configuration on two PCs in two different subnets to communicate locally with each other. One PC is configured with IP address 192.168.25.128/25 and the other with 192.168.25.100/25.

Which network mask must the engineer configure on both PCs to enable the communication?

- A. 255.255.255.248
- B. 255.255.255.224
- C. 255.255.255.0
- D. 255.255.255.252

**Answer:** C

**QUESTION 938**

A packet from a company's branch office is destined to host 172.31.0.1 at headquarters. The sending router has three possible matches in its routing table for the packet: prefixes 172.31.0.0/16, 172.31.0.0/24, and 172.31.0.0/25. How does the router handle the packet?

- A. It sends the traffic via prefix 172.31.0.0/16
- B. It sends the traffic via the default gateway 0.0.0.0/0
- C. It sends the traffic via prefix 172.31.0.0/24
- D. It sends the traffic via prefix 172.31.0.0/25

**Answer:** D

**QUESTION 939**

Which key function is provided by the data plane?

- A. Originating packets
- B. Exchanging routing table data
- C. Making routing decisions
- D. Forwarding traffic to the next hop

**Answer:** D

**QUESTION 940**

In a cloud-computing environment what is rapid elasticity?

- A. control and monitoring of resource consumption by the tenant
- B. automatic adjustment of capacity based on need
- C. pooling resources in a multitenant model based on need
- D. self-service of computing resources by the tenant

**Answer:** B

**QUESTION 941**

What is a reason to implement IPv4 private addressing?

- A. Reduce the risk of a network security breach

- B. Comply with PCI regulations
- C. Comply with local law
- D. Reduce the size of the forwarding table on network routers

**Answer:** D

**QUESTION 942**

A client experiences slow throughput from a server that is directly connected to the core switch in a data center. A network engineer finds minimal latency on connections to the server, but data transfers are unreliable, and the output of the show interfaces counters errors command shows a high FCS-Err count on the interface that is connected to the server.

What is the cause of the throughput issue?

- A. a physical cable fault
- B. a speed mismatch
- C. high bandwidth usage
- D. a cable that is too long

**Answer:** A

**QUESTION 943**

What is the purpose of configuring different levels of syslog for different devices on the network?

- A. to rate-limit messages for different severity levels from each device
- B. to set the severity of syslog messages from each device
- C. to identify the source from which each syslog message originated
- D. to control the number of syslog messages from different devices that are stored locally

**Answer:** B

**QUESTION 944**

What are two reasons to implement IPv4 private addressing on a network? (Choose two.)

- A. To enable internal applications to treat the private IPv4 addresses as unique
- B. To facilitate renumbering when merging networks
- C. To expand the routing table on the router
- D. To provide protection from external denial-of-service attacks
- E. To conserve global unique IPv4 addresses

**Answer:** AE

**Explanation:**

Private IPv4 addresses weren't created to be a form of protection. Its primary purpose was to enable internal networks to communicate while conserving public IPv4 addresses.

It fits this narrative as multiple businesses could share the same private IP addresses and their application would still be able to communicate without interfering with other businesses thus it's unique to their internal applications.

**QUESTION 945**

Which concern is addressed with the use of private IPv4 addressing?

- A. Lack of routing protocol support for CIDR and VLSM
- B. Lack of security protocols at the network perimeter
- C. Lack of available TCP/UDP ports per IPv5 address
- D. Lack of available publicly routable unique IPv4 address

**Answer:** D

**QUESTION 946**

What is the path for traffic sent from one user workstation to another workstation on a separate switch in a three-tier architecture model?

- A. access - core - distribution - access
- B. access - distribution - distribution - access
- C. access - core - access
- D. access - distribution - core - distribution - access

**Answer:** B

**QUESTION 947**

Refer to the exhibit. When router R1 receives a packet with destination IP address 10.56.0.62 through which interface does it route the packet?

**R1#**

**Gateway of last resort is 10.56.0.1 to network 0.0.0.0**

```
S* 0.0.0.0/0 [1/0] via 10.56.0.1
 10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C 10.56.0.0/16 is directly connected, Null0
C 10.56.0.0/26 is directly connected, Vlan58
C 10.56.0.0/17 is directly connected, Vlan59
C 10.56.0.0/24 is directly connected, Vlan60
```

- A. Null0
- B. Vlan58
- C. Vlan60
- D. Vlan59

**Answer:** B

**QUESTION 948**

What are two features of the DHCP relay agent? (Choose two.)

- A. assigns DNS locally and then forwards request to DHCP server
- B. permits one IP helper command under an individual Layer 3 interface

- C. allows only MAC-to-IP reservations to determine the local subnet of a client
- D. minimizes the necessary number of DHCP servers
- E. configured under the Layer 3 interface of a router on the client subnet

**Answer:** BE

**QUESTION 949**

Which is a fact related to FTP?

- A. It uses block numbers to identify and mitigate data-transfer errors
- B. It always operates without user authentication
- C. It relies on the well-known UDP port 69.
- D. It uses two separate connections for control and data traffic

**Answer:** D

**QUESTION 950**

Which switching concept is used to create separate broadcast domains?

- A. STP
- B. VTP
- C. VLAN
- D. CSMA/CD

**Answer:** C

**QUESTION 951**

Refer to the exhibit. A packet sourced from 172.18.33.2 is destined for 172.18.32.38. Where does the router forward the packet?

```
router# show ip route
...
D 172.18.32.0/26 [90/25789217] via 10.1.1.1
R 172.18.32.0/24 [120/4] via 10.1.1.2
O 172.18.32.0/19 [110/229840] via 10.1.1.3
C 172.18.32.32/32 is directly connected, Loopback0
C 172.18.32.36/30 is directly connected, GigabitEthernet0/0
L 172.18.32.37/32 is directly connected, GigabitEthernet0/0
```

- A. GigabitEthernet0/0
- B. Loopback0
- C. 10.1.1.1

D. 10.1.1.3

**Answer:** B

**QUESTION 952**

Which command configures the Cisco WLC to prevent a serial session with the WLC CLI from being automatically logged out?

- A. config sessions maxsessions 0
- B. config sessions timeout 0
- C. config serial timeout 0
- D. config serial timeout 9600

**Answer:** B

**QUESTION 953**

Refer to the exhibit. How many JSON objects are presented?

```
{
 "SW1" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"],
 "SW2" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"],
 "SW3" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"],
 "SW4" : ["Ten-GigabitEthernet0/0", "Ten-GigabitEthernet0/1"]
}
```

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

**Answer:** D

**QUESTION 954**

Which enhancement is implemented in WPA3?

- A. applies 802.1x authentication
- B. uses TKIP
- C. employs PKI to identify access points
- D. protects against brute force attacks

**Answer:** D

**QUESTION 955**

What must be considered for a locally switched FlexConnect AP if the VLANs that are used by the AP and client access are different?

- A. The APs must be connected to the switch with multiple links in LAG mode
- B. The switch port mode must be set to trunk
- C. The native VLAN must match the management VLAN of the AP
- D. IEEE 802.10 trunking must be disabled on the switch port.

**Answer:** C

**QUESTION 956**

Which type of port is used to connect the wired network when an autonomous AP maps two VLANs to its WLANs?

- A. access
- B. LAG
- C. trunk
- D. EtherChannel

**Answer:** C

**QUESTION 957**

What is an advantage of using auto mode versus static mode for power allocation when an access point is connected to a PoE switch port?

- A. All four pairs of the cable are used
- B. It detects the device is a powered device
- C. The default level is used for the access point
- D. Power policing is enabled at the same time

**Answer:** D

**QUESTION 958**

Which protocol must be implemented to support separate authorization and authentication solutions for wireless APs?

- A. RADIUS
- B. TACACS+
- C. 802.1X
- D. Kerberos

**Answer:** B

**Explanation:**

Authentication and Authorization

RADIUS combines authentication and authorization. The access-accept packets sent by the RADIUS server to the client contain authorization information. This makes it difficult to decouple authentication and authorization.

TACACS+ uses the AAA architecture, which separates AAA. This allows separate authentication solutions that can still use TACACS+ for authorization and accounting. For example, with TACACS+, it is possible to use Kerberos authentication and TACACS+ authorization and accounting. After a NAS authenticates on a Kerberos server, it requests authorization information from a TACACS+ server without having to re-authenticate. The NAS informs the TACACS+ server that it has successfully authenticated on a Kerberos server, and the server then provides

authorization information.

**QUESTION 959**

What is a function of an endpoint?

- A. It is used directly by an individual user to access network services
- B. It passes unicast communication between hosts in a network
- C. It transmits broadcast traffic between devices in the same VLAN
- D. It provides security between trusted and untrusted sections of the network.

**Answer:** A

**QUESTION 960**

What must a network administrator consider when deciding whether to configure a new wireless network with APs in autonomous mode or APs running in cloud-based mode?

- A. Autonomous mode APs are less dependent on an underlay but more complex to maintain than APs in cloud-based mode.
- B. Cloud-based mode APs rely on underlays and are more complex to maintain than APs in autonomous mode.
- C. Cloud-based mode APs are easy to deploy but harder to automate than APs in autonomous mode.
- D. Autonomous mode APs are easy to deploy and automate than APs in cloud-based mode.

**Answer:** A

**QUESTION 961**

Refer to the exhibit. Wireless LAN access must be set up to force all clients from the NA WLAN to authenticate against the local database. The WLAN is configured for local EAP authentication. The time that users access the network must not be limited. Which action completes this configuration?

The screenshot shows the Cisco Wireless Controller interface. The top navigation bar includes links for MONITOR, WLANs, CONTROLLER, WIRELESS, SECURITY (which is highlighted), MANAGEMENT, and COMM. On the left, a sidebar menu lists various AAA and RADIUS protocols, along with TACACS+, LDAP, and Local Net Users. The 'Local Net Users' option is selected, leading to a 'New' configuration page. This page contains fields for User Name (NA-User), Password, Confirm Password, Guest User (with a checked checkbox), Lifetime (seconds) (set to 86400), Guest User Role (unchecked), WLAN Profile (Any WLAN), and Description (For NA WLAN Auth).

- A. Uncheck the Guest User check box
- B. Check the Guest User Role check box

- C. Set the Lifetime (seconds) value to 0
- D. Clear the Lifetime (seconds) value

**Answer:** C

**QUESTION 962**

Which state is bypassed in Rapid PVST+ when PortFast is enabled on a port?

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

**Answer:** C

**QUESTION 963**

What happens when a switch receives a frame with a destination MAC address that recently aged out?

- A. The switch floods the frame to all ports in all VLANs except the port that received the frame.
- B. The switch floods the frame to all ports in the VLAN except the port that received the frame.
- C. The switch references the MAC address aging table for historical addresses on the port that received the frame.
- D. The switch drops the frame and learns the destination MAC address again from the port that received the frame.

**Answer:** B

**QUESTION 964**

What is a function of store-and-forward switching?

- A. It reduces latency by eliminating error checking within the frame
- B. It produces an effective level of error-free network traffic using CRCs.
- C. It buffers frames and forwards regardless of errors within the frames.
- D. It forwards a frame by checking only the destination MAC address

**Answer:** B

**QUESTION 965**

Which WLC interface provides out-of-band management in the Cisco Unified Wireless Network Architecture?

- A. AP-Manager
- B. service port
- C. dynamic
- D. virtual

**Answer:** B

**QUESTION 966**

Which mode must be set for Aps to communicate to a Wireless LAN Controller using the Control and Provisioning of Wireless Access Points (CAPWAP) protocol?

- A. route
- B. bridge
- C. lightweight
- D. autonomous

**Answer:** C

**QUESTION 967**

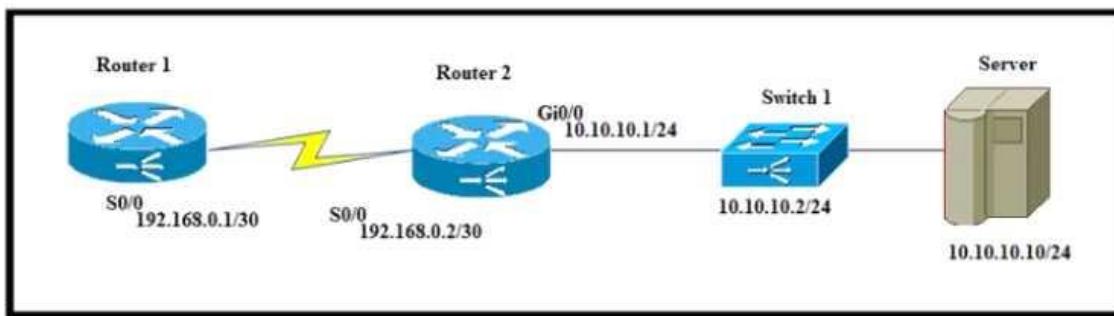
What are two reasons a switch experiences frame flooding? (Choose two.)

- A. A defective patch cable is connected to the switch port
- B. Topology changes are occurring within spanning-tree
- C. An aged MAC table entry is causing excessive updates
- D. Port-security is configured globally
- E. The forwarding table has overflowed

**Answer:** AB

**QUESTION 968**

Refer to the exhibit. A network engineer must configure router R1 with a host route to the server. Which command must the engineer configure?



- A. R1(confg)#lp route 10.10.10.0 255.255.255.0 192.168.0.2
- B. R1(Config)#lp route 10.10.10.10 265.255.255.255 192.168.0.2
- C. R1(config)#ip route 192.168.0.2 255.255.255.255 10.10.10.10
- D. R1(config)3|p route 0.0.0.0 0.0.0.0 192.168.0.2

**Answer:** B

**QUESTION 969**

A Cisco engineer at a new branch office is configuring a wireless network with access points that connect to a controller that is based at corporate headquarters. Wireless client traffic must terminate at the branch office and access-point survivability is required in the event of a WAN outage. Which access point mode must be selected?

- A. Lightweight with local switching disabled
- B. Local with AP fallback enabled
- C. OfficeExtend with high availability disabled
- D. FlexConnect with local switching enabled

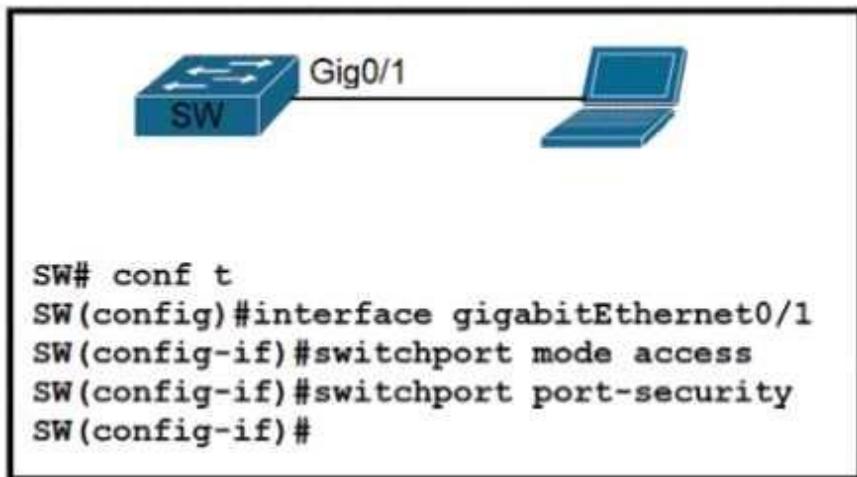
**Answer:** C

**QUESTION 970**

Refer to the exhibit. A network engineer started to configure port security on a new switch. These requirements must be met:

- \* MAC addresses must be learned dynamically
- \* Log messages must be generated without disabling the interface when unwanted traffic is seen

Which two commands must be configured to complete this task? (Choose two)



- A. SW(ccnfig-if)=switchport port-security mac-address sticky
- B. SW(confKj-if)=switchport port-security violation restrict
- C. SW(config.if)sswitchport port-security mac-address 0010.7B84.45E6
- D. SW(config-if)aswitchport port-security maximum 2
- E. SW(ccnfig-if)=switchport port-security violation shutdown

**Answer:** C

**QUESTION 971**

Which channel-group mode must be configured when multiple distribution interfaces connected to a WLC are bundled?

- A. Channel-group mode passive.
- B. Channel-group mode on.
- C. Channel-group mode desirable.
- D. Channel-group mode active.

**Answer:** B

**QUESTION 972**

Refer the exhibit. What is the cause of poor performance on router R19?

```
R19#sh int fa0/0
FastEthernet0/0 is up, line protocol is up
Hardware is DEC21140, address is ca02.7788.0000 (bia ca02.7788.0000)
Description: SALES_SUBNET
Internet address is 10.32.102.2/30
MTU 1500 bytes, BW 100000 Kbit/sec, DLY 100 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (60 sec)
Full-duplex, 100Mb/s, 100BaseTX/FX
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:01, output 00:00:00, output hang never
Last clearing of "show interface" counters never
Input queue: 0/300/0/0 (size/max/drops/flushes); Total output drops:
135298429
Queueing strategy: fifo
Output queue: 0/300 (size/max)
30 second input rate 0 bits/sec, 0 packets/sec
30 second output rate 0 bits/sec, 0 packets/sec
73310 packets input, 7101162 bytes
Received 73115 broadcasts (0 IP multicasts)
0 runts, 0 giants, 0 throttles
0 input errors, 4 CRC, 0 frame, 0 overrun, 0 ignored
0 watchdog
0 input packets with dribble condition detected
3927513096455 packets output, 14404034810952 bytes, 0 underruns
0 output errors, 11 collisions, 0 interface resets
```

- A. excessive collisions
- B. speed and duplex mismatch
- C. port oversubscription
- D. excessive CRC errors

**Answer:** A

**QUESTION 973**

What is a function of MAC learning on a switch?

- A. MAC address learning is disabled by default on all VLANs.
- B. Frames received for a destination MAC address not listed in the address table are dropped.

- C. The MAC address table is used to populate the ARP table.
- D. A static MAC address is manually added to the MAC table.

**Answer:** C

**QUESTION 974**

What is a similarity OM3 and OM4 fiber optical cable?

- A. Both have a 62.5 micron core diameter.
- B. Both have a 50 micron core diameter.
- C. Both have a 100 micron core diameter.
- D. Both have a 9 micron core diameter.

**Answer:** B

**QUESTION 975**

What does a switch do when it receives a frame whose destination MAC address is missing from the MAC address table?

- A. It changes the checksum of the frame to a value that indicates an invalid frame.
- B. It updates the CAM table with the destination MAC address of the frame.
- C. It appends the table with a static entry for the MAC and shuts down the port.
- D. It floods the frame unchanged across all remaining ports in the incoming VLAN.

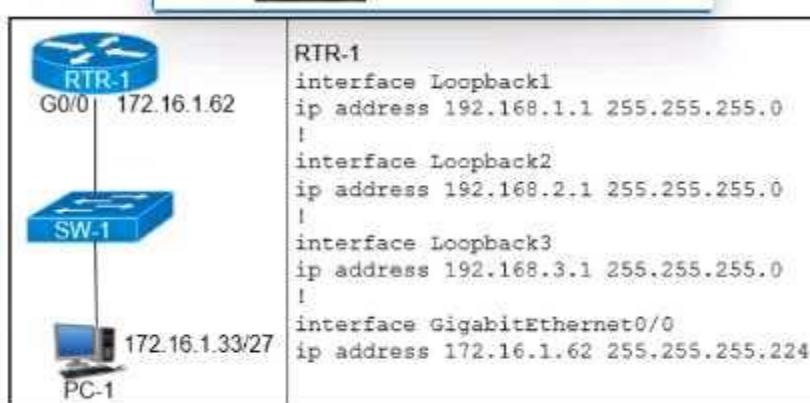
**Answer:** D

**Explanation:**

If the address is in the table, the frame is forwarded out the port associated with the MAC address in the table. When the DESTINATION MAC address is not found in the MAC address table, the switch forwards the frame out of all ports (flooding) except for the ingress port of the frame.

**QUESTION 976**

Refer to the exhibit. Which configuration for RTR-1 denies SSH access from PC-1 to any RTR-1 interface and allows all other traffic?



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

interface GigabitEthernet0/0  
ip access-group 100 in

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

line vty 0 15  
access-class 100 in

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

interface GigabitEthernet0/0  
ip access-group 100 in

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

line vty 0 15  
access-class 100 in

**Answer:** B

**QUESTION 977**

An engineer is configuring a switch port that is connected to a VoIP handset.  
Which command must the engineer configure to enable port security with a manually assigned MAC address of abcd-abcd on voice VLAN 4?

- A. switchport port-security mac-address abcd.abcd.abcd  
B. switchport port-security mac-address abed.abed.abed vlan 4  
C. switchport port-security mac-address sticky abcd.abcd.abcd vlan 4  
D. switchport port-security mac-address abcd.abcd.abcd vlan voice

**Answer:** A

**QUESTION 978**

By default, how long will the switch continue to know a workstation MAC address after the workstation stops sending traffic?

- A. 200 seconds  
B. 300 seconds  
C. 600 seconds  
D. 900 seconds

**Answer:** B

**QUESTION 979**

Refer to the exhibit. Which entry is the longest prefix match for host IP address 192.168.10.5?

| Entry # |                              |
|---------|------------------------------|
| 1       | 192.168.10.0 255.255.254.0   |
| 2       | 192.168.10.0 255.255.255.192 |
| 3       | 192.168.10.0 255.255.0.0     |
| 4       | 192.168.10.0 255.255.224.0   |

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

**Answer:** B

**QUESTION 980**

What is the function of northbound API?

- A. It upgrades software and restores files.
- B. It relies on global provisioning and configuration.
- C. It supports distributed processing for configuration.
- D. It provides a path between an SDN controller and network applications.

**Answer:** D

**QUESTION 981**

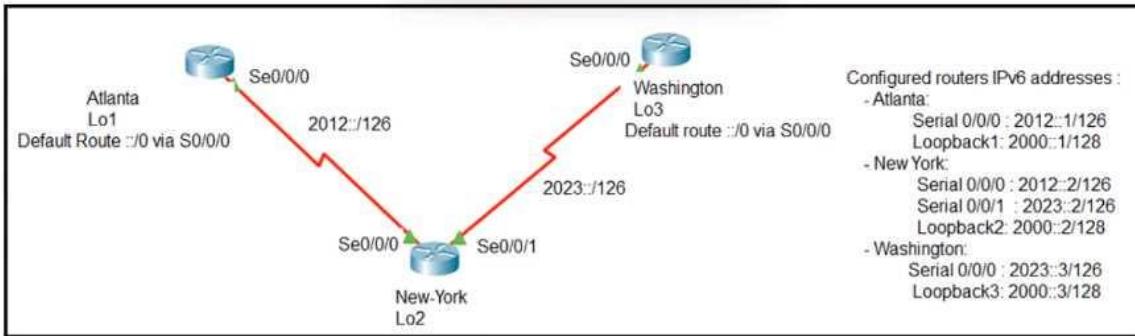
Which interface enables communication between a program on the controller and a program on the networking devices?

- A. northbound interface
- B. software virtual interface
- C. southbound interface
- D. tunnel Interface

**Answer:** B

**QUESTION 982**

Refer to the exhibit. The loopback1 interface of the Atlanta router must reach the lookback3 interface of the Washington router.



- A. ipv6 route 2000::1/128 2012::2
- B. ipv6 route 2000::1/128 2012::1
- C. ipv6 route 2000:3/123 s0/0/0
- D. ipv6 route 2000::3/128 2023::3
- E. ipv6 route 2000::1/128 s0/0/1

**Answer:** BD

### QUESTION 983

Refer to the exhibit. Which action by the router when a packet is sourced from 10.10.10.2 and destined 10.10.10.16?

```
Router1#show ip route
Gateway of last resort is not set
 209.165.200.0/27 is subnetted, 1 subnets
B 209.165.200.224 [20/0] via 10.10.12.2, 00:09:57
 10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C 10.10.10.0/28 is directly connected, GigabitEthernet0/0
C 10.10.11.0/30 is directly connected, FastEthernet2/0
O 10.10.13.0/24 [110/2] via 10.10.10.1, 00:08:34, GigabitEthernet0/0
C 10.10.12.0/30 is directly connected, GigabitEthernet0/1
```

- A. It queues the packets waiting for the route to be learned.
- B. It floods packets to all learned next hops.
- C. It discards the packets.
- D. It uses a route that is similar to the destination address.

**Answer:** D

### QUESTION 984

A project objective is to minimize the association time to the different access points as mobile devices move around the office. The ideal solution must cover numerous devices and device types, including laptops, mobile phones, tablets and wireless printers. What must be configured?

- A. 802.11v BSS Max Idle Service
- B. 802.11v Disassociation Imminent
- C. 802.11ax BSS configure

D. 802.11k neighbor List Dual Band

**Answer:** B

**QUESTION 985**

Which security method is used to prevent man-in-the-middle attack?

- A. authorization
- B. authentication
- C. anti-replay
- D. accounting

**Answer:** B

**QUESTION 986**

Which two protocols are used by an administrator for authentication and configuration on access points? (Choose two.)

- A. 802.1Q
- B. RADIUS
- C. Kerberos
- D. TACACS+
- E. 802.1x

**Answer:** BD

**QUESTION 987**

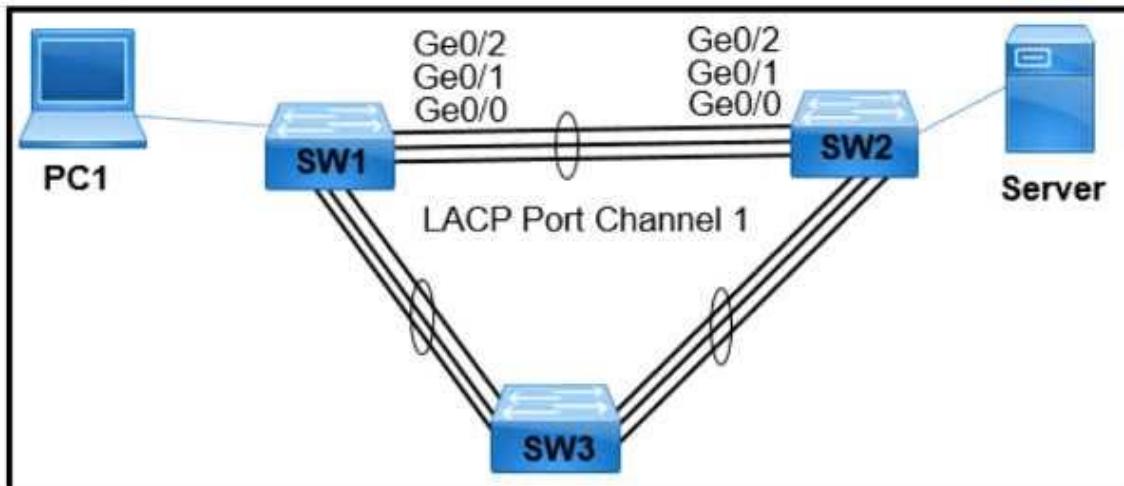
Which IPsec transport mode encrypts the IP header and the payload?

- A. pipe
- B. control
- C. transport
- D. tunnel

**Answer:** D

**QUESTION 988**

Refer to the exhibit. PC1 regularly sends 1800 Mbps of traffic to the server. A network engineer needs to configure the EtherChannel to disable Port Channel 1 between SW1 and SW2 when the Ge0/0 and Ge0/1 ports on SW2 go down. Which configuration must the engineer apply to the switch?

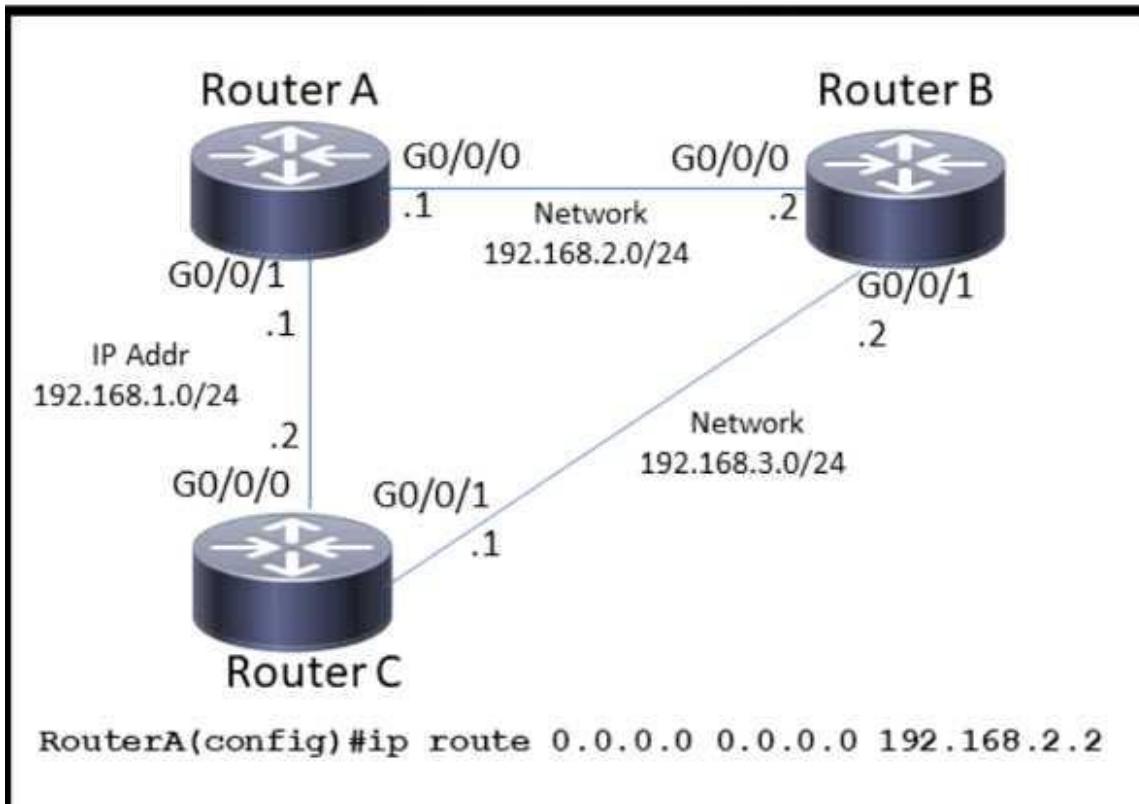


- A. **SW2# configure terminal**  
SW2(config)# interface port-channel 1  
SW2(config-if)# lacp port-priority 32000
- B. **SW2# configure terminal**  
SW2(config)# interface port-channel 1  
SW2(config-if)# lacp max-bundle 2
- C. **SW2# configure terminal**  
SW2(config)# lacp system-priority 32000
- D. **SW2# configure terminal**  
SW2(config)# interface port-channel 1  
SW2(config-if)# port-channel min-links 2

**Answer:** D

**QUESTION 989**

Refer to the exhibit. Which command must be enable a floating default route on router A?



- A. ip route 0.0.0.0 0.0.0.0 192.168.1.2
- B. ip default-gateway 192.168.2.1
- C. ip route 0.0.0.0 0.0.0.0 192.168.1.2 10
- D. ip route 0.0.0.0 0.0.0.0 192.168.2.1 10

**Answer:** C

#### QUESTION 990

Refer to the exhibit. How must OSPF be configured on the GigabitEthernet0/0 interface of the neighbor device to achieve.

##### Current Neighbor Relationship

| Neighbor ID | Pri | State   | Dead Time | Address     | Interface          |
|-------------|-----|---------|-----------|-------------|--------------------|
| 192.168.1.1 | 1   | FULL/DR | 00:00:33  | 192.168.1.1 | GigabitEthernet0/0 |

##### Desired Neighbor Relationship

| Neighbor ID | Pri | State   | Dead Time | Address     | Interface          |
|-------------|-----|---------|-----------|-------------|--------------------|
| 192.168.1.1 | 0   | FULL/ - | 00:00:31  | 192.168.1.1 | GigabitEthernet0/0 |

- A. Router(config)#**interface GigabitEthernet 0/0**  
Router(config-if)#ip ospf priority 1
- B. Router(config)#**interface GigabitEthernet 0/0**  
Router(config-if)#ip ospf 1 area 2
- C. Router(config)#**interface GigabitEthernet 0/0**  
Router(config-if)#ip ospf cost 5
- D. Router(config)#**interface GigabitEthernet 0/0**  
Router(config-if)#ip ospf network point-to-point

**Answer:** A

#### **QUESTION 991**

What is the purpose of using First Hop Redundancy Protocol on a specific subnet?

- A. ensures a loop-free physical topology
- B. filters traffic based on destination IP addressing
- C. sends the default route to the hosts on a network
- D. forwards multicast hello messages between routers

**Answer:** D

#### **QUESTION 992**

Which two features introduced in SNMPv2 provides the ability to retrieve large amounts of data in one request?

- A. Get
- B. GetNext
- C. Set
- D. GetBulk
- E. Inform

**Answer:** AD

#### **QUESTION 993**

Refer to the exhibit. A multivendor network exists and the company is implementing VoIP over the network for the first time.

- A. SW1(config)#no cdp enable  
SW1(config)#interface gigabitethernet1/0/1  
SW1(config-if)#cdp run

- B. SW1(config)#lldp enable  
SW1(config)#interface gigabitethernet1/0/1  
SW1(config-if)#lldp run
- C. SW1(config)#lldp run  
SW1(config)#interface gigabitethernet1/0/1  
SW1(config-if)#lldp enable
- D. SW1(config)#no cdp run  
SW1(config)#interface gigabitethernet1/0/1  
SW1(config-if)#lldp transmit  
SW1(config-if)#lldp receive

**Answer:** B

**QUESTION 994**

Refer to the exhibit. A network engineer must update the configuration on Switch2 so that it sends LLDP packets every minute and the information sent via LLDP is refreshed every 3 minutes. Which configuration must the engineer apply?

```
Switch2# show lldp
Global LLDP Information
 Status: ACTIVE
 LLDP advertisements are sent every 30 seconds
 LLDP hold time advertised is 120 seconds
 LLDP interface reinitialization delay is 2 seconds
```

- A. Switch2(config)#lldp timer 1  
Switch2(config)#lldp tlv-select 3
- B. Switch2(config)#lldp timer 1  
Switch2(config)#lldp holdtime 3
- C. Switch2(config)#lldp timer 60  
Switch2(config)#lldp holdtime 180
- D. > Switch2(config)#lldp timer 60  
Switch2(config)#lldp tlv-select 180

**Answer:** C

**QUESTION 995**

Which IPv6 address range is suitable for anycast addresses for distributed services such DHCP or DNS?

- A. FF00:1/12

- B. 2001:db8:0234:ca3e::1/128
- C. 2002:db84:3f37:ca98:be05:8/64
- D. FE80::1/10

**Answer:** A

**QUESTION 996**

A WLC sends alarms about a rogue AP, and the network administrator verifies that the alarms are caused by a legitimate autonomous AP. How must the alarms be stopped for the MAC address of the AP?

- A. Remove the AP from WLC management
- B. Place the AP into manual containment.
- C. Manually remove the AP from Pending state.
- D. Set the AP Class Type to Friendly.

**Answer:** D

**QUESTION 997**

When an access point is seeking to join wireless LAN controller, which message is sent to the AP-Manager interface?

- A. Discovery response
- B. DHCP request
- C. DHCP discover
- D. Discovery request

**Answer:** D

**QUESTION 998**

What is the primary purpose of private address space?

- A. conserve globally unique address space
- B. simplify the addressing in the network
- C. limit the number of nodes reachable via the Internet
- D. reduce network complexity

**Answer:** A

**QUESTION 999**

Refer to the exhibit. The P2P blocking action option is disabled on the WLC.

| General                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Security                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | QoS | Policy-Mapping                                                                                                                                                                                                                                                                            | Advanced                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Allow AAA Override<br><input checked="" type="checkbox"/> Coverage Hole Detection<br><input checked="" type="checkbox"/> Enable Session Timeout<br><input type="checkbox"/> Aironet IE<br><input type="checkbox"/> Diagnostic Channel<br><input type="checkbox"/> Override Interface ACL<br><input type="checkbox"/> Layer2 Ad<br><input type="checkbox"/> URL ACL<br><input type="checkbox"/> P2P Blocking Action<br><input checked="" type="checkbox"/> Client Exclusion<br><input type="checkbox"/> Maximum Allowed Clients<br><input type="checkbox"/> Static IP Tunneling<br><input type="checkbox"/> Wi-Fi Direct Clients Policy<br><input type="checkbox"/> Maximum Allowed Clients Per AP Radio | <input type="checkbox"/> Enabled<br><input checked="" type="checkbox"/> Enabled<br><input checked="" type="checkbox"/> 1800 Session Timeout (secs)<br><input type="checkbox"/> Enabled<br><input type="checkbox"/> Enabled<br><input type="checkbox"/> IPv4 None<br><input type="checkbox"/> IPv6 None<br><input type="checkbox"/> None<br><input type="checkbox"/> None<br><input type="checkbox"/> Disabled<br><input checked="" type="checkbox"/> Enabled<br><input type="checkbox"/> 0<br><input type="checkbox"/> Enabled<br><input type="checkbox"/> Disabled<br><input type="checkbox"/> 200 |     | <b>DHCP</b><br><input checked="" type="checkbox"/> DHCP Server<br><input checked="" type="checkbox"/> Override<br><input type="checkbox"/> 0.0.0.0<br><input type="checkbox"/> DHCP Server IP Addr<br><input type="checkbox"/> DHCP Addr. Assignment<br><input type="checkbox"/> Required | <b>Management Frame Protection (MFP)</b><br><input type="checkbox"/> MFP Client Protection<br><input type="checkbox"/> Optional<br><b>DTIM Period (in beacon intervals)</b><br><input type="checkbox"/> 802.11a/n (1 - 255) 1<br><input type="checkbox"/> 802.11b/g/n (1 - 255) 1 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     | <b>NAC</b><br><input type="checkbox"/> NAC State None                                                                                                                                                                                                                                     | <b>Load Balancing and Band Select</b><br><input type="checkbox"/> Client Load Balancing<br><input type="checkbox"/> Client Band Select                                                                                                                                            |

- A. Enable the Static IP Tunneling option.
- B. Disable the Coverage Hole Detection option.
- C. Check the DHCP Addr. Assignment check box.
- D. Set the P2P Blocking Action option to Forward-UpStream.

**Answer:** A

### QUESTION 1000

Which 802.11 frame type is Association Response?

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

**Answer:** A

**Explanation:**

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](https://en.wikipedia.org/wiki/802.11_Frame_Types)

### QUESTION 1001

What is a reason to configure a trunk port that connects to a WLC distribution port?

- A. Eliminate redundancy with a link failure in the data path.
- B. Allow multiple VLAN to be used in the data path.
- C. Provide redundancy if there is a link failure for out-of-band management.
- D. Permit multiple VLANs to provide out-of-band management.

**Answer:** D

**QUESTION 1002**

What is a purpose of traffic shaping?

- A. It enables dynamic flow identification.
- B. It enables policy-based routing.
- C. It provides best-effort service.
- D. It limits bandwidth usage.

**Answer:** A

**QUESTION 1003**

What is a characteristic of a collapsed-core network topology?

- A. It allows the core and distribution layers to run as a single combined layer.
- B. It enables the core and access layers to connect to one logical distribution device over an EtherChannel.
- C. It enables all workstations in a SOHO environment to connect on a single switch with internet access.
- D. It allows wireless devices to connect directly to the core layer, which enables faster data transmission.

**Answer:** B

**QUESTION 1004**

To improve corporate security, an organization is planning to implement badge authentication to limit access to the data center. Which element of a security program is being deployed?

- A. user training
- B. user awareness
- C. vulnerability verification
- D. physical access control

**Answer:** D

**QUESTION 1005**

Which SDN plane forwards user-generated traffic?

- A. Management plane
- B. Control plane
- C. Policy plane
- D. Data plane

**Answer:** D

**QUESTION 1006**

Refer to the exhibit. An engineer executed the script and added commands that were not necessary for SSH and now must remove the commands.

```
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. metric
- B. cost
- C. longest prefix
- D. administrative distance

**Answer:** D

**QUESTION 1007**

Which cipher is supported for wireless encryption only with the WPA2 standard?

- A. AES256
- B. AES
- C. RC4
- D. SHA

**Answer:** B

**QUESTION 1008**

What is a specification for SSIDS?

- A. They are a Cisco proprietary security feature.
- B. They must include one number and one letter.
- C. They define the VLAN on a switch.
- D. They are case sensitive.

**Answer:** B

**QUESTION 1009**

Refer to the exhibit. How does router R1 handle traffic to the 172.16.1.4/30 subnet?

- A. It sends all traffic over the path via 172.16.9.5 using 172.16.4.4 as a backup.
- B. It sends all traffic over the path via 10.0.1.100.
- C. It load-balances traffic over 172.16.9.5 and 172.16.4.4.
- D. It sends all traffic over the path via 172.16.4.4.

**Answer:** C

**QUESTION 1010**

An application in the network is being scaled up from 300 servers to 600. Each server requires 3 network connections to support production, backup, and management traffic. Each connection resides on a different subnet. The router configuration for the production network must be

configured first using a subnet in the 10.0.0.0/8 network.

Which command must be configured on the interface of the router to accommodate the requirements and limit wasted IP address space?

- A. ip address 10.10.10.1 255.255.254.0
- B. ip address 10.10.10.1 255.255.252.0
- C. ip address 10.10.10.1 255.255.240.0
- D. ip address 10.10.10.1 255.255.255.240

**Answer:** B

**QUESTION 1011**

Which device segregates a network into separate zones that have their own security policies?

- A. IPS
- B. firewall
- C. access point
- D. switch

**Answer:** C

**QUESTION 1012**

Refer to the exhibit. A packet sourced from 10.10.10.32 is destined for the internet.

```
Gateway of last resort is 172.16.2.2 to network 0.0.0.0

 10.0.0.0/8 is variably subnetted, 3 subnets, 3 masks
 10.10.100.0/26 is directly connected, GigabitEthernet0/0/6
 C 10.10.10.0/24 is directly connected, GigabitEthernet0/0/0
 L 10.10.10.3/32 is directly connected, GigabitEthernet0/0/0
 172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
 S 172.16.1.33/32 is directly connected, GigabitEthernet0/0/1
 C 172.16.2.0/23 is directly connected, GigabitEthernet0/0/1
 L 172.16.2.1/32 is directly connected, GigabitEthernet0/0/1
S* 0.0.0.0/0 [1/0] via 172.16.2.2
```

- A. 0
- B. 1
- C. 2
- D. 32

**Answer:** B

**QUESTION 1013**

Why implement VRRP?

- A. To hand over to end users the autodiscovery of virtual gateways

- B. To provide end users with a virtual gateway in a multivendor network
- C. To leverage a weighting scheme to provide uninterrupted service
- D. To detect link failures without the overhead of Bidirectional Forwarding Detection

**Answer:** B

**QUESTION 1014**

Which type of address is shared by routers in a HSRP implementation and used by hosts on the subnet as their default gateway address?

- A. multicast address
- B. virtual IP address
- C. loopback IP address
- D. broadcast address

**Answer:** B

**QUESTION 1015**

Which type of IPv4 address type helps to conserve the globally unique address classes?

- A. multicast
- B. private
- C. loopback
- D. public

**Answer:** B

**QUESTION 1016**

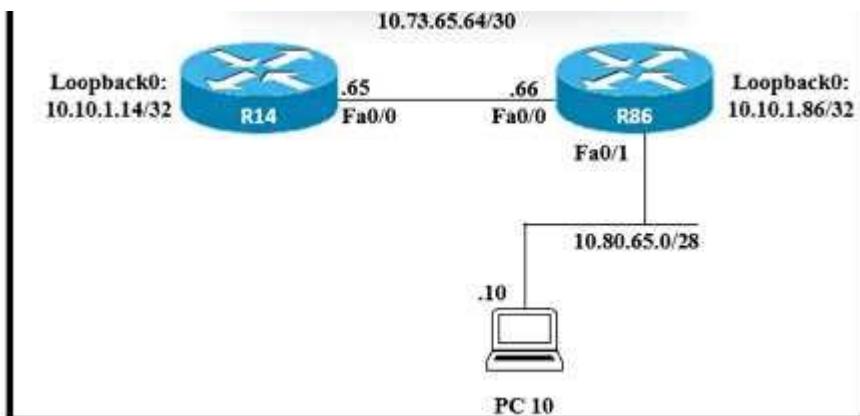
Which advantage does the network assurance capability of Cisco DNA Center provide over traditional campus management?

- A. Cisco DNA Center correlates information from different management protocols to obtain insights, and traditional campus management requires manual analysis.
- B. Cisco DNA Center handles management tasks at the controller to reduce the load on infrastructure devices, and traditional campus management uses the data backbone.
- C. Cisco DNA Center leverages YANG and NETCONF to assess the status of fabric and nonfabric devices, and traditional campus management uses CLI exclusively.
- D. Cisco DNA Center automatically compares security postures among network devices, and traditional campus management needs manual comparisons.

**Answer:** C

**QUESTION 1017**

Refer to the exhibit. Router R14 is in the process of being configured.  
Which configuration must be used to establish a host route to PC 10?



- A. ip route 10.80.65.10 255.255.255.254 10.80.65.1
- B. ip route 10.80.65.10 255.255.255.255 10.73.65.66
- C. ip route 1073.65.65 255.0.0.0 10.80.65.10
- D. ip route 10.73.65.66 0.0.0.255 10.80.65.10

**Answer:** B

#### QUESTION 1018

What is the put method within HTTP?

- A. It is a read-only operation.
- B. It is a nondempotent operation.
- C. It replaces data at the destination.
- D. It displays a web site.

**Answer:** D

#### QUESTION 1019

By default, which virtual MAC address does HSRP group 14 use?

- A. 00:05:5e:19:0c:14
- B. 00:05:0c:07:ac:14
- C. 04:15:26:73:3c:0e
- D. 00:00:0c:07:ac:0e

**Answer:** D

#### QUESTION 1020

What does the implementation of a first-hop redundancy protocol protect against on a network?

- A. default gateway failure
- B. BGP neighbor flapping
- C. spanning-tree loops
- D. root-bridge loss

**Answer:** A

**QUESTION 1021**

Which benefit does Cisco ONA Center provide over traditional campus management?

- A. Cisco DNA Center leverages SNMPv3 for encrypted management, and traditional campus management uses SNMPv2.
- B. Cisco DNA Center automates HTTPS for secure web access, and traditional campus management uses HTTP.
- C. Cisco DNA Center leverages APIs, and traditional campus management requires manual data gathering.
- D. Cisco DNA Center automates SSH access for encrypted entry, and SSH is absent from traditional campus management.

**Answer:** B

**QUESTION 1022**

Refer to the exhibit. An administrator received a call from a branch office regarding poor application performance hosted at the headquarters. Ethernet 1 is connected between Router1 and the LAN switch. What identifies the issue?

```
Last clearing of "show interface" counters never
Input queue: 1/75/1/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: random early detection(RED)
Output queue :0/40 (size/max)
5 minute input rate 1000 bits/sec, 2 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 7558065 packets input, 783768942 bytes, 1 no buffer
 Received 8280963 broadcasts, 0 runts, 0 giants, 1 throttles
 15 input errors, 14278 CRC, 0 frame, 0 overrun, 3 ignored
 0 input packets with dribble condition detected
 798092 packets output, 50280266 bytes, 0 underruns
 0 output errors, 15000 collisions, 0 interface resets
 0 babbles, 0 late collision, 179 deferred
 0 lost carrier, 0 no carrier
 0 output buffer failures, 0 output buffers swapped out
```

- A. The QoS policy is dropping traffic.
- B. There is a duplex mismatch.
- C. The link is over utilized.
- D. The MTU is not set to the default value.

**Answer:** C

**QUESTION 1023**

In QoS, which prioritization method is appropriate for interactive voice and video?

- A. traffic policing
- B. round-robin scheduling
- C. low-latency queuing
- D. expedited forwarding

**Answer:** C

**Explanation:**

Low Latency Queuing (LLQ) is the preferred queuing policy for VoIP audio. Given the stringent delay/jitter sensitive requirements of voice and video and the need to synchronize audio and video for CUVA, priority (LLQ) queuing is the recommended for all video traffic as well. Note that, for video, priority bandwidth is generally fudged up by 20% to account for the overhead.

**QUESTION 1024**

The clients and DHCP server reside on different subnets.

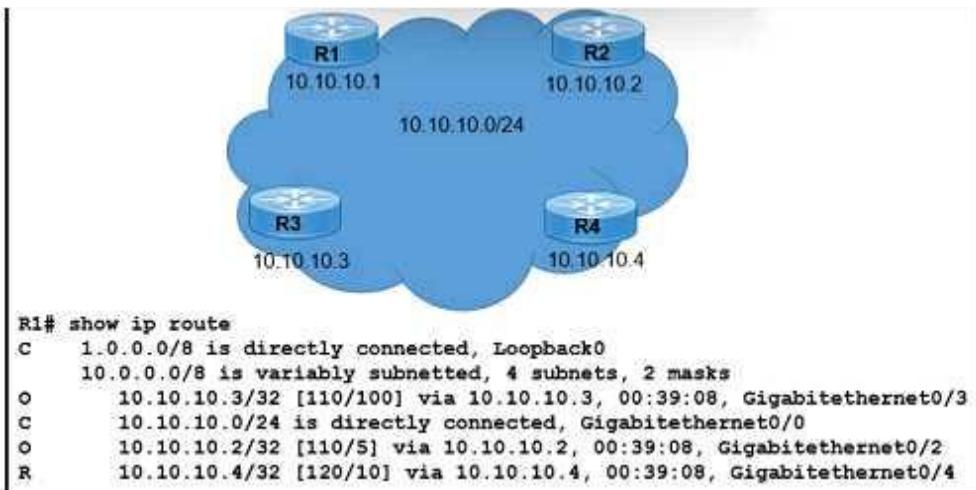
Which command must be used to forward requests and replies between clients on the 10.10.0.1/24 subnet and the DHCP server at 192.168.10.1?

- A. ip route 192.168.10.1
- B. ip default-gateway 192.168.10.1
- C. ip helper-address 192.168.10.1
- D. ip dhcp address 192.168.10.1

**Answer:** C

**QUESTION 1025**

Refer to the exhibit. Which next-hop IP address has the least desirable metric when sourced from R1?

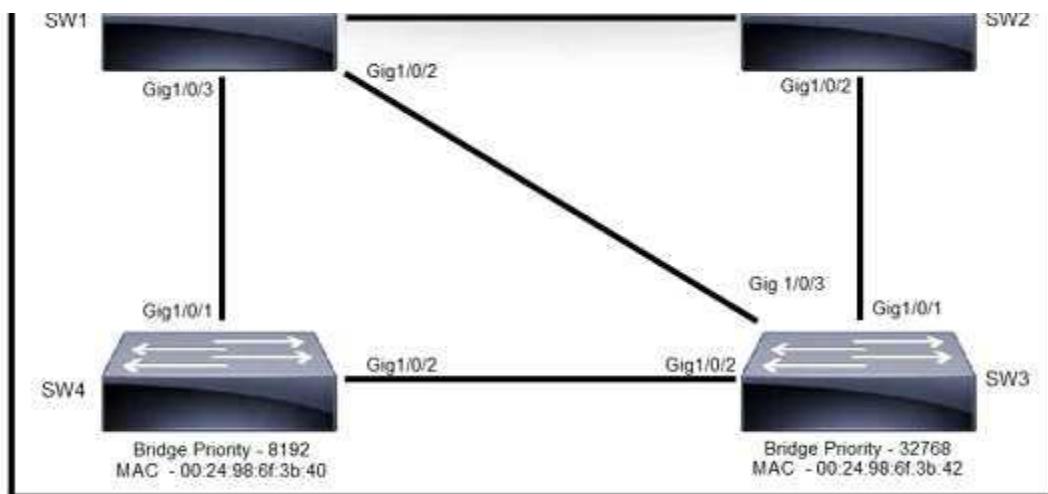


- A. 10.10.10.5
- B. 10.10.10.3
- C. 10.10.10.4
- D. 10.10.10.2

**Answer:** C

**QUESTION 1026**

Refer to the exhibit. Rapid PVST+ mode is on the same VLAN on each switch. Which switch becomes the root bridge and why?



- A. SW2, because its MAC address is the highest
- B. SW3, because its priority is the highest
- C. SW4, because its priority is highest and its MAC address is lower
- D. SW1, because its priority is the lowest and its MAC address is higher

**Answer:** B

#### QUESTION 1027

Which two QoS tools provide congestion management? (Choose two.)

- A. CBWFQ
- B. FRTS
- C. CAR
- D. PBR
- E. PQ

**Answer:** AE

**Explanation:**

Common Cisco IOS-based congestion management tools include CBWFQ and LLQ algorithms. LLQ brings strict priority queuing (PQ) to CBWFQ.

#### QUESTION 1028

PC1 tries to send traffic to newly installed PC2. The PC2 MAC address is not listed in the MAC address table of the switch, so the switch sends the packet to all ports in the same VLAN. Which switching concept does this describe?

- A. MAC address aging
- B. MAC address table
- C. frame flooding
- D. spanning-tree protocol

**Answer:** A

#### QUESTION 1029

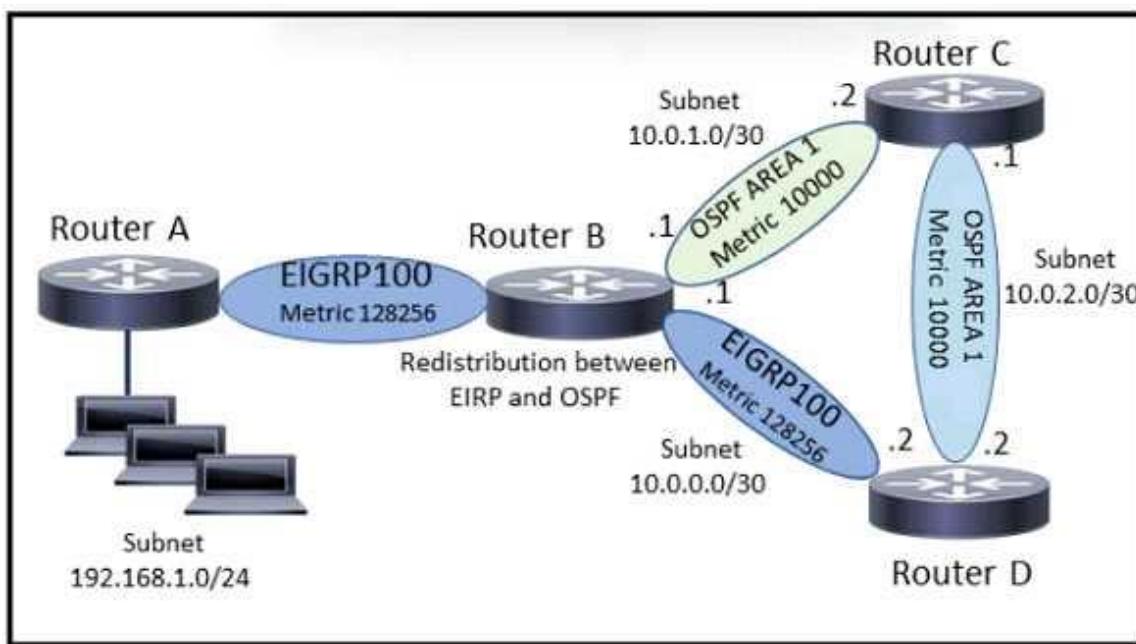
A network engineer is upgrading a small data center to host several new applications, including server backups that are expected to account for up to 90% of the bandwidth during peak times. The data center connects to the MPLS network provider via a primary circuit and a secondary circuit. How does the engineer inexpensively update the data center to avoid saturation of the primary circuit by traffic associated with the backups?

- A. Assign traffic from the backup servers to a dedicated switch.
- B. Configure a dedicated circuit for the backup traffic.
- C. Place the backup servers in a dedicated VLAN.
- D. Advertise a more specific route for the backup traffic via the secondary circuit.

**Answer:** A

#### QUESTION 1030

Refer to the exhibit. A network engineer executes the show ip route command on router D. What is the next hop to network 192.168.1.0/24 and why?



- A. The next hop is 10.0.2.1 because it uses distance vector routing
- B. The next hop is 10.0.2.1 because it is a link-state routing protocol
- C. The next hop is 10.0.0.1 because it has a better administrative distance
- D. The next hop is 10.0.0.1 because it has a higher metric.

**Answer:** B

#### QUESTION 1031

Refer to the exhibit. A Cisco engineer creates a new WLAN called lantest. Which two actions must be performed so that only high-speed 2.4-Ghz clients connect? (Choose two.)



- A. Enable the Broadcast SSID option
- B. Enable the Status option.
- C. Set the Radio Policy option to 802 11g Only.
- D. Set the Radio Policy option to 802.11a Only.
- E. Set the Interface/Interface Group(G) to an interface other than guest

**Answer:** AB

#### QUESTION 1032

What is the role of nonoverlapping channels in a wireless environment?

- A. to reduce interference
- B. to allow for channel bonding
- C. to stabilize the RF environment
- D. to increase bandwidth

**Answer:** A

#### QUESTION 1033

A router has two static routes to the same destination network under the same OSPF process. How does the router forward packets to the destination if the next-hop devices are different?

- A. The router chooses the route with the oldest age.
- B. The router load-balances traffic over all routes to the destination.
- C. The router chooses the next hop with the lowest MAC address.
- D. The router chooses the next hop with the lowest IP address.

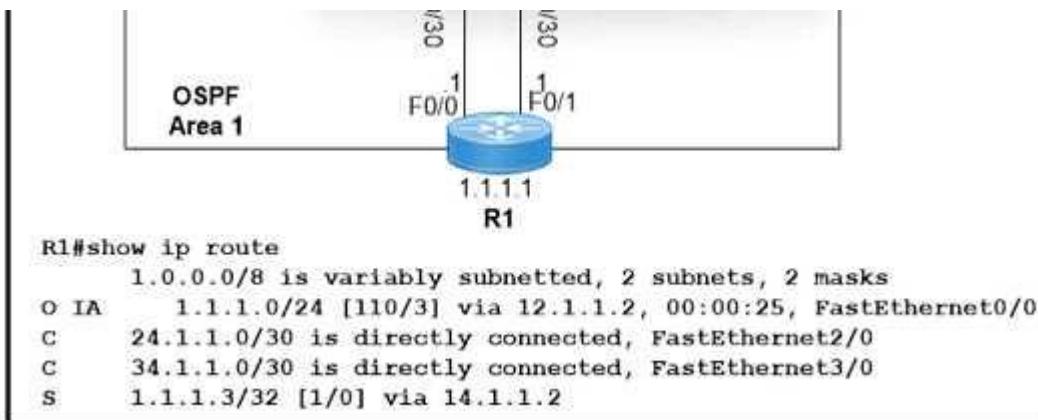
**Answer:** B

**Explanation:**

Load balancing is a standard functionality of Cisco IOS Software that is available across all router platforms. It is inherent to the forwarding process in the router, and it enables a router to use multiple paths to a destination when it forwards packets. The number of paths used is limited by the number of entries that the routing protocol puts in the routing table. Four entries is the default in Cisco IOS Software for IP routing protocols except for BGP. BGP has a default of one entry.

**QUESTION 1034**

Refer to the exhibit. Which two values does router R1 use to determine the best path to reach destinations in network 1.0.0.0/8? (Choose two.)



- A. longest prefix match
- B. highest administrative distance
- C. highest metric
- D. lowest metric
- E. lowest cost to reach the next hop

**Answer:** AD

**QUESTION 1035**

Refer to the exhibit. Host A switch interface is configured in VLAN 2. Host D sends a unicast packet destined for the IP address of host A.



```
Sw1#show mac-address table
Mac Address Table

Vlan Mac Address Type Ports
----- -----
2 000c.859c.bb7b DYNAMIC e0/1
3 000c.859c.bb7b DYNAMIC e0/1
2 0010.t1dc.3e91 DYNAMIC e0/2
3 0010.t1dc.3e91 DYNAMIC e0/2
2 0043.49d4.c383 DYNAMIC e0/3
Sw1#
```

What does the switch do when it receives the frame from host D?

- A. It creates a broadcast storm.
- B. It drops the frame from the MAC table of the switch.
- C. It shuts down the source port and places it in err-disable mode.
- D. It floods the frame out of every port except the source port.

**Answer:** C

**QUESTION 1036**

A network analyst is tasked with configuring the date and time on a router using EXEC mode. The date must be set to January 1, 2020 and the time must be set to 12:00 am.  
Which command should be used?

- A. clock timezone
- B. clock summer-time date
- C. clock summer-time recurring
- D. clock set

**Answer:** D

**QUESTION 1037**

Refer to the exhibit. A network engineer started to configure two directly-connected routers as shown. Which command sequence must the engineer configure on R2 so that the two routers become OSPF neighbors?

```
R1
interface GigabitEthernet0/1
 ip address 192.168.12.1 255.255.255.128
 no shutdown
router ospf 1
 network 192.168.12.1 0.0.0.0 area 1

R2
interface GigabitEthernet0/1
 ip address 192.168.12.2 255.255.255.128
 no shutdown
```

- A. router ospf 1  
 network 192.168.12.1 0.0.0.0 area 1
- B. interface GigabitEthernet0/1  
 ip ospf 1 area 1
- C. interface GigabitEthernet0/1  
 ip ospf 1 area 0
- D. router ospf 1  
 network 192.168.12.0 0.0.0.127 area 0

**Answer:** D

**QUESTION 1038**

Refer to the exhibit. A network engineer must provide configured IP addressing details to investigate a firewall rule issue.

Which subnet and mask Identify what is configured on the eth0 interface?

```
MacOs$ ifconfig
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
 options=400<CHANNEL IO>
 ether f0:18:98:64:60:32
 inet6 fe80::492:c09f:57cf:8c36%en0 prefixlen 64 secured scopeid 0x6
 inet 10.8.138.14 netmask 0xffffffff broadcast 10.8.159.255
 nd6 options=201<PERFORMNUD,DAD>
 media: autoselect
 status: active
```

- A. 10.8.0.0/16
- B. 10.8.64.0/18
- C. 10.8.128.0/19
- D. 10.8.138.0/24

**Answer:** D

### QUESTION 1039

Refer to the exhibit. What does route 10.0.1.3/32 represent in the routing table?

```
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 10.0.0.0/8 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 10.0.1.100, 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, Gigabit Ethernet 0/0
D 10.0.1.4/32 [110/10] via 10.0.1.4, 00:39:08, Gigabit Ethernet 0/0
```

- A. the 10.0.0.0 network
- B. a single destination address
- C. the source 10.0.1.100
- D. all hosts in the 10.0.1.0 subnet

**Answer:** A

### QUESTION 1040

Refer to the exhibit. A network administrator must permit traffic from the 10.10.0.0/24 subnet to the WAN on interface Serial10.

What is the effect of the configuration as the administrator applies the command?

```
access-list 10 permit 10.0.0.0 0.0.0.255

interface Serial0

ip access-list 10 in
```

- A. The permit command fails and returns an error code.
- B. The router accepts all incoming traffic to Serial0 with the last octet of the source IP set to 0.
- C. The sourced traffic from IP range 10.0.0.0 -10.0.0.255 is allowed on Serial0.
- D. The router fails to apply the access list to the interface.

**Answer:** C

**QUESTION 1041**

What is the role of community strings in SNMP operations?

- A. It serves as a sequence tag on SNMP traffic messages.
- B. It serves as a password to protect access to MIB objects.
- C. It passes the Active Directory username and password that are required for device access
- D. It translates alphanumeric MIB output values to numeric values.

**Answer:** B

**QUESTION 1042**

Which access point mode relies on a centralized controller for management, roaming, and SSID configuration?

- A. repeater mode
- B. autonomous mode
- C. bridge mode
- D. lightweight mode

**Answer:** D

**Explanation:**

For Lightweight APs, the functions of an AP can be split between the AP and the WLC. Other functions are carried out by a WLC. The WLC is also used to centrally configure the lightweight APs. Can be configured in modes such as Local or FlexConnect.

**QUESTION 1043**

What are two characteristics of a small office / home office connection environment? (Choose two.)

- A. It requires 10Gb ports on all uplinks.
- B. It supports between 50 and 100 users.
- C. It supports between 1 and 50 users.
- D. It requires a core, distribution, and access layer architecture.
- E. A router port connects to a broadband connection.

**Answer:** CE

**QUESTION 1044**

Which syslog severity level is considered the most severe and results in the system being considered unusable?

- A. Alert
- B. Error
- C. Emergency
- D. Critical

**Answer:** C

**QUESTION 1045**

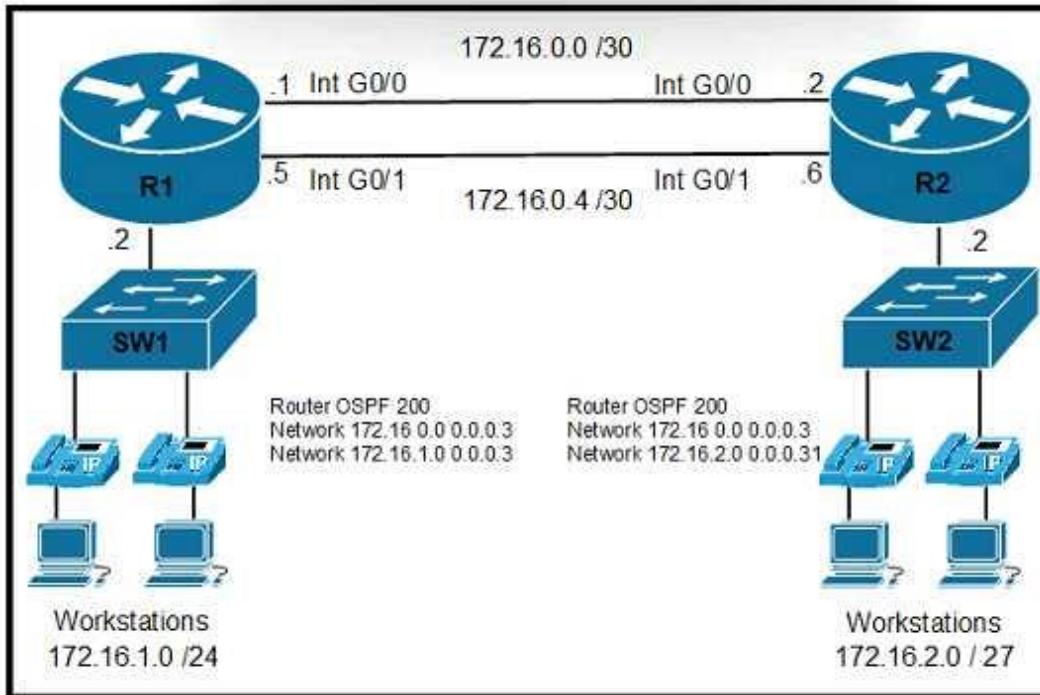
What is the definition of backdoor malware?

- A. malicious code that is installed onto a computer to allow access by an unauthorized user
- B. malicious code with the main purpose of downloading other malicious code
- C. malicious program that is used to launch other malicious programs
- D. malicious code that infects a user machine and then uses that machine to send spam

**Answer:** A

**QUESTION 1046**

Refer to the exhibit. The primary route across Gi0/0 is configured on both routers. A secondary route must be configured to establish connectivity between the workstation networks.  
Which command set must be configured to complete this task?



- A. R1  
`ip route 172.16.2.0 255.255.255.240 172.16.0.2 113`
- R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.1 114`
- B. R1  
`ip route 172.16.2.0 255.255.255.240 172.16.0.5 89`
- R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.6 89`
- C. R1  
`ip route 172.16.2.0 255.255.255.248 172.16.0.5 110`
- R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.6 110`
- D. R1  
`ip route 172.16.2.0 255.255.255.224 172.16.0.6 111`
- R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.5 112`

**Answer:** D

#### QUESTION 1047

Which command creates a static NAT binding for a PC address of 10.1.1.1 to the public routable address 209.165.200.225 assigned to the PC?

- A. R1(config)#ip nat inside source static 10.1.1.1 209.165.200.225
- B. R1(config)#ip nat outside source static 209.165.200.225 10.1.1.1
- C. R1(config)#ip nat inside source static 209.165.200.225 10.1.1.1

D. R1(config)#ip nat outside source static 10.1.1.1 209.165.200.225

**Answer:** A

**QUESTION 1048**

What prevents a workstation from receiving a DHCP address?

- A. STP
- B. VTP
- C. 802.1Q
- D. DTP

**Answer:** C

**QUESTION 1049**

What is a feature of TFTP?

- A. offers anonymous user login ability
- B. uses two separate connections for control and data traffic
- C. relies on the well-known TCP port 20 to transmit data
- D. provides secure data transfer

**Answer:** A

**QUESTION 1050**

Which QoS forwarding per-hop behavior changes a specific value in a packet header to set the class of service for the packet?

- A. shaping
- B. classification
- C. policing
- D. marking

**Answer:** D

**QUESTION 1051**

Which per-hop traffic-control feature does an ISP implement to mitigate the potential negative effects of a customer exceeding its committed bandwidth?

- A. policing
- B. queuing
- C. marking
- D. shaping

**Answer:** A

**QUESTION 1052**

Which remote access protocol provides unsecured remote CLI access?

- A. console
- B. Telnet
- C. SSH
- D. Bash

**Answer:** B

**QUESTION 1053**

What is a syslog facility?

- A. host that is configured for the system to send log messages
- B. password that authenticates a Network Management System to receive log messages
- C. group of log messages associated with the configured severity level
- D. set of values that represent the processes that can generate a log message

**Answer:** D

**QUESTION 1054**

What is the function of FTP?

- A. Always operated without user connection validation
- B. Uses block number to identify and mitigate data-transfer errors
- C. Relies on the well-known UDO port 69 for data transfer
- D. Uses two separate connections for control and data traffic

**Answer:** D

**QUESTION 1055**

How does TFTP operate in a network?

- A. Provides secure data transfer
- B. Relies on the well-known TCP port 20 to transmit data
- C. Uses block numbers to identify and mitigate data-transfer errors
- D. Requires two separate connections for control and data traffic

**Answer:** C

**QUESTION 1056**

Which device performs stateful inspection of traffic?

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

**Answer:** B

**Explanation:**

Stateful inspection, also known as dynamic packet filtering, is a firewall technology that monitors

the state of active connections and uses this information to determine which network packets to allow through the firewall.

**QUESTION 1057**

How does WPA3 improve security?

- A. It uses SAE for authentication.
- B. It uses RC4 for encryption.
- C. It uses TKIP for encryption.
- D. It uses a 4-way handshake for authentication.

**Answer:** A

**QUESTION 1058**

Which device separates networks by security domains?

- A. intrusion protection system
- B. firewall
- C. wireless controller
- D. access point

**Answer:** B

**QUESTION 1059**

Which enhancements were implemented as part of WPA3?

- A. Forward secrecy and SAE in personal mode for secure initial key exchange
- B. 802.1x authentication and AES-128 encryption
- C. AES-64 in personal mode and AES-128 in enterprise mode
- D. TKIP encryption improving WEP and per-packet keying

**Answer:** A

**QUESTION 1060**

In an SDN architecture, which function of a network node is centralized on a controller?

- A. Creates the IP routing table
- B. Discards a message due filtering
- C. Makes a routing decision
- D. Provides protocol access for remote access devices

**Answer:** C

**Explanation:**

A controller, or SDN controller, centralizes the control of the networking devices. The degree of control, and the type of control, varies widely. For instance, the controller can perform all control plane functions (such as making routing decisions) replacing the devices' distributed control plane.

**QUESTION 1061**

Which management security process is invoked when a user logs in to a network device using their username and password?

- A. authentication
- B. auditing
- C. accounting
- D. authorization

**Answer:** A

**QUESTION 1062**

Which port security violation mode allows from valid MAC addresses to pass but blocks traffic from invalid MAC addresses?

- A. restrict
- B. shutdown
- C. protect
- D. shutdown VLAN

**Answer:** C

**QUESTION 1063**

A customer wants to provide wireless access to contractors using a guest portal on Cisco ISE. The portal is also used by employees. A solution is implemented, but contractors receive a certificate error when they attempt to access the portal. Employees can access the portal without any errors. Which change must be implemented to allow the contractors and employees to access the portal?

- A. Install an Internal CA signed certificate on the Cisco ISE.
- B. Install a trusted third-party certificate on the Cisco ISE.
- C. Install an internal CA signed certificate on the contractor devices.
- D. Install a trusted third-party certificate on the contractor devices.

**Answer:** B

**QUESTION 1064**

A network engineer is implementing a corporate SSID for WPA3-Personal security with a PSK. Which encryption cipher must be configured?

- A. CCMP128
- B. GCMP256
- C. CCMP256
- D. GCMP128

**Answer:** A

**Explanation:**

WPA3 mandates the adoption of Protected Management Frames, which help guard against eavesdropping and forging. It also standardizes the 128-bit cryptographic suite and disallows obsolete security protocols. WPA3-Enterprise has optional 192-bit security encryption and a 48-

bit IV for heightened protection of sensitive corporate, financial and governmental data. WPA3-Personal uses CCMP-128 and AES-128.

**QUESTION 1065**

Why would a network administrator choose to implement automation in a network environment?

- A. To simplify the process of maintaining a consistent configuration state across all devices
- B. To centralize device information storage
- C. To implement centralized user account management
- D. To deploy the management plane separately from the rest of the network

**Answer:** A

**QUESTION 1066**

Which two REST API status-code classes represent errors? (Choose two.)

- A. 1XX
- B. 2XX
- C. 3XX
- D. 4XX
- E. 5XX

**Answer:** DE

**QUESTION 1067**

What is a function of a southbound API?

- A. Use orchestration to provision a virtual server configuration from a web server
- B. Automate configuration changes between a server and a switching fabric
- C. Manage flow control between an SDN controller and a switching fabric
- D. Facilitate the information exchange between an SDN controller and application

**Answer:** C

**QUESTION 1068**

Which script paradigm does Puppet use?

- A. recipes and cookbooks
- B. playbooks and roles
- C. strings and marionettes
- D. manifests and modules

**Answer:** D

**QUESTION 1069**

Which set of methods is supported with the REST API?

- A. GET, PUT, ERASE, CHANGE

- B. GET, POST, MOD, ERASE
- C. GET, PUT, POST, DELETE
- D. GET, POST, ERASE, CHANGE

**Answer:** C

**QUESTION 1070**

Which definition describes JWT in regard to REST API security?

- A. an encrypted JSON token that is used for authentication
- B. an encrypted JSON token that is used for authorization
- C. an encoded JSON token that is used to securely exchange information
- D. an encoded JSON token that is used for authentication

**Answer:** C

**QUESTION 1071**

Which communication interaction takes place when a southbound API is used?

- A. between the SDN controller and PCs on the network
- B. between the SDN controller and switches and routers on the network
- C. between the SDN controller and services and applications on the network
- D. between network applications and switches and routers on the network

**Answer:** B

**QUESTION 1072**

What are two characteristics of a public cloud implementation? (Choose two.)

- A. It is owned and maintained by one party, but it is shared among multiple organizations
- B. It enables an organization to fully customize how it deploys network resources
- C. It provides services that are accessed over the Internet
- D. It is a data center on the public Internet that maintains cloud services for only one company
- E. It supports network resources from a centralized third-party provider and privately-owned virtual resources

**Answer:** AC

**QUESTION 1073**

Drag and Drop Question

Drag and drop the steps in a standard DNS lookup operation from the left into the order on the right.

- |                                                                    |   |
|--------------------------------------------------------------------|---|
| An endpoint submits a request for the IP address of a domain name. | 1 |
| The DNS receives a reply from the domain DNS server.               | 2 |
| The DNS responds to the endpoint.                                  | 3 |
| The DNS submits a request to a root DNS server.                    | 4 |
| The DNS submits a request to the domain DNS server.                | 5 |

**Answer:**

- |                                                                    |
|--------------------------------------------------------------------|
| An endpoint submits a request for the IP address of a domain name. |
| The DNS receives a reply from the domain DNS server.               |
| The DNS submits a request to a root DNS server.                    |
| The DNS submits a request to the domain DNS server.                |
| The DNS responds to the endpoint.                                  |

**QUESTION 1074**

Drag and Drop Question

Drag and drop the Ansible features from the left to the right. Not all features are used.

|                                                         |         |
|---------------------------------------------------------|---------|
| executes modules via SSH by default                     | feature |
| uses the YAML language                                  | feature |
| uses agents to manage hosts                             | feature |
| pushes configurations to the client                     | feature |
| requires clients to pull configurations from the server |         |
| operates without agents                                 |         |

**Answer:**

|                                                         |
|---------------------------------------------------------|
| operates without agents                                 |
| uses the YAML language                                  |
| executes modules via SSH by default                     |
| uses agents to manage hosts                             |
| pushes configurations to the client                     |
| requires clients to pull configurations from the server |

**QUESTION 1075**

Drag and Drop Question

Refer to the exhibit. Drag and drop the learned prefixes from the left onto the subnet masks on the right.

```
R1# show ip route | begin gateway
Gateway of last resort is not set
 172.16.0.0/16 is variably subnetted, 5 subnets, 5 masks.
o 172.16.2.128/25 [110/3184437] via 207.165.200.250, 00:00:25, Serial0/0/0
o 172.16.3.64/27 [110/3184437] via 207.165.200.250, 00:00:25, Serial0/0/0
o 172.16.3.128/28 [110/3184437] via 207.165.200.250, 00:00:25, Serial0/0/0
o 172.16.3.192/29 [110/3184437] via 207.165.200.250, 00:00:25, Serial0/0/0
o 172.16.4.0/23 [110/3184437] via 207.165.200.250, 00:00:25, Serial0/0/0
207.165.200.0/24 is variably subnetted, 4 subnets, 2 masks
C 207.165.200.248/30 is directly connected, Serial0/0/0
L 207.165.200.249/32 is directly connected, Serial0/0/0
C 207.165.200.252/30 is directly connected, Serial0/0/1
L 207.165.200.253/32 is directly connected, Serial0/0/1
```

|              |                 |
|--------------|-----------------|
| 172.16.3.128 | 255.255.254.0   |
| 172.16.3.64  | 255.255.255.128 |
| 172.16.2.128 | 255.255.255.224 |
| 172.16.3.192 | 255.255.255.240 |
| 172.16.4.0   | 255.255.255.248 |

**Answer:**

|              |
|--------------|
| 172.16.4.0   |
| 172.16.2.128 |
| 172.16.3.64  |
| 172.16.3.128 |
| 172.16.3.192 |

**QUESTION 1076**

Drag and Drop Question

Drag and drop the WLAN components from the left onto the component details on the right.

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

**Answer:**

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

**QUESTION 1077**

Drag and Drop Question

Drag and drop the DNS commands from the left onto their effects on the right.

Drag and drop the DNS commands from the left onto their effects on the right.

|                              |                                            |
|------------------------------|--------------------------------------------|
| ip domain-lookup             | adds an entry to the host table            |
| ip domain-name               | completes the FQDN of the DNS server       |
| ip host switch_1 192.168.0.1 | displays address-mapping information       |
| ip name-server               | enables host-to-IP-address translation     |
| show hosts                   | specifies the IP address of the DNS server |

### Answer:

Drag and drop the DNS commands from the left onto their effects on the right.

|                              |
|------------------------------|
| ip domain-name               |
| ip domain-lookup             |
| show hosts                   |
| ip host switch_1 192.168.0.1 |
| ip name-server               |

### QUESTION 1078

Drag and Drop Question

Drag and drop the statement about AAA services from the left to the corresponding AAA services on the right.

|                                                               |               |
|---------------------------------------------------------------|---------------|
| It grants access to network assets, such as FTP servers.      | Accounting    |
|                                                               |               |
| It restricts the CLI commands that a user is able to perform. |               |
|                                                               |               |
| It performs user validation via TACACS+.                      | Authorization |
|                                                               |               |
| It records the duration of each connection.                   |               |
|                                                               |               |
| It supports User Access Reporting.                            |               |
|                                                               |               |
| It verifies "who you are".                                    |               |

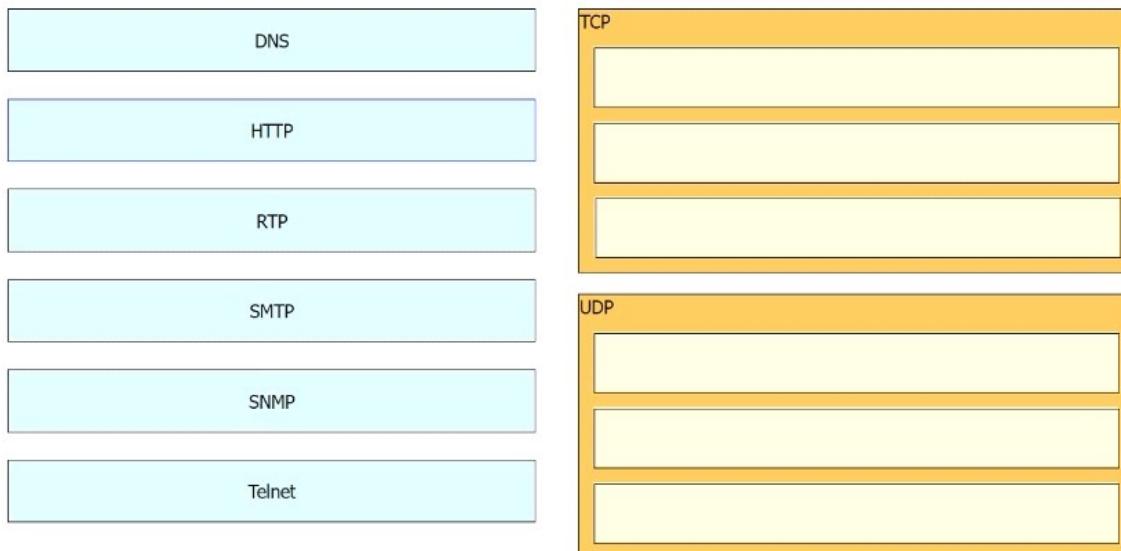
**Answer:**

|               |                                                               |
|---------------|---------------------------------------------------------------|
| Accounting    | It supports User Access Reporting.                            |
|               | It restricts the CLI commands that a user is able to perform. |
| Authorization | It performs user validation via TACACS+.                      |
|               | It grants access to network assets, such as FTP servers.      |
|               | It verifies "who you are".                                    |

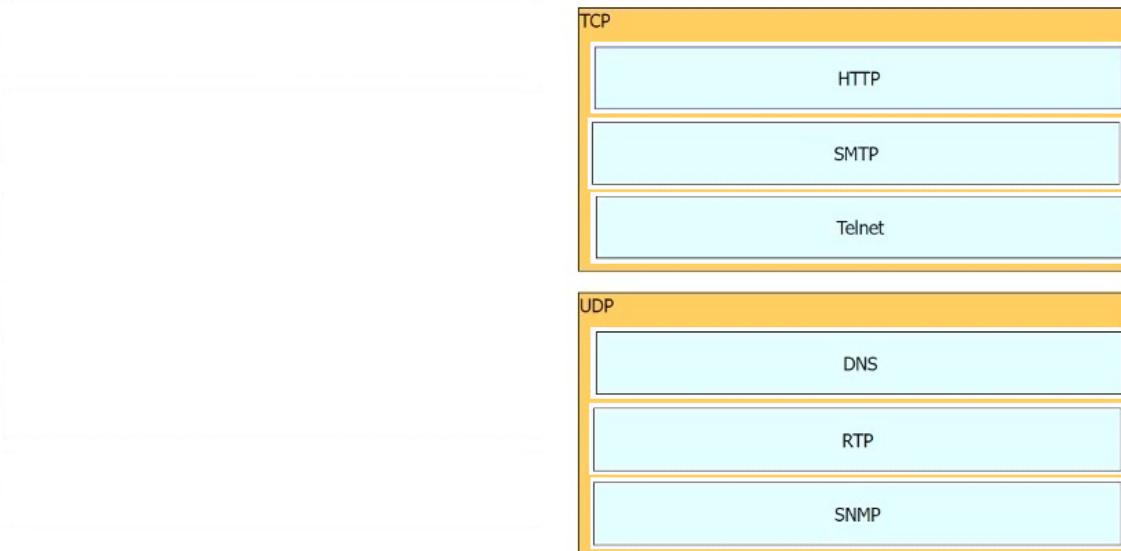
**QUESTION 1079**

Drag and Drop Question

An engineer must configure a core router with a floating static default route to the backup router at 10.200.0.2.



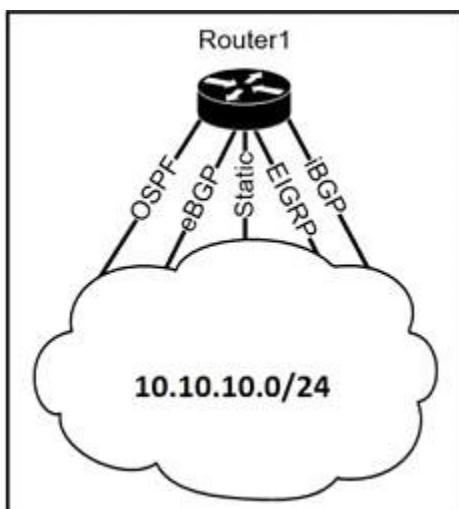
**Answer:**



#### QUESTION 1080

Drag and Drop Question

Refer to the exhibit. The Router1 routing table has multiple methods to reach 10.10.10.0/24 as shown. The default Administrative Distance is used. Drag and drop the network conditions from the left onto the routing methods that Router1 uses on the right.



- All protocols are up.
- OSPF and eBGP are down.
- The static route and eBGP are down.
- The static route and EIGRP are down.
- The static route and OSPF are down.

|        |  |
|--------|--|
| eBGP   |  |
| EIGRP  |  |
| Static |  |

**Answer:**

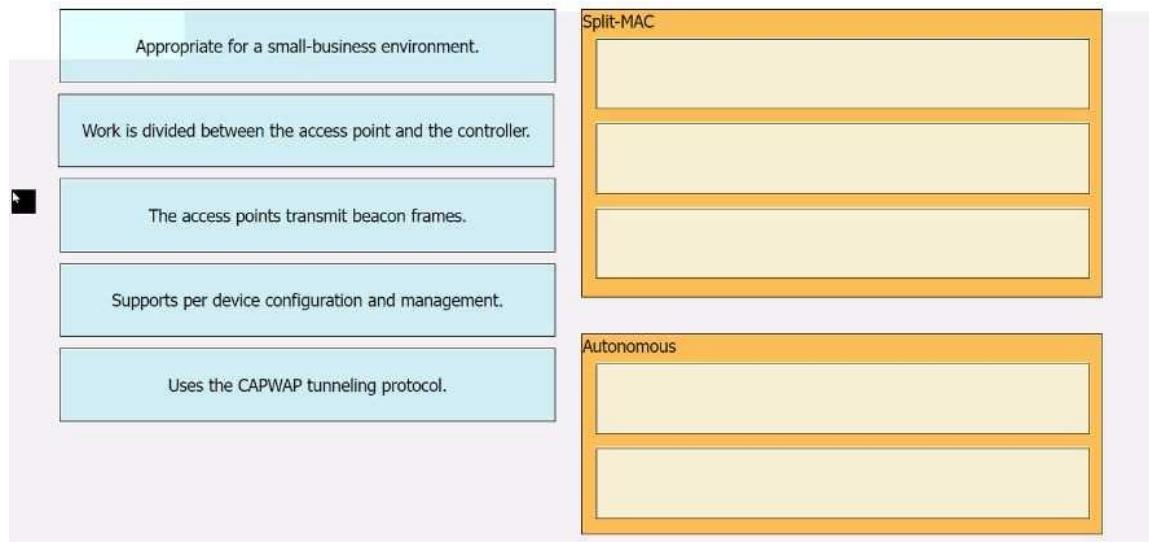
|        |                                                                                                                                    |
|--------|------------------------------------------------------------------------------------------------------------------------------------|
| eBGP   | <ul style="list-style-type: none"> <li>All protocols are up.</li> <li>OSPF and eBGP are down.</li> </ul>                           |
| EIGRP  | <ul style="list-style-type: none"> <li>The static route and EIGRP are down.</li> </ul>                                             |
| Static | <ul style="list-style-type: none"> <li>The static route and eBGP are down.</li> <li>The static route and OSPF are down.</li> </ul> |

**QUESTION 1081**

Drag and Drop Question

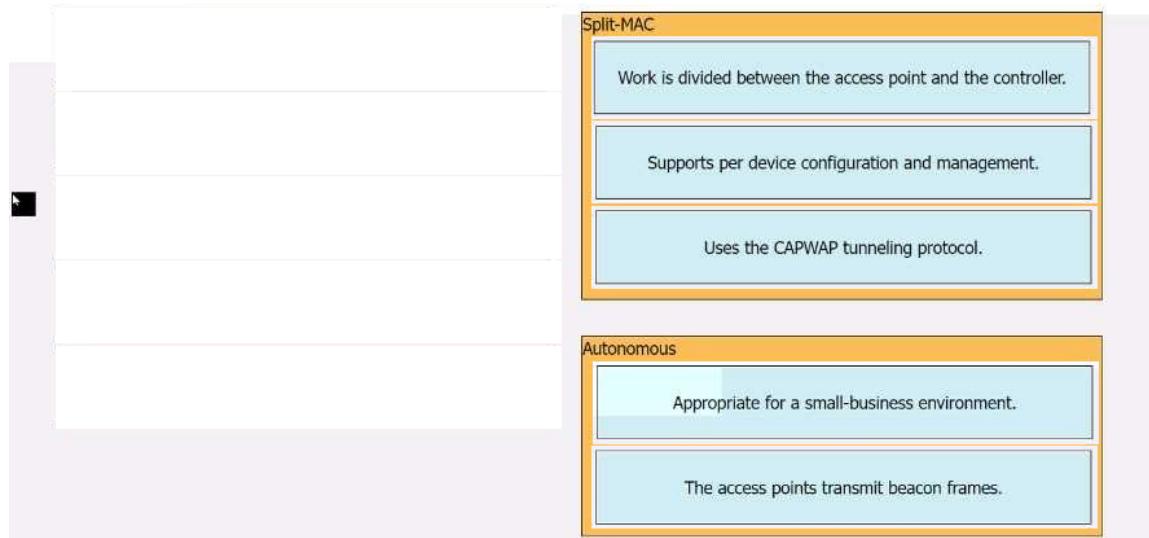
Drag and drop the wireless architecture benefits from the left onto the architecture types on the right.

Drag and drop the wireless architecture benefits from the left onto the architecture types on the right.



**Answer:**

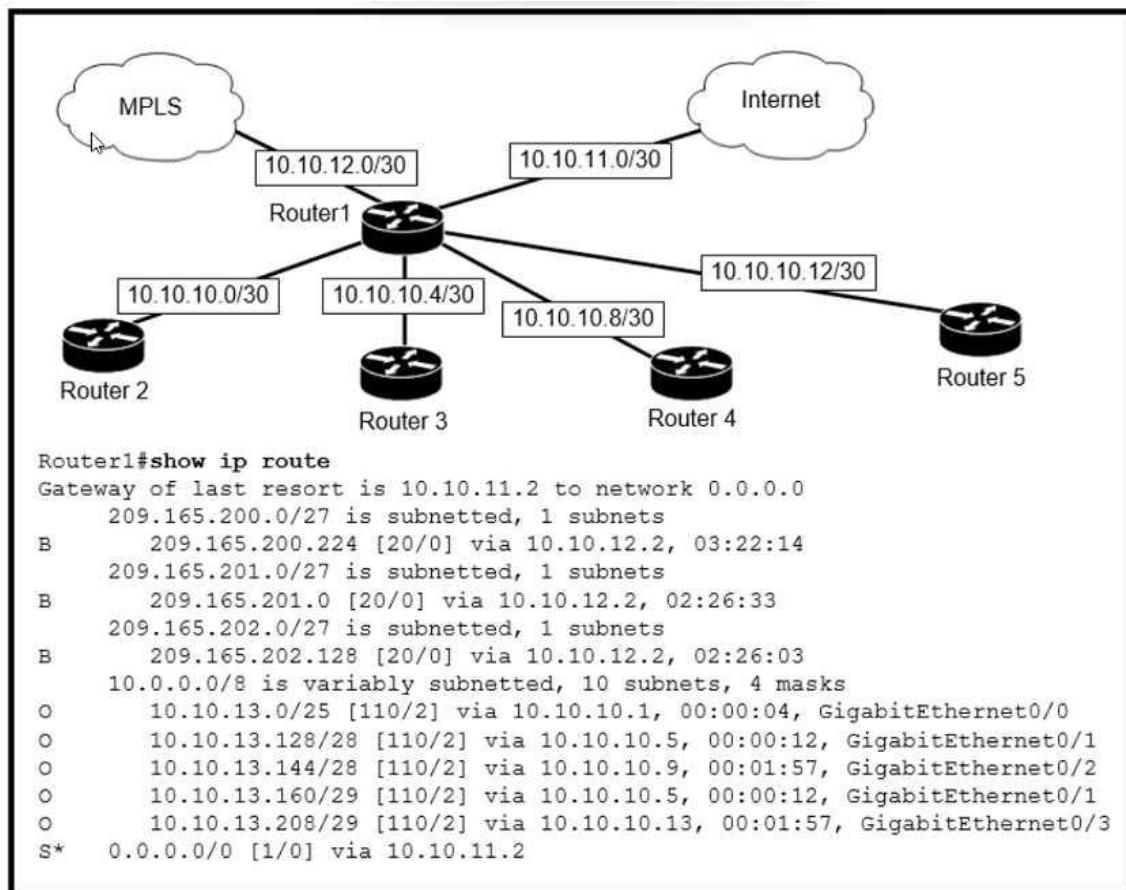
Drag and drop the wireless architecture benefits from the left onto the architecture types on the right.



**QUESTION 1082**

Drag and Drop Question

Refer to the exhibit. Drag and drop the destination IPs from the left onto the paths to reach those destinations on the right.


**Answer:**

10.10.13.126

10.10.13.129

10.10.13.150

10.10.13.209

209.165.200.30

1.1.1.1

### QUESTION 1083

Drag and Drop Question

Drag and drop the characteristics of northbound APIs from the left onto any position on the right.  
Not all characteristics are used.

supports automation

↳ communicates between the SDN controller  
and the application plane

supports data sharing between systems

communicates between the SDN controller  
and the data plane

supports network virtualization protocols

supports REST-based requirements

uses OpenFlow to interface between the  
data and control planes

**Answer:**

|                                                                   |                                                            |
|-------------------------------------------------------------------|------------------------------------------------------------|
| supports automation                                               | supports data sharing between systems                      |
| Communicates between the SDN controller and the application plane | communicates between the SDN controller and the data plane |
|                                                                   |                                                            |
|                                                                   |                                                            |
|                                                                   |                                                            |
| uses OpenFlow to interface between the data and control planes    |                                                            |