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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:

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

QUESTION 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

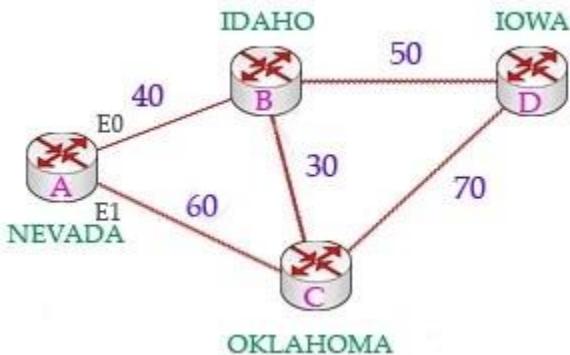
Answer: BC

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

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

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**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?

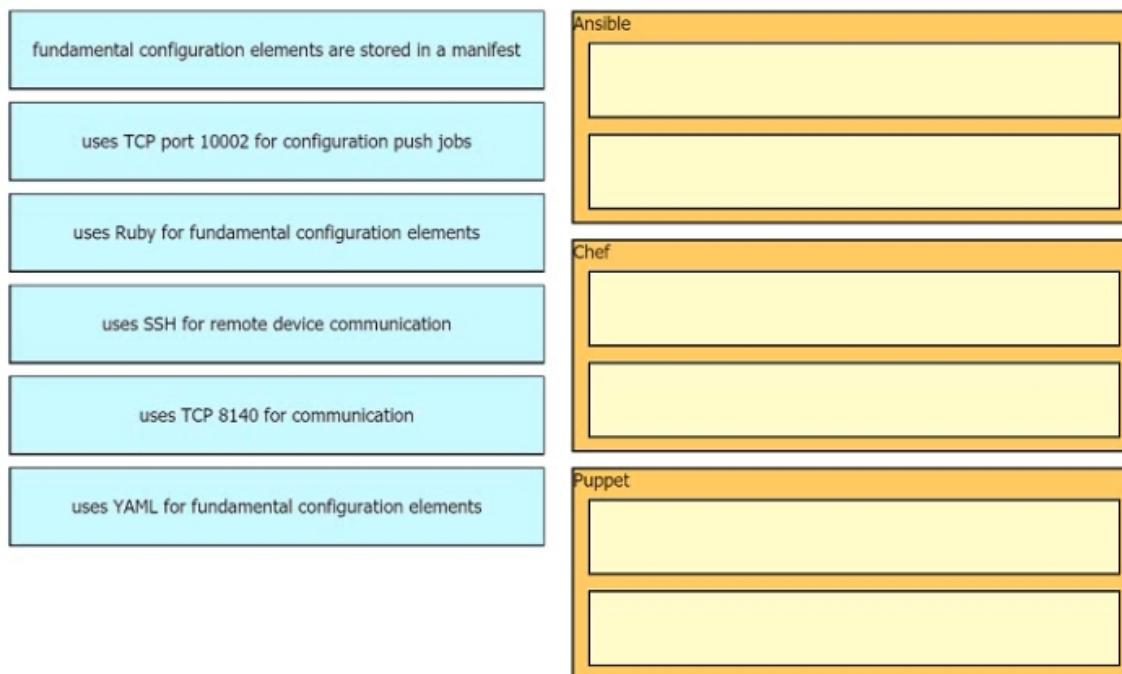
- A. enable secret
- B. service password-encryption
- C. username Cisco password encrypt
- D. enable password

Answer: B

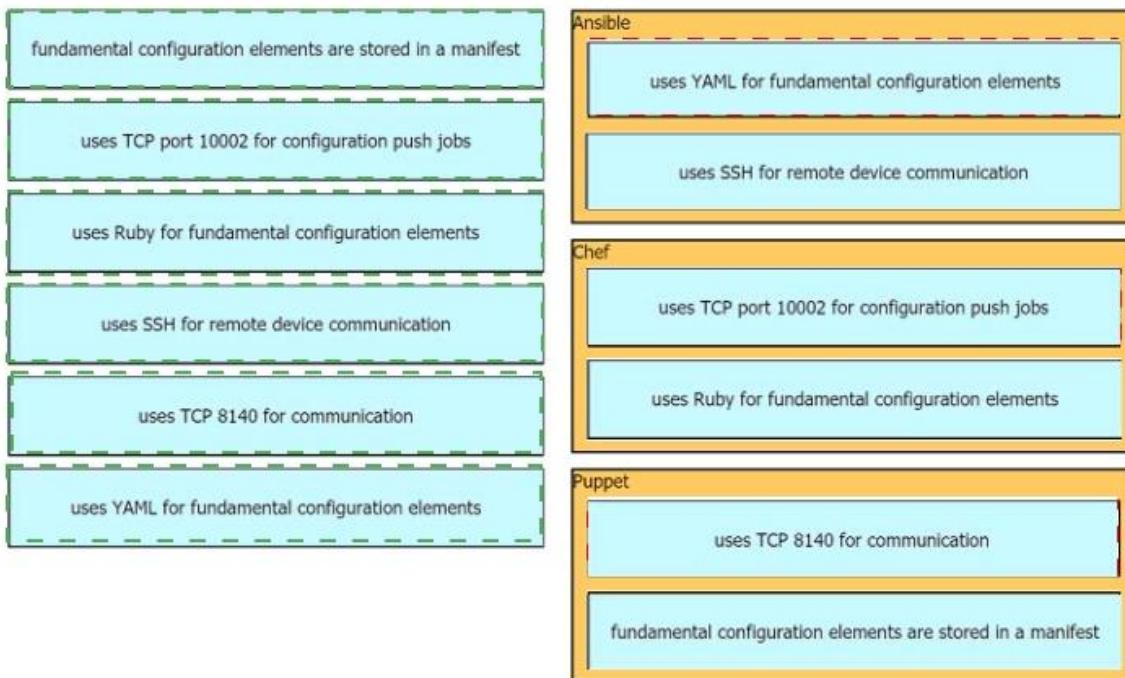
QUESTION 15

Drag and Drop Question

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



Answer:

**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.

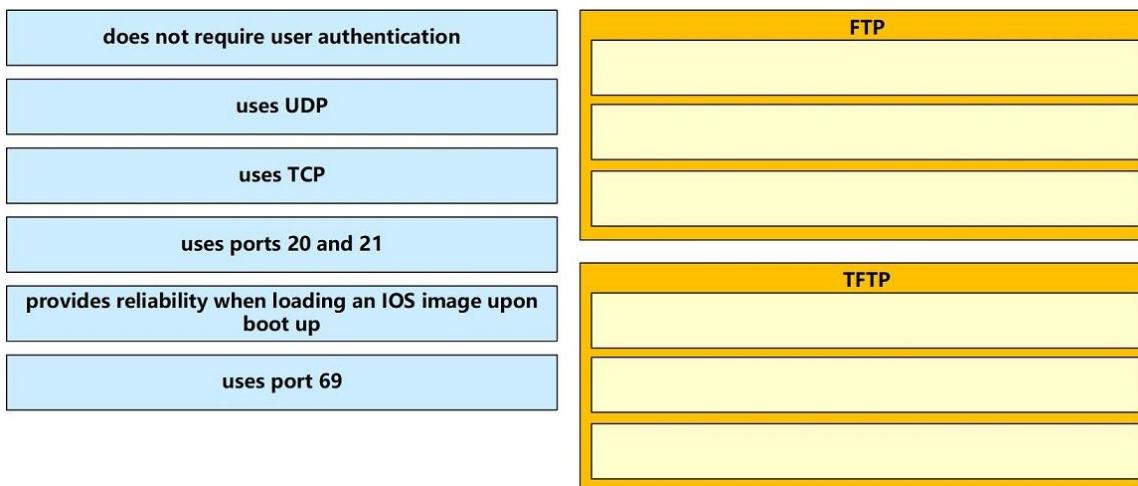
Puppet is an open-source configuration management solution, which is built with Ruby and offers custom Domain Specific Language (DSL) and Embedded Ruby (ERB) templates to create custom Puppet language files, offering a declarative-paradigm programming approach.

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

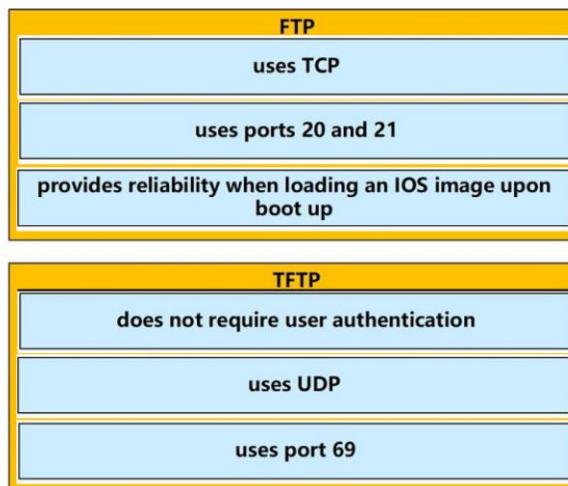
QUESTION 16

Drag and Drop Question

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



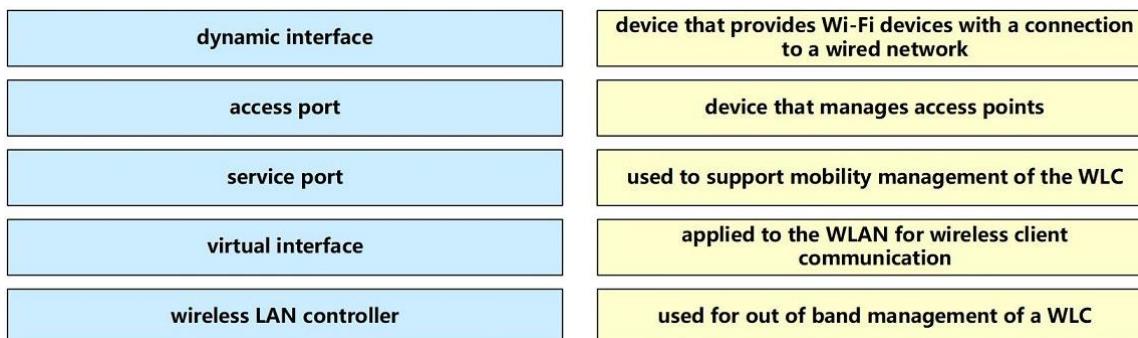
Answer:



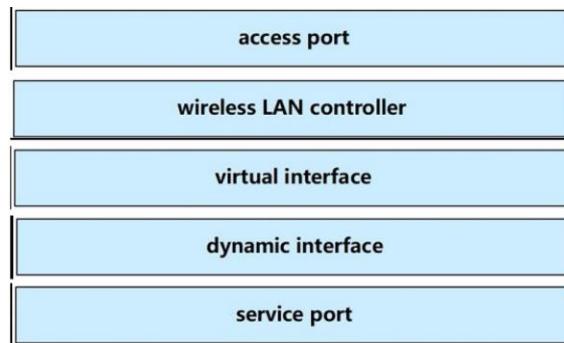
QUESTION 17

Drag and Drop Question

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



Answer:

**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

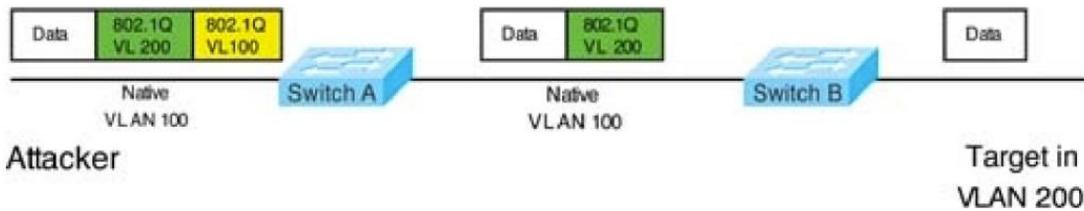
Drag and drop the threat-mitigation techniques from the left onto the types of threat or attack they mitigate on the right.



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.

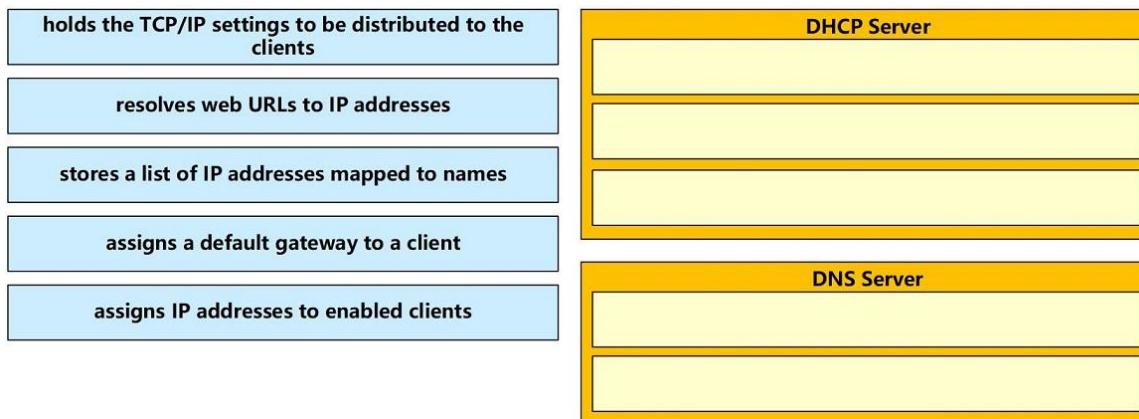
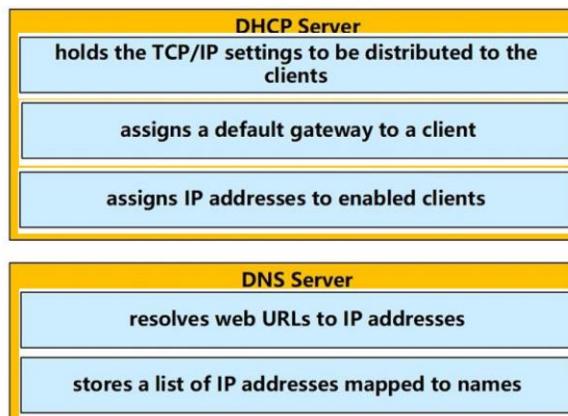
To mitigate this type of attack, you can use VLAN access control lists (VACLs, which applies to all traffic within a VLAN. We can use VACL to drop attacker traffic to specific victims/servers) or implement Private VLANs.

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

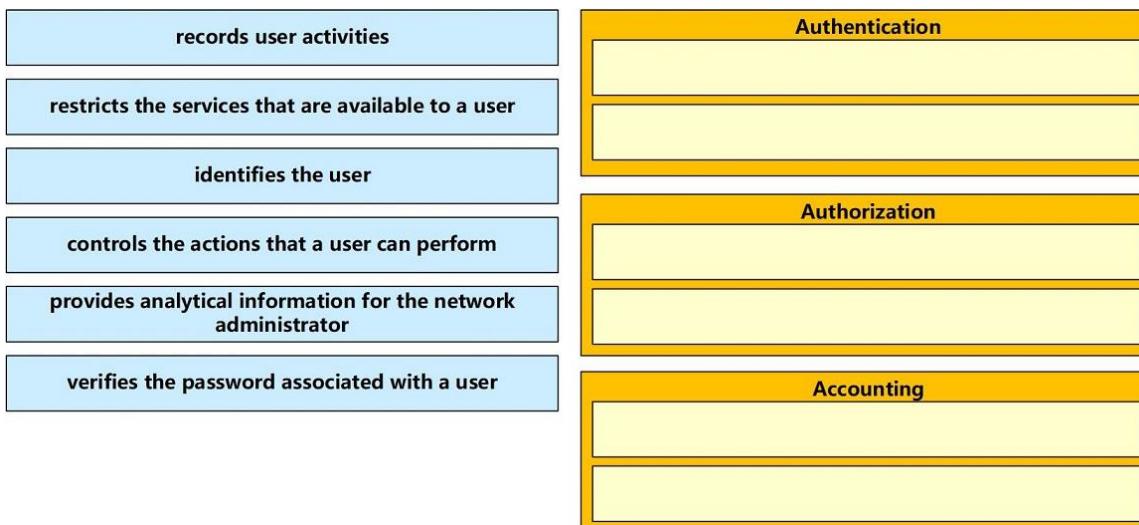
Drag and Drop Question

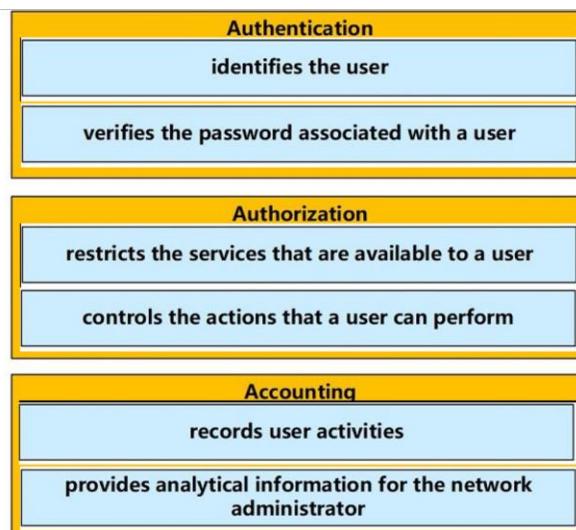
Drag and drop the functions from the left onto the correct network components on the right.

**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

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:

172.28.228.144/23
172.28.228.144/21
172.28.228.144/25
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:

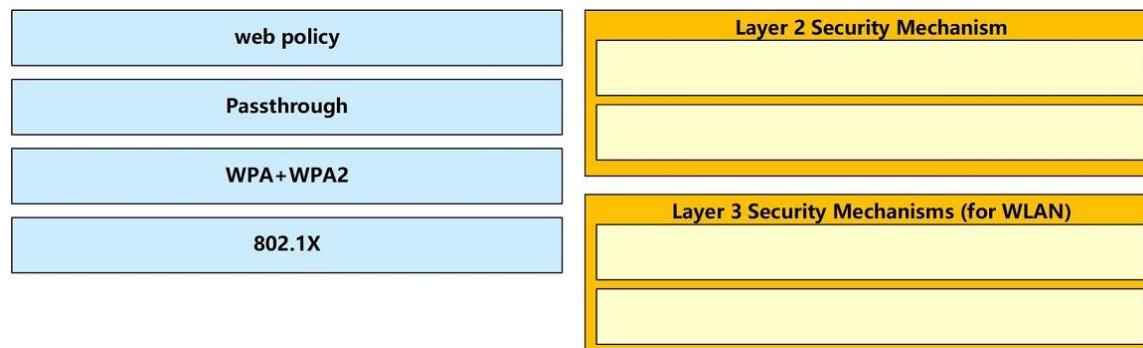
From the /18 (= 1100 0000 in the 3rd octet), we find out the increment is 64. Therefore the network address of this subnet must be the greatest multiple of the increment but not greater than the value in the 3rd octet (228). We can find out the 3rd octet of the network address is 192 (because $192 = 64 * 3$ 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 + the increment number).0 or 172.28.230.0 then reduce 1 bit -> 172.28.229.255 is the broadcast address of our subnet. Therefore the last usable host is 172.28.229.254.

QUESTION 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

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**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

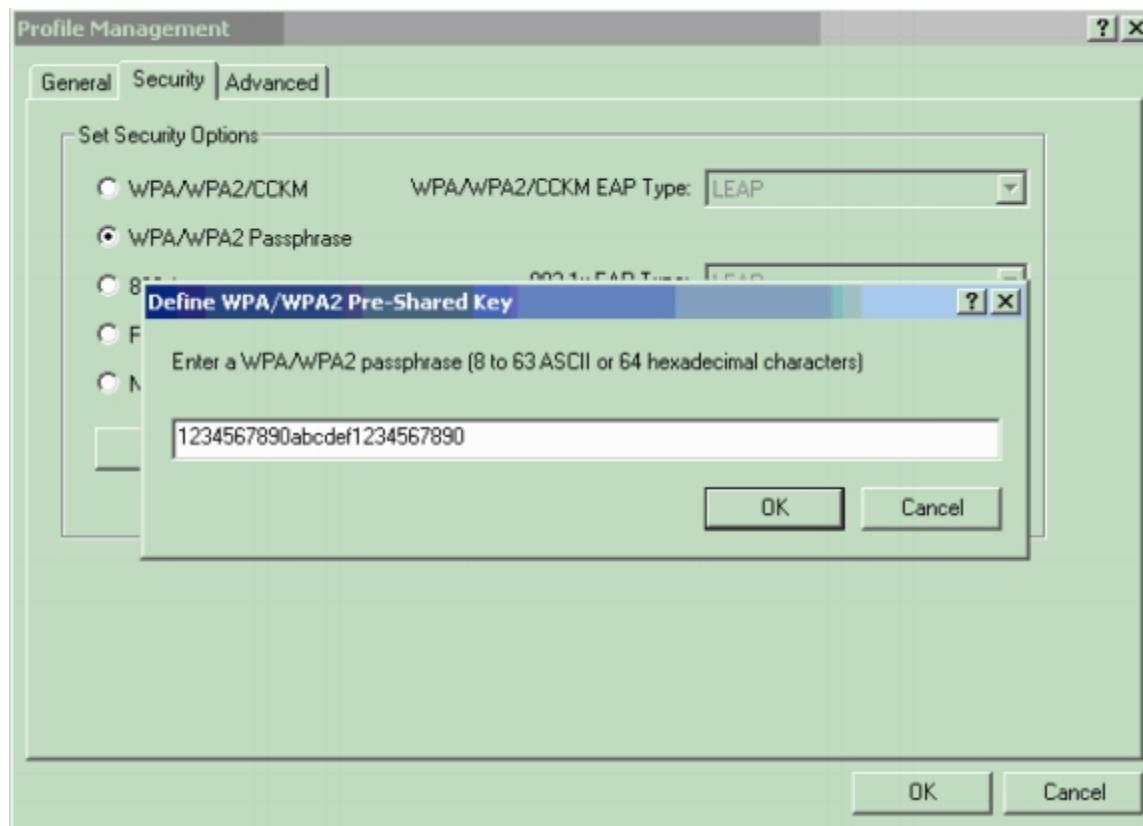
Which type of wireless encryption is used for WPA2 in pre-shared key mode?

- 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

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.

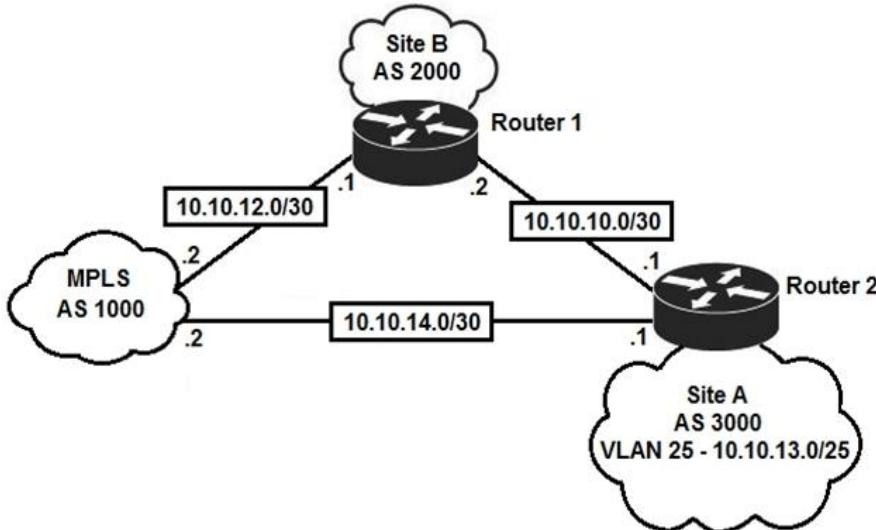
With SNMP, the network administrator can send commands to multiple routers to do the backup.

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:

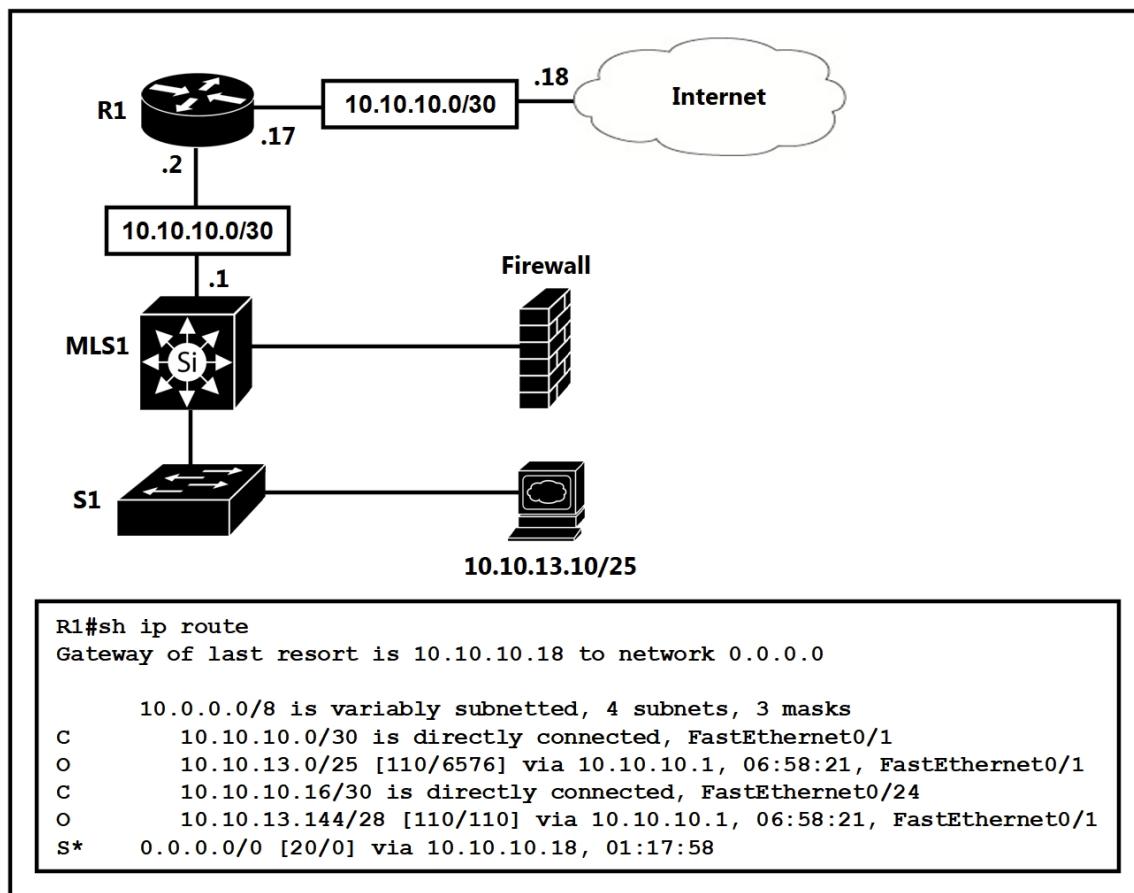
PoE monitoring and policing compares the power consumption on ports with the administrative maximum value (either a configured maximum value or the port's default value). If the power consumption on a monitored port exceeds the administrative maximum value, the following actions occur:

- 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**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:

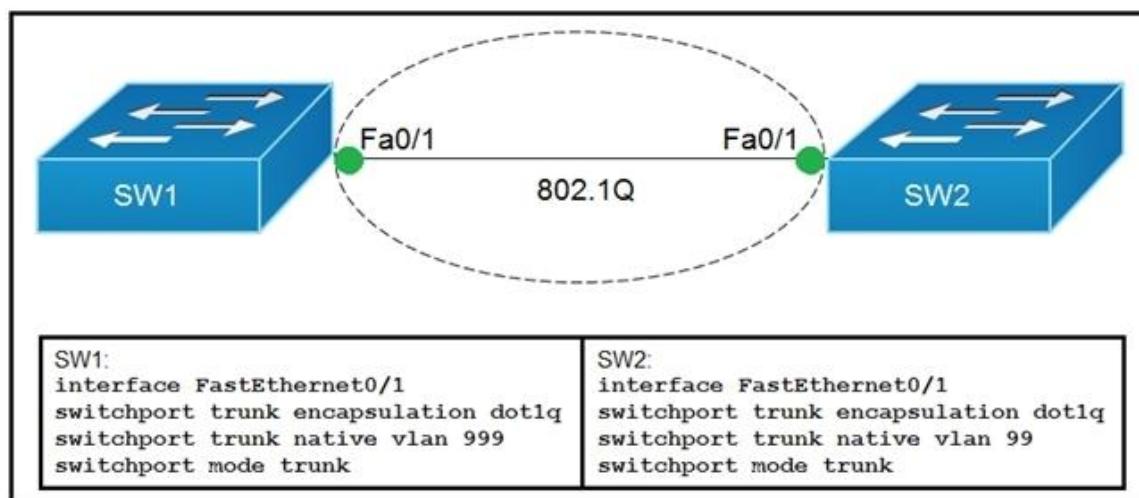
Below are the 3 cloud supporting services cloud providers provide to customer:

- + 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

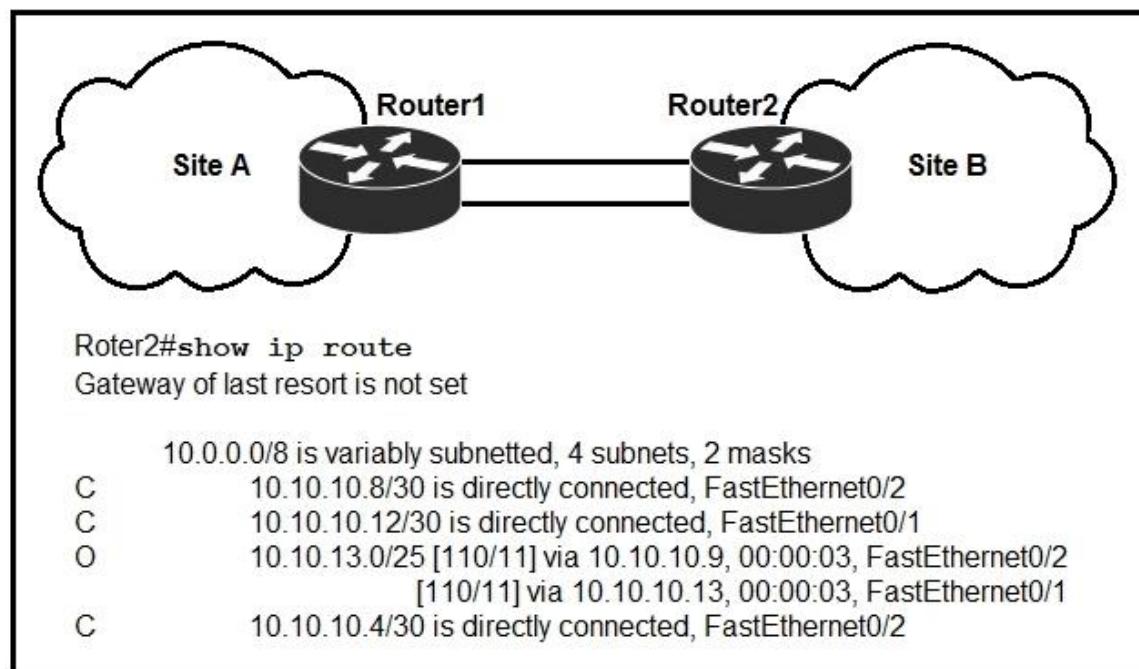
Which design element is a best practice when deploying an 802.11b wireless infrastructure?

- 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

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  RTS=up  CTS=up
```

QUESTION 46

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

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

Answer: AB

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:

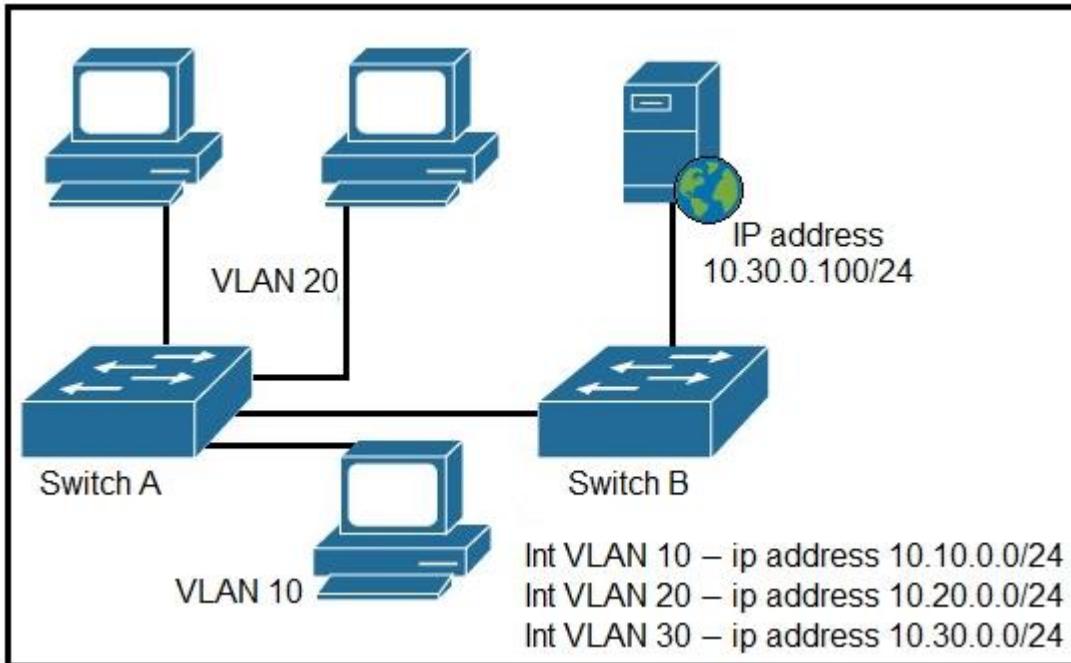
Our new static default route has the Administrative Distance (AD) of 120, which is bigger than the AD of OSPF External route (O*E2) so it will not be pushed into the routing table until the current OSPF External route is removed.

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:**

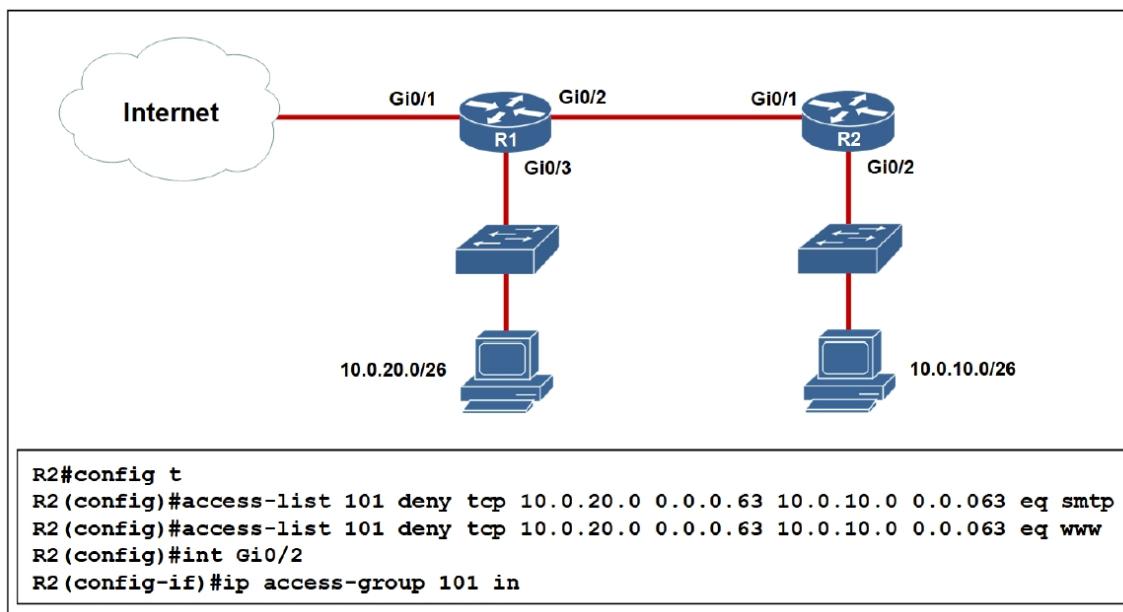
If a router learns two different paths for the same network from the same routing protocol, it has to decide which route is better and will be placed in the routing table. **Metric** is the measure used to decide which route is better (lower number is better). Each routing protocol uses its own metric. 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 Gi0/1 interface outbound on R2

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

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

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

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

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
```

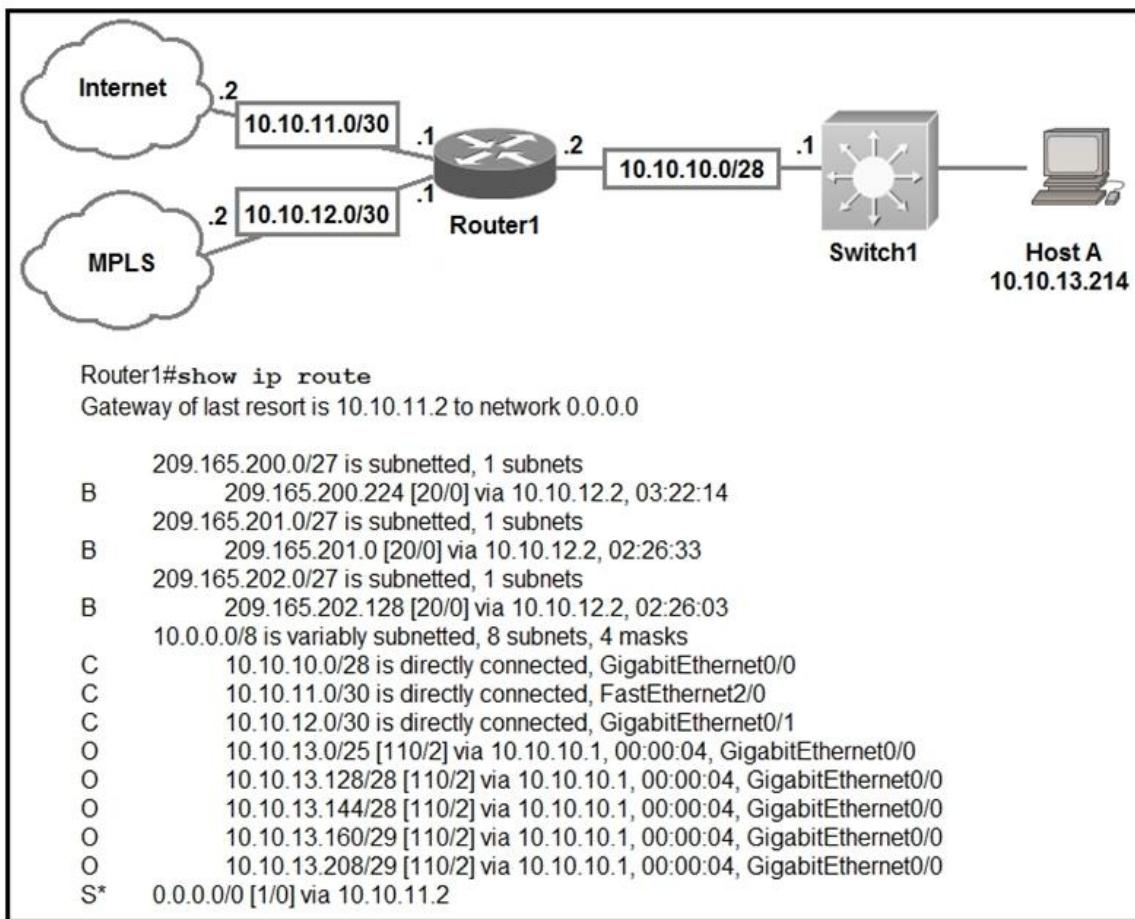
- A. The switch port interface trust state becomes untrusted
- B. The switch port remains administratively down until the interface is connected to another switch
- C. Dynamic ARP inspection is disabled because the ARP ACL is missing
- D. The switch port remains down until it is configured to trust or 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 Router 1 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**QUESTION 68**

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

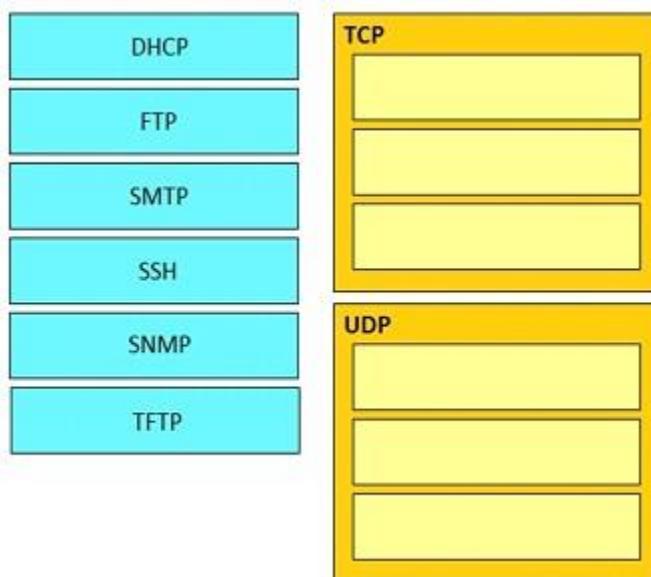
```
Router(config)# interface GigabitEthernet 1/0/1
Router(config-if)# ip address 192.168.16.143 255.255.255 240
Bad mask /28 for address 192.168.16.143
```

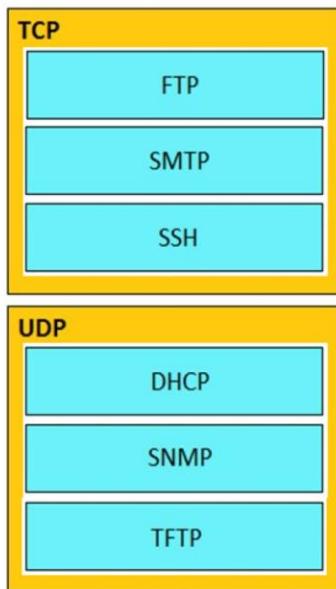
- A. It is a broadcast IP address
- B. The router does not support /28 mask.
- C. It belongs to a private IP address range.
- D. IT is a network IP address.

Answer: A**QUESTION 69**

Drag and Drop Question

Drag and drop the application protocols from the left onto the transport protocols that 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
    ▲ ▾
    Et1/0.4 Grp 2 Active 10.0.0.254 0000.0c07.ac02 refresh 30 secs (nex
    ▲ ▾
    Group name is "HSRP1", advertisement interval is 34 sec
```

QUESTION 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
```

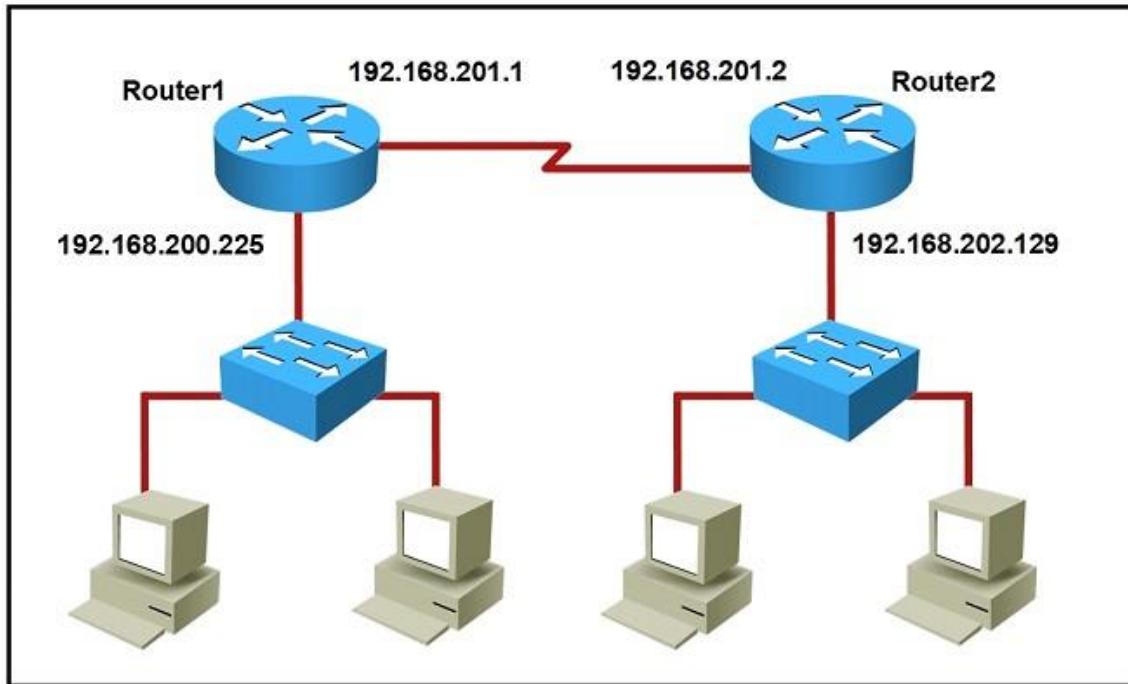
QUESTION 74

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**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

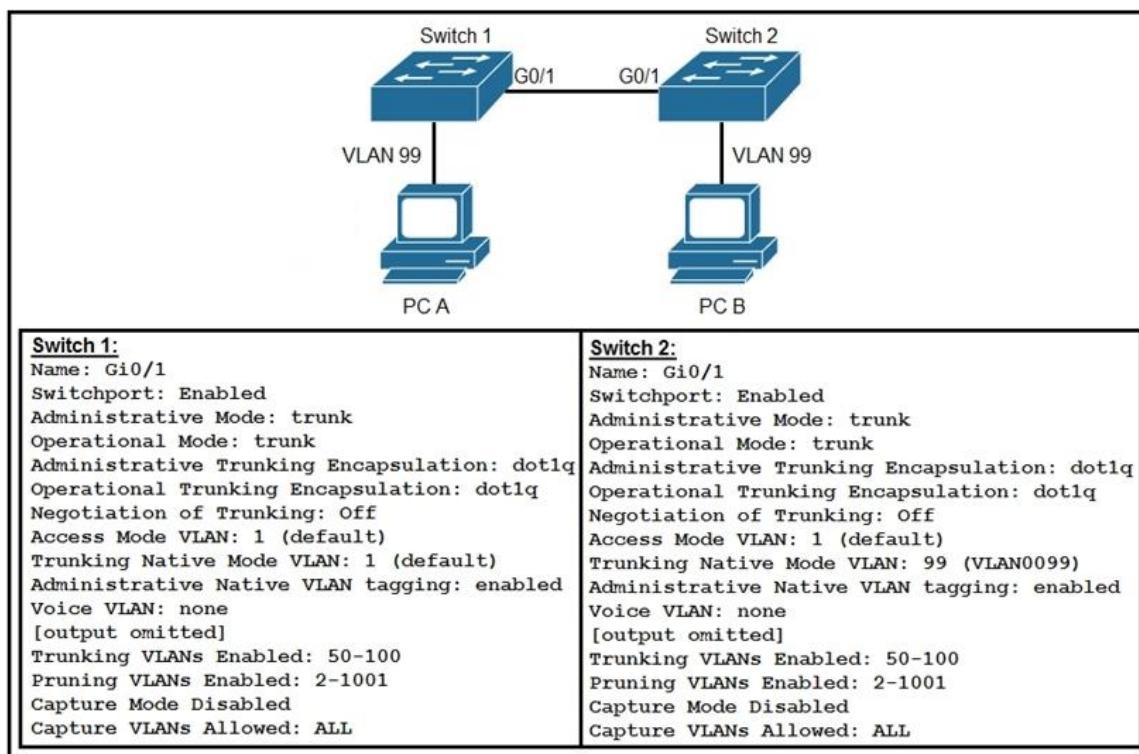
When OSPF learns multiple paths to a network, how does it select a route?

- A. It multiplies 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 counts the number 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

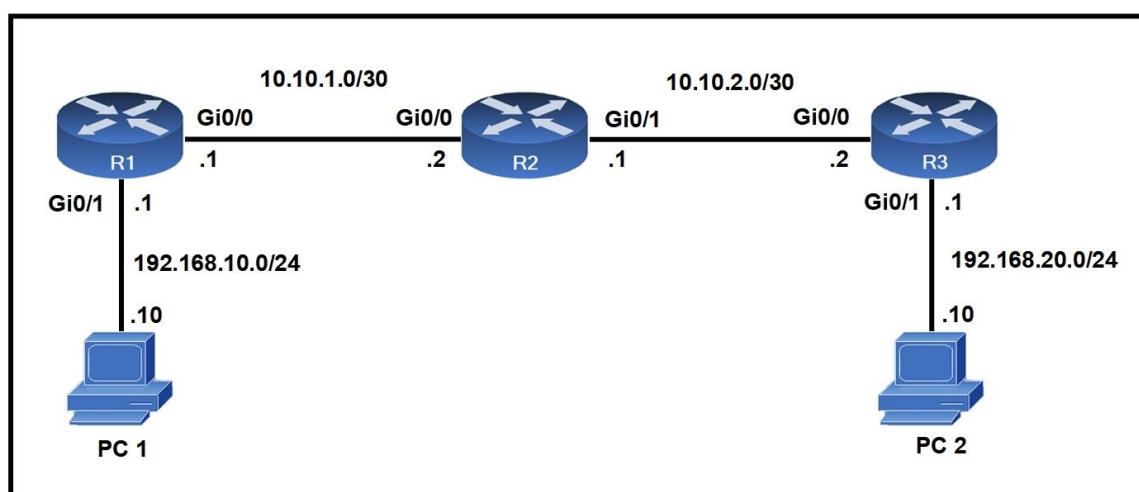
Explanation:

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 PC 2, 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

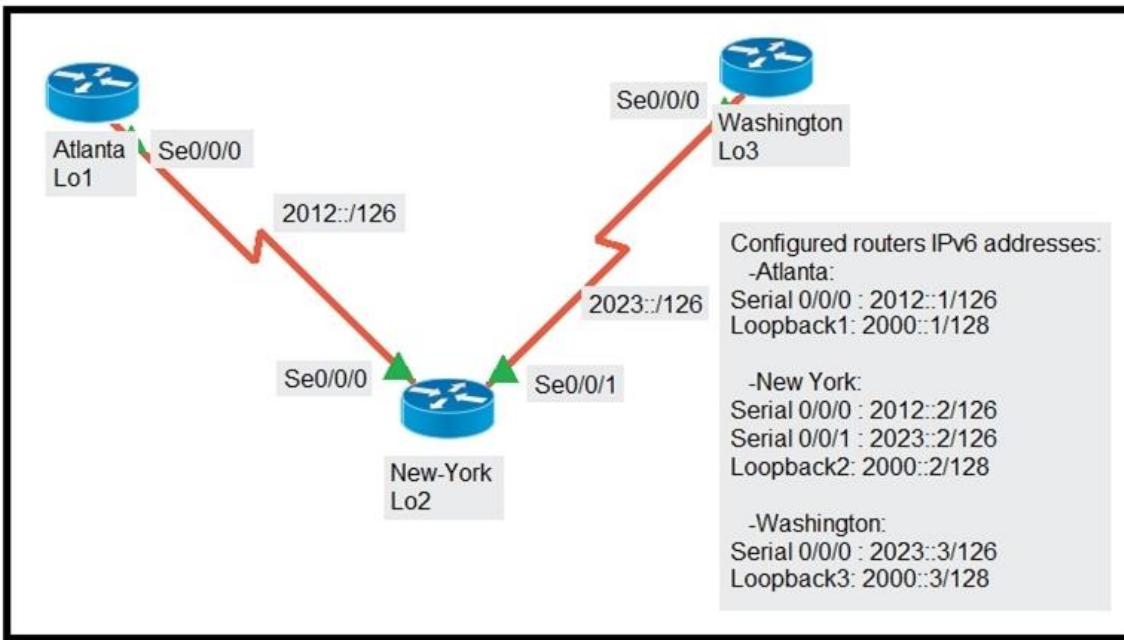
Explanation:

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::1 command on the Washington router
- B. Configure the ipv6 route 2023::1/126 2012::1 command on the Atlanta router.
- C. Configure theIpv6 route 2012::1/126 s0/0/0 command on the Atlanta router
- D. Configure the ipv6 route 2023::1/126 2012::2 command on the Atlanta router
- E. Configure the ipv6 route 2012::1/126 2023::2 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.

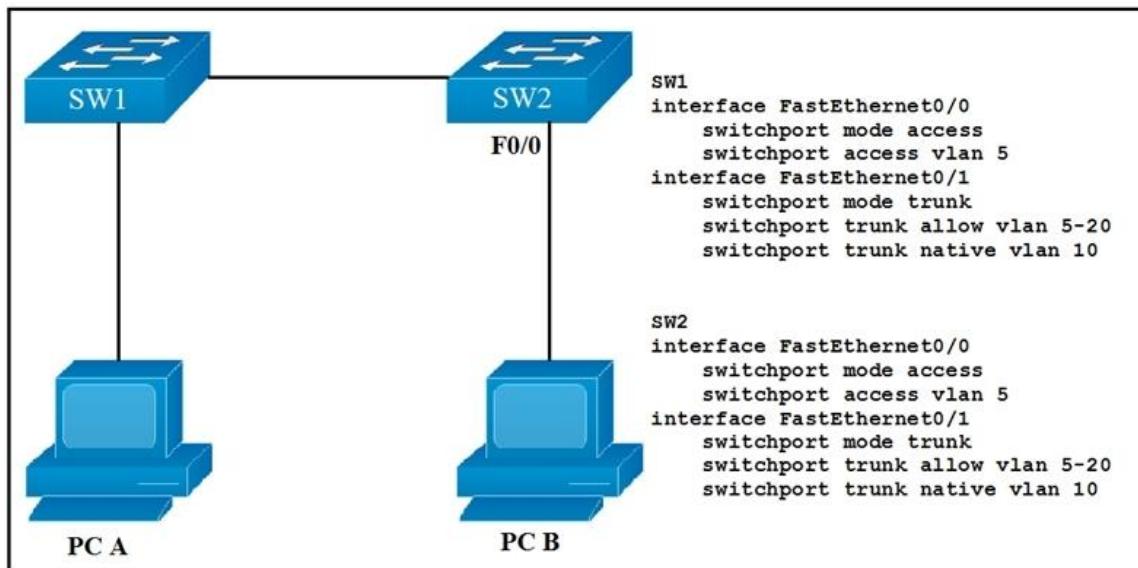
An example of how to configure an Etherchannel:

```
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

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

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: C

Explanation:

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

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

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

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. llpd timer
- B. llpd holdtime
- C. llpd reinit
- D. llpd tlv-select

Answer: C

Explanation:

- + llpd holdtime seconds: Specify the amount of time a receiving device should hold the information from your device before discarding it
 - + llpd reinit delay: Specify the delay time in seconds for LLDP to initialize on an interface
 - + llpd 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

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

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?

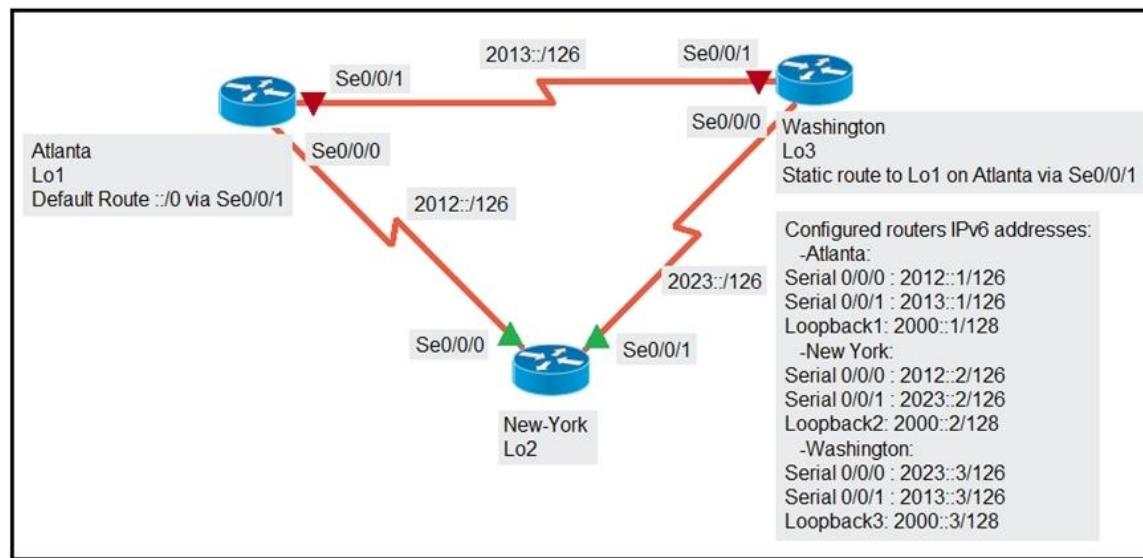
- A. to uniquely identify devices at Layer 2
- B. to allow communication with devices on a different network
- C. to differentiate a Layer 2 frame from a Layer 3 packet
- D. to establish a priority system to determine which device gets to transmit first
- E. to allow communication between different devices 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::1/128 2023::2 5
- E. ipv6 router 2000::1/128 2023::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

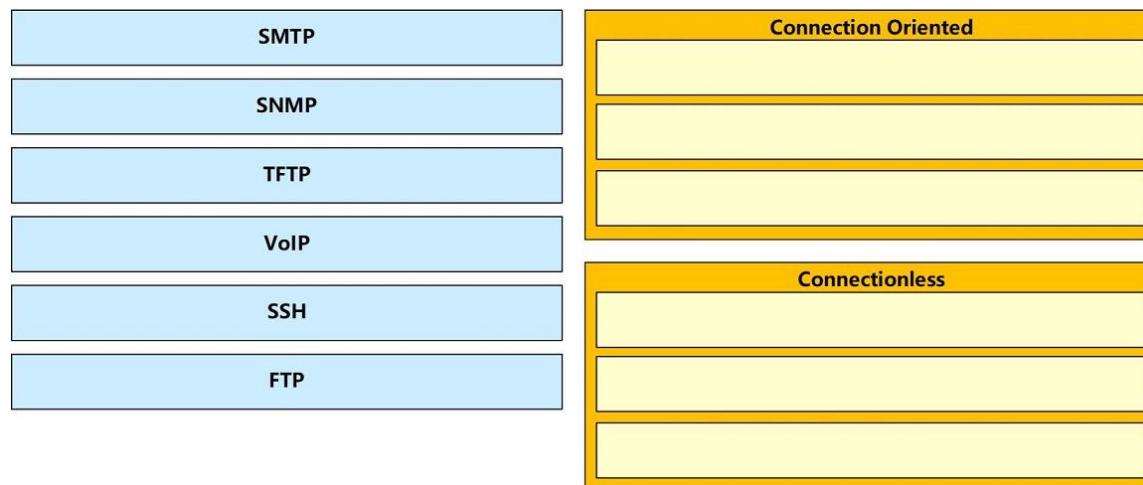
Explanation:

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

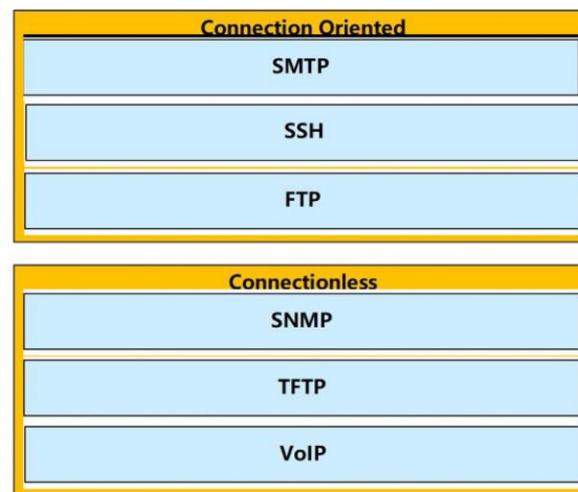
QUESTION 129

Drag and Drop Question

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



Answer:

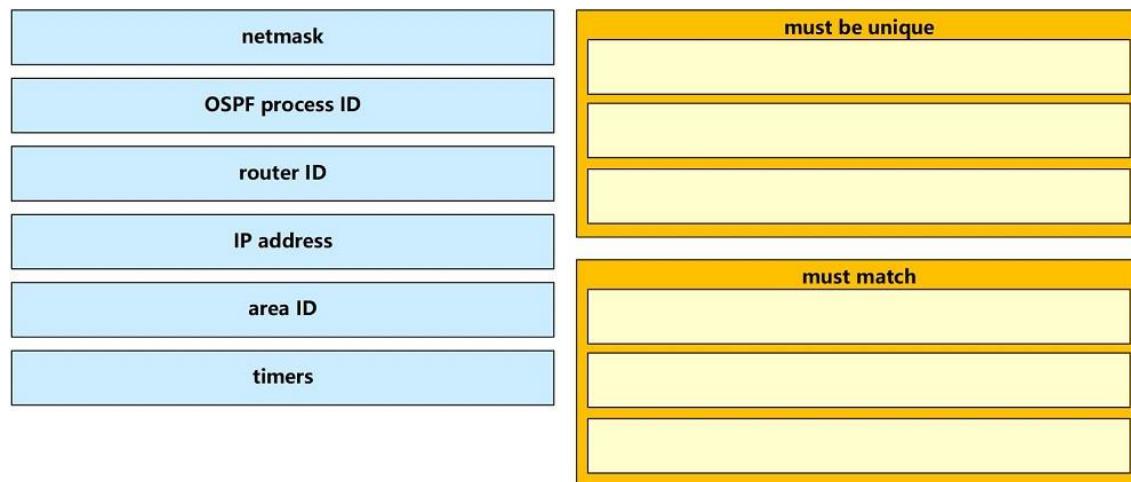
**Explanation:**

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

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:

NIC vendor OUI
NIC MAC address
default gateway
host IP address
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

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

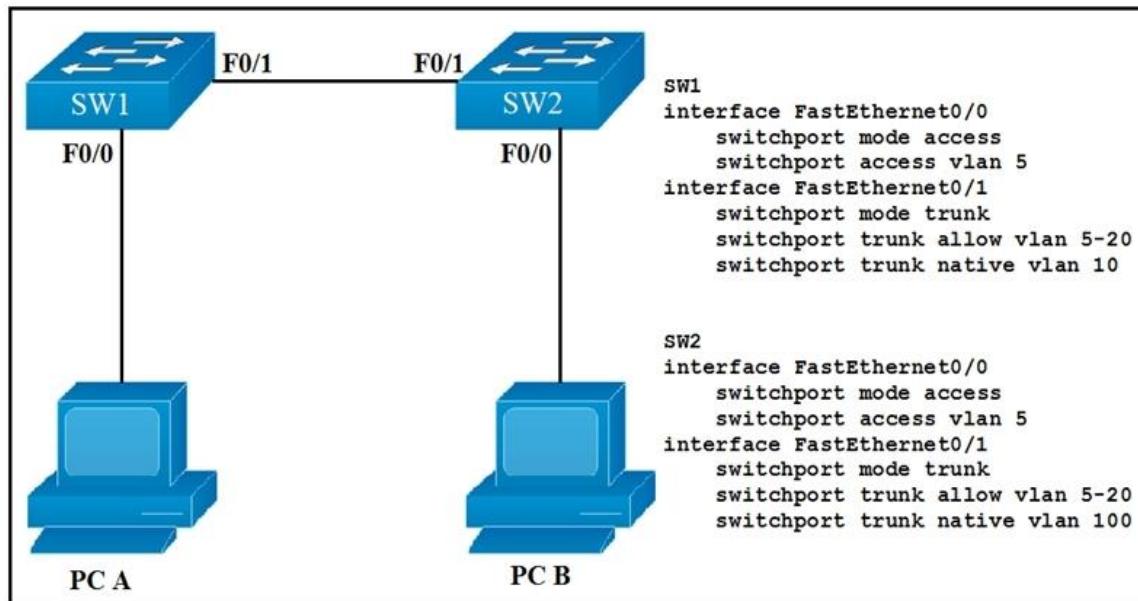
Answer: C

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

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

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**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

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

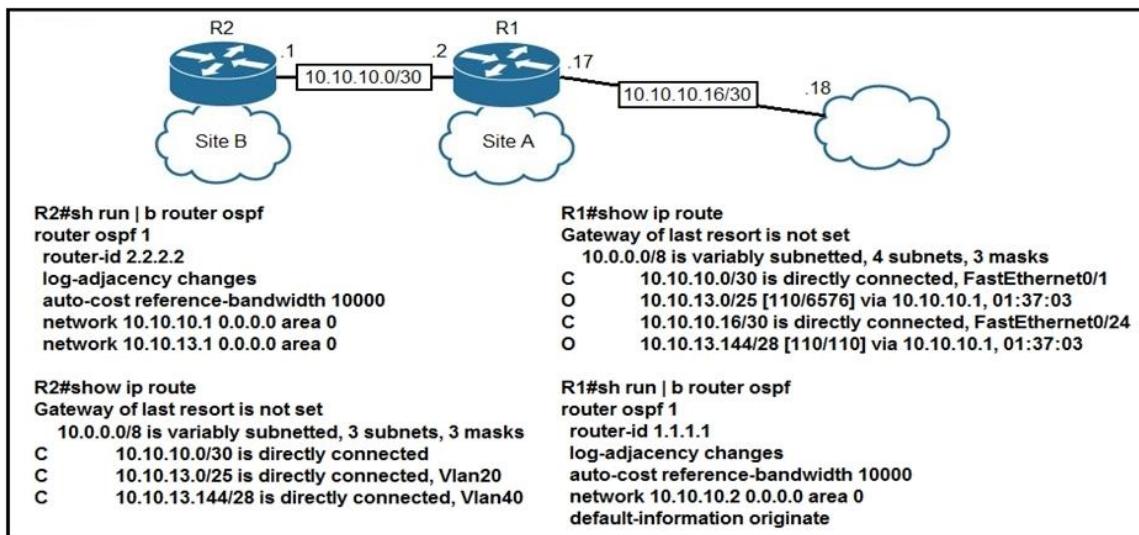
Which command can you enter to allow Telnet to be supported in addition to SSH?

- 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

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

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/swtp.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**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**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**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

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

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

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

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

QUESTION 173

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

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

Answer: B

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 give 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
Serial0/1	unassigned	YES	unset	up	up
Serial0/1.102	192.168.12.125	YES	manual	up	up
Serial0/1.103	192.168.12.129	YES	manual	up	up
Serial0/1.104	192.168.12.133	YES	manual	up	up

- 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

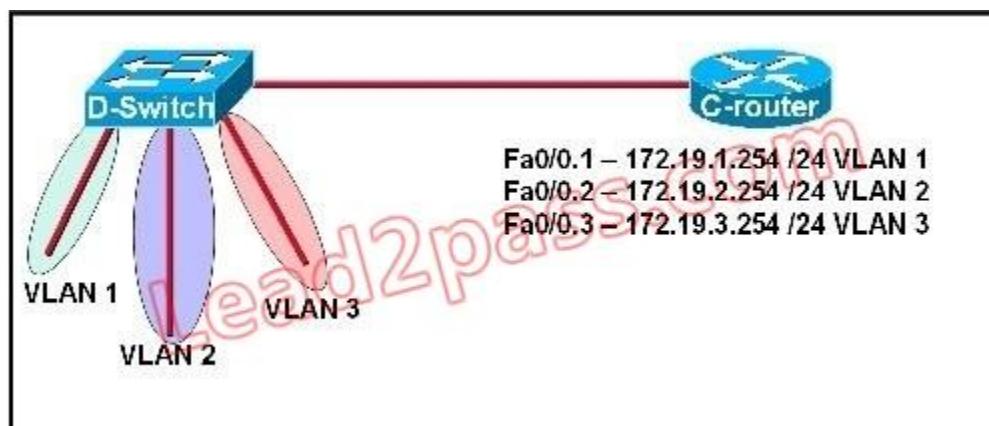
+ Broadcast address: 192.168.12.127

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?

```
Router# 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 1998 08:12 AM
```

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

Answer: A

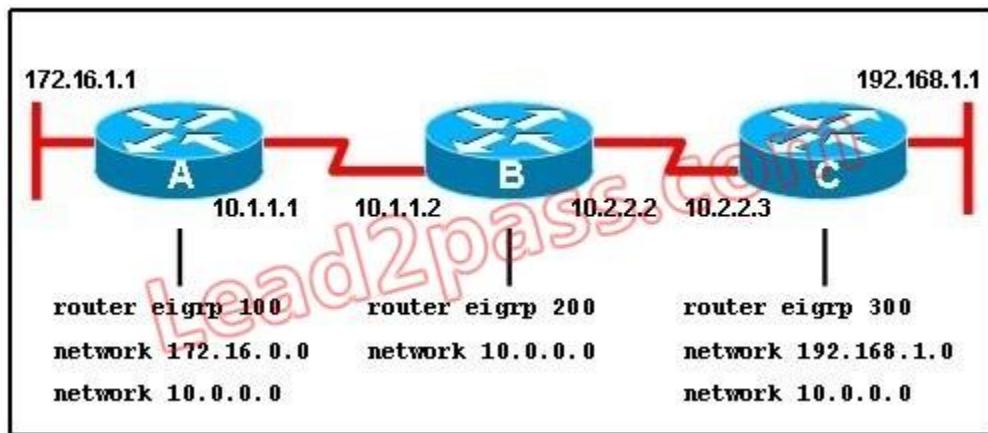
Explanation:

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

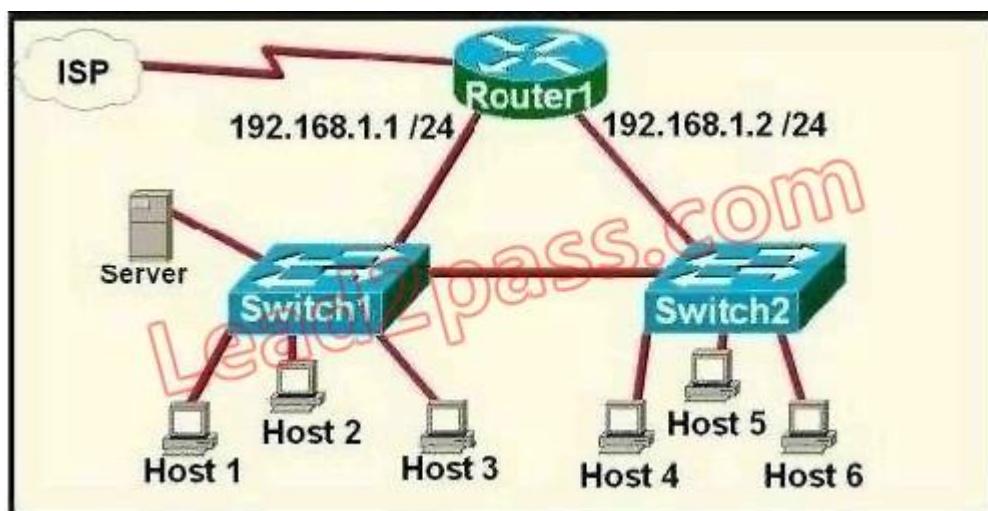
Explanation:

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 192.168.1.1/24, 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

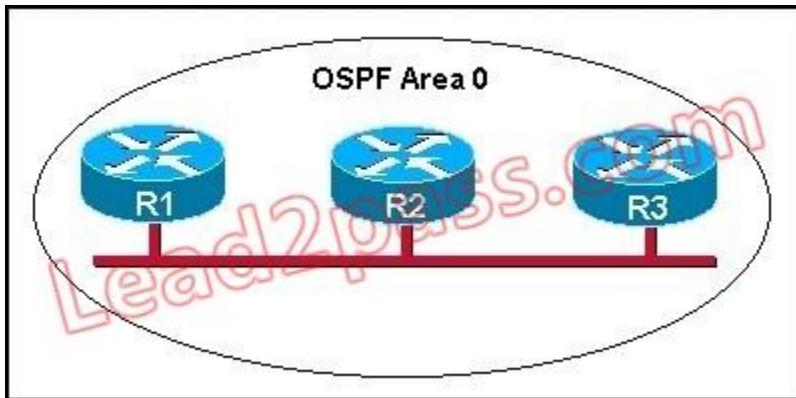
The graphic shows the output of the show ip ospf interface e0 command for routers R1 and R2. Based on the information in the graphic, what is the cause of this problem?

- 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

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

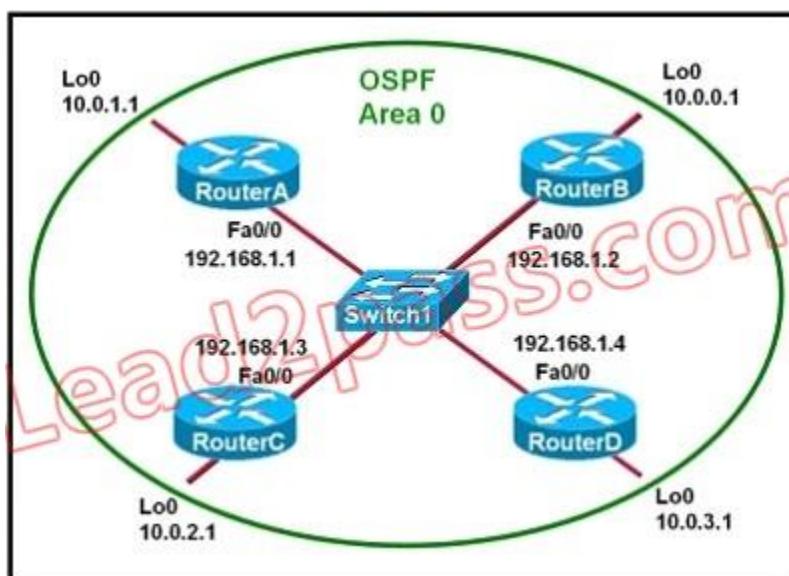
Explanation:

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

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

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

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

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:

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

QUESTION 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

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

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

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

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

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**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**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: CE**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

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

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

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?

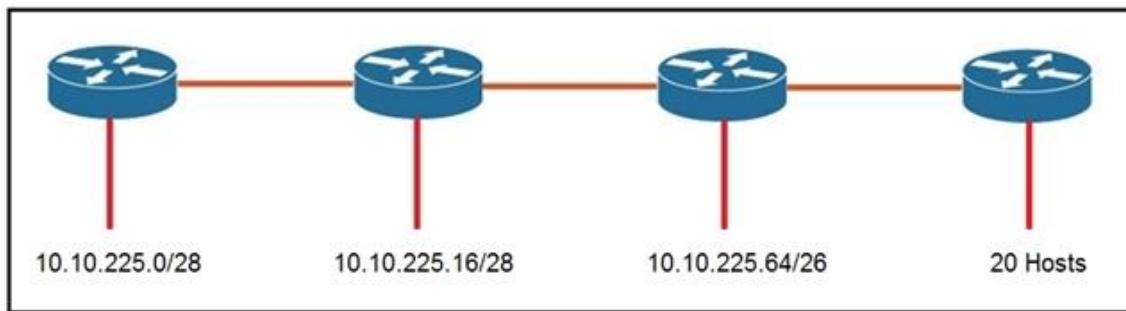
- A. 192.168.0.0/24 as summary and 192.168.0.0/28 for each floor
- B. 192.168.0.0/23 as summary and 192.168.0.0/25 for each floor
- C. 192.168.0.0/25 as summary and 192.168.0.0/27 for each floor

- 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

QUESTION 215

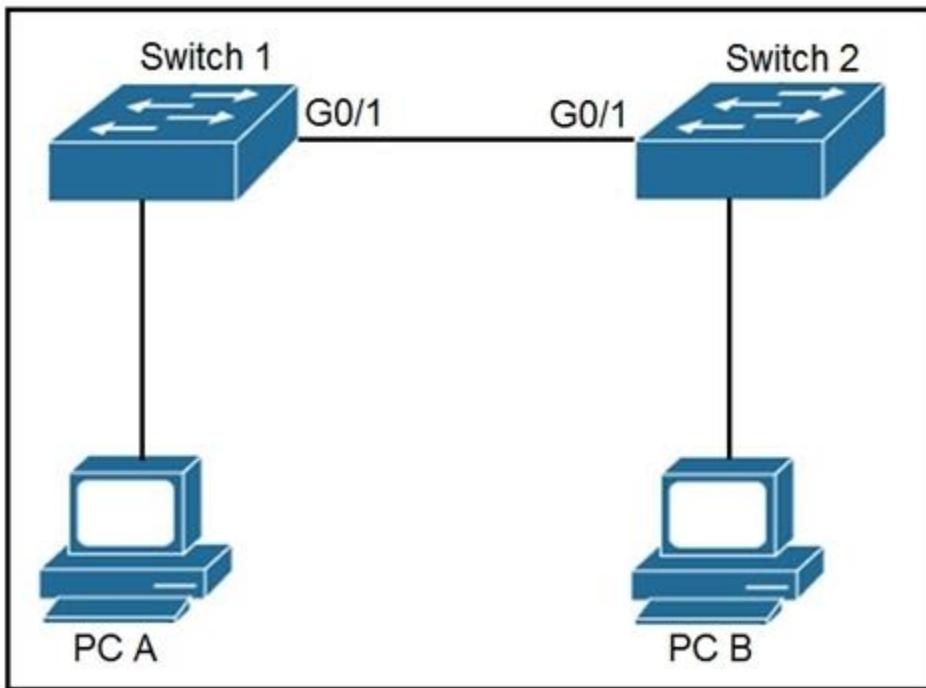
What is a characteristic of spine-and-leaf architecture?

- 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

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

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

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

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 from being established between the two routers?



```
R1#show running-config
Building configuration...
!
interface GigabitEthernet1/0
mtu 1600
ip address 192.168.0.1 255.255.255.252
negotiation auto
!
router ospf 1
router-id 1.1.1.1
passive-interface default
no passive-interface GigabitEthernet1/0
network 192.168.0.1 0.0.0.0 area 0
!
R2#show running-config
Building configuration...
!
interface GigabitEthernet2/0
ip address 192.168.0.2 255.255.255.252
negotiation auto
!
router ospf 1
router-id 2.2.2.2
passive-interface default
no passive-interface GigabitEthernet2/0
network 192.168.0.2 0.0.0.0 area 0
```

- 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

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
```

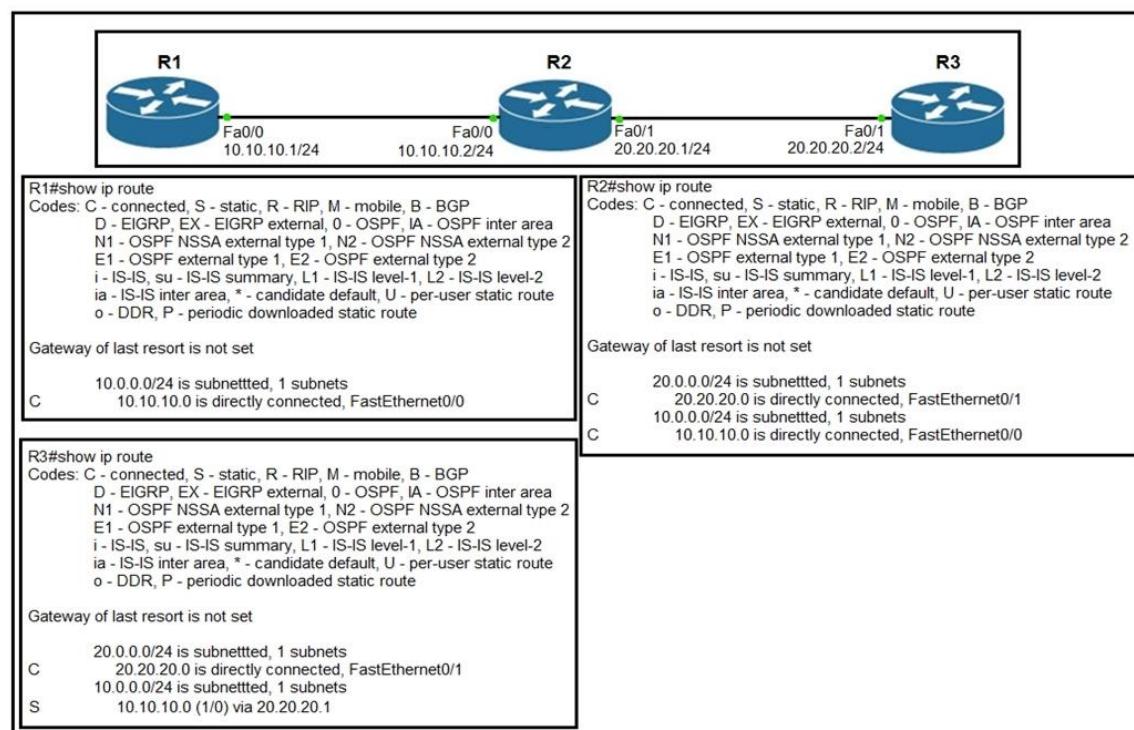
```
....  
D 172.16.32.0/27 [90/2888597172] via 20.1.1.1  
O 172.16.32.0/19 [110/292094] via 20.1.1.10  
R 172.16.32.0/24 [120/2] via 20.1.1.3
```

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

Answer: A

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

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

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

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

QUESTION 234

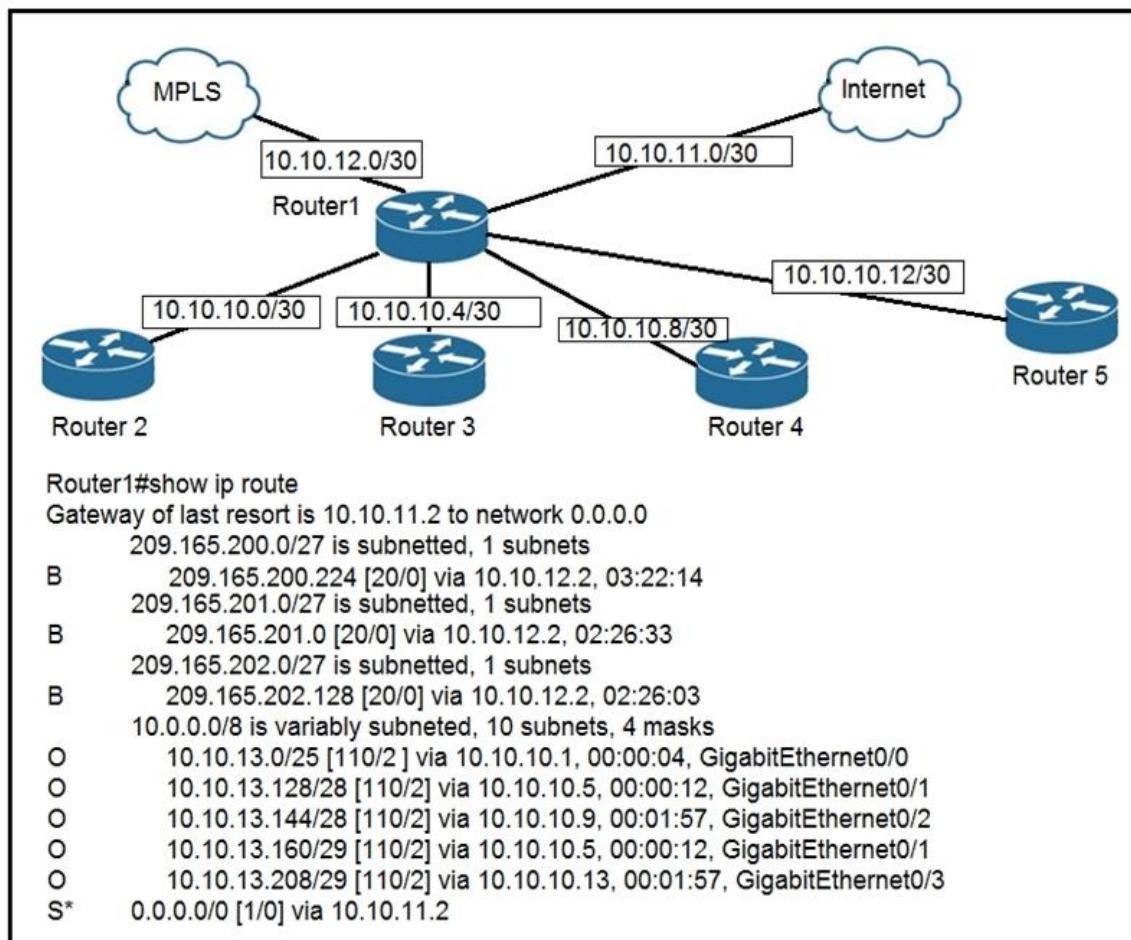
Refer to the exhibit. A router reserved these five routes from different routing information sources. Which two routes does the router install in its routing table? (Choose two)

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**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

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

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

Answer: B

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

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

QUESTION 242

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

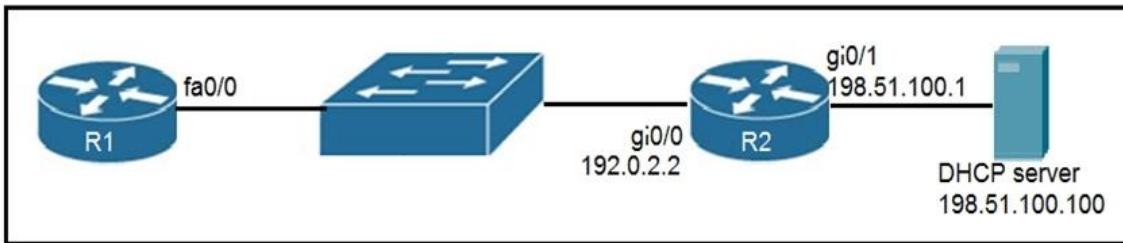
- A. A certificate has expired
- B. An interface line has changed status
- C. A TCP connection has been torn down
- D. An ICMP connection has been built

Answer: B

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)

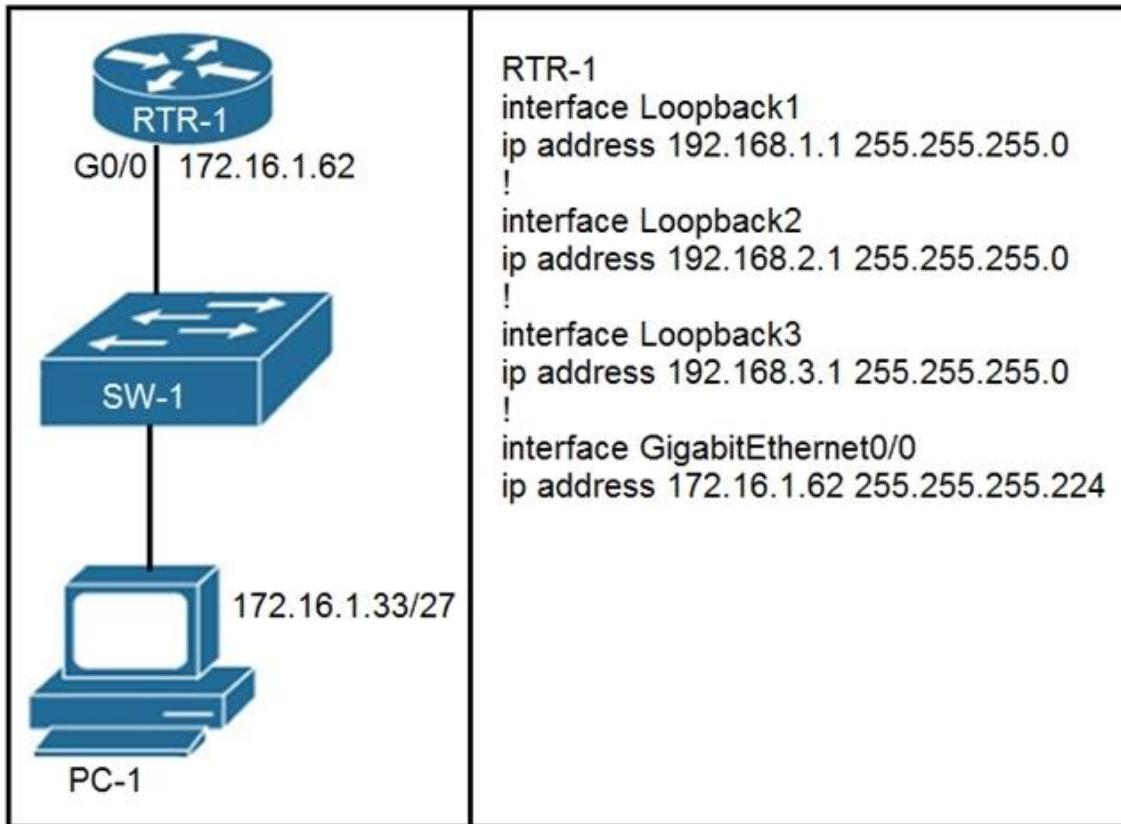


- A. R1(config)# interface fa0/0
R1(config-if)# ip helper-address 198.51.100.100
- B. R2(config)# interface gi0/0
R2(config-if)# ip helper-address 198.51.100.100
- C. R1(config)# interface fa0/0
R1(config-if)# ip address dhcp
R1(config-if)# no shutdown
- D. R2(config)# interface gi0/0
R2(config-if)#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

Answer: BC

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

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

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:

<https://ipcisco.com/lesson/dynamic-arp-inspection/>

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

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

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	802.1q double-tagging VLAN-hopping attack
configure DHCP snooping	MAC flooding attack
configure the native VLAN with a nondefault VLAN ID	man-in-the-middle spoofing attack
disable DTP	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

focused on network

focused on devices

user input is a configuration

user input is a policy

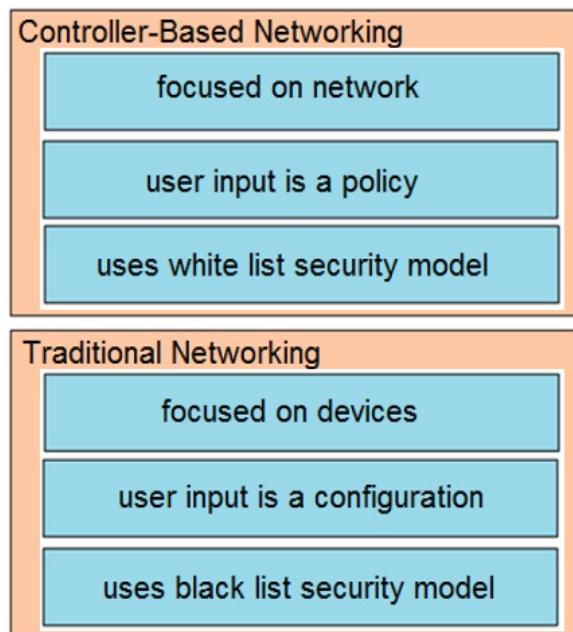
uses white list security model

uses black list security model

Controller-Based Networking

Traditional Networking

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

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

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

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

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.

Which two configurations are valid reasons for the interface conditions?(choose two)

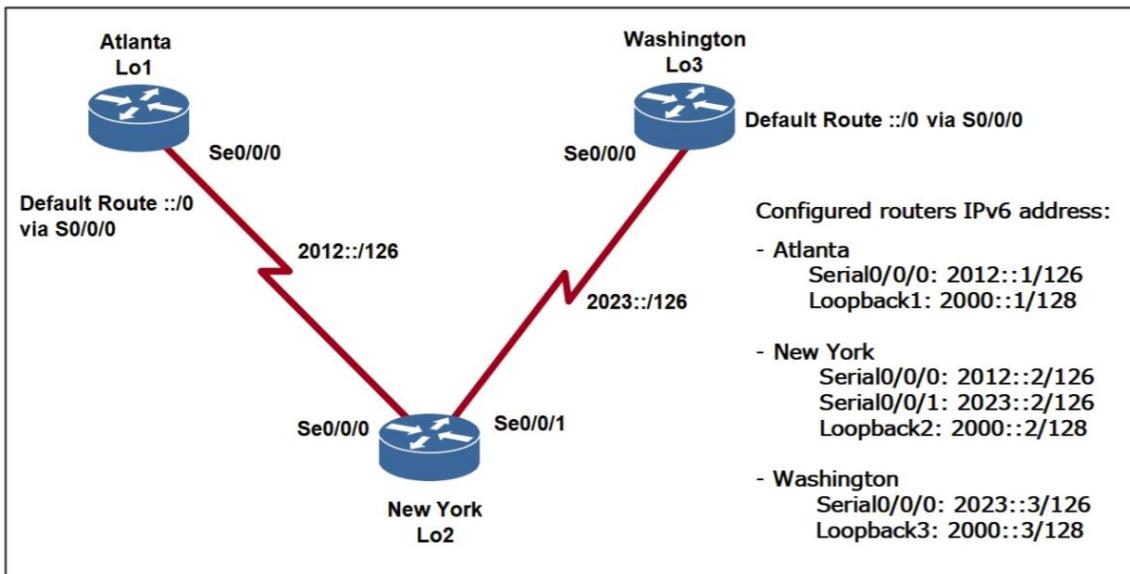
- A. There is a duplex mismatch
- B. There is a speed mismatch
- C. There is a protocol mismatch
- D. The interface is shut down
- E. The interface is error-disabled

Answer: BE

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: DE

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?

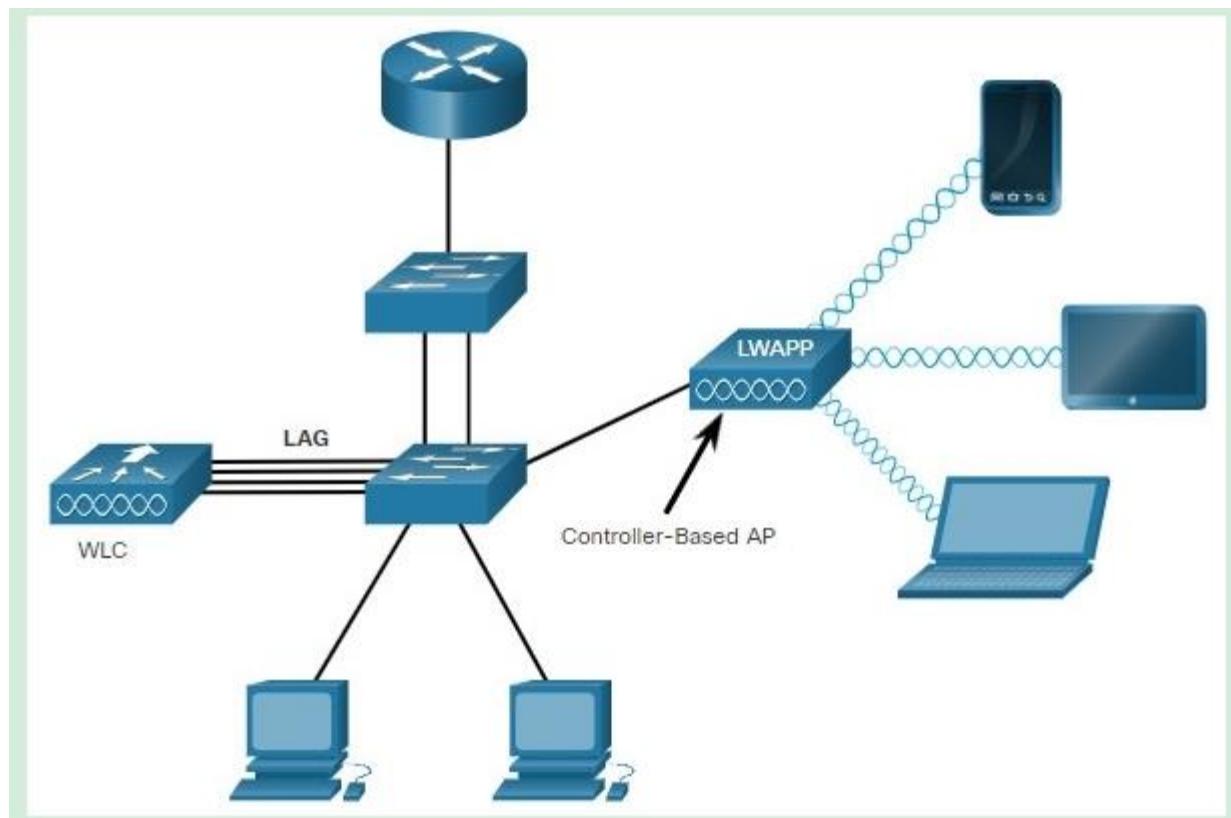
- A. register with a single access point that controls traffic between wired and wireless endpoints.
- B. use SSIDs to distinguish between wireless clients.
- C. send LWAPP packets to access points.
- D. monitor activity on wireless and wired LANs

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 figure below. 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 users password? (Choose two.)

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

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

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

QUESTION 277

An engineer is configuring NAT to translate the source subnet of 10.10.0.0/24 to any of three addresses 192.168.30.1, 192.168.3.2, 192.168.3.3.

Which configuration should be used?

- A. enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
route-map permit 10.10.0.0 255.255.255.0
ip nat outside destination list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
- B. enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.255
ip nat outside destination list 1 pool mypool
interface g1/1

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

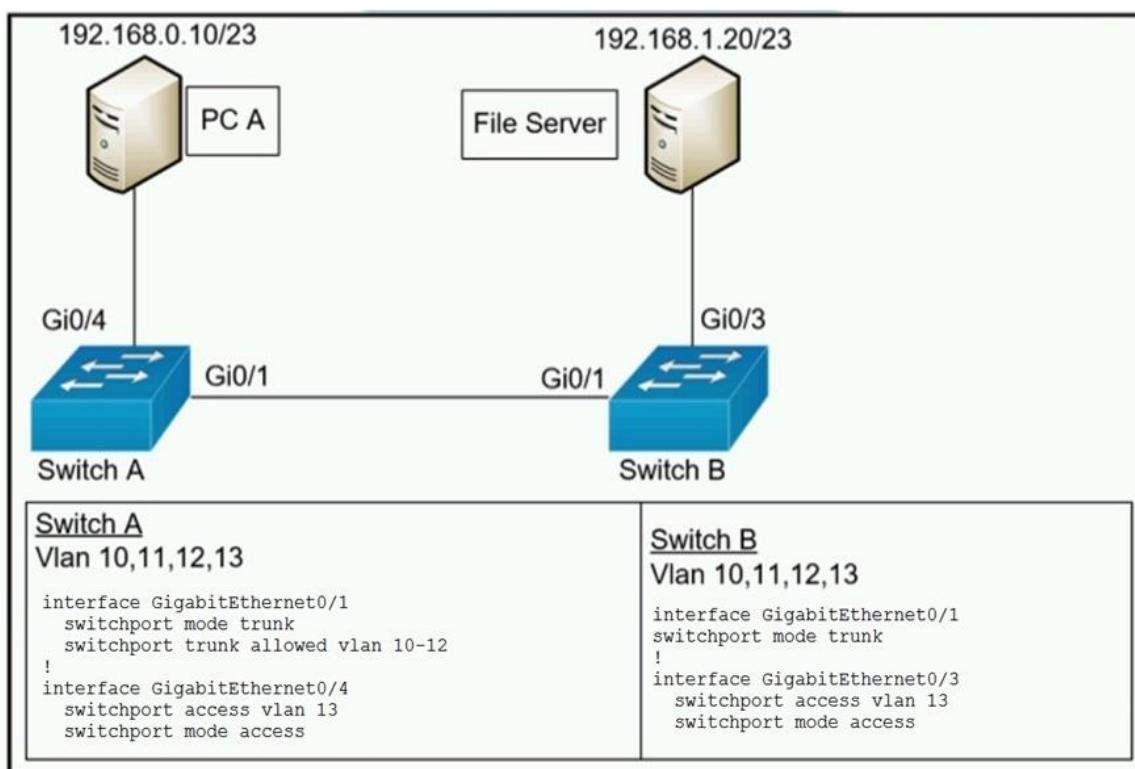
- A. TCP uses checksum, acknowledgement, and retransmissions, and UDP uses checksums only.
- B. TCP uses two-dimensional parity checks, checksums, and cyclic redundancy checks and UDP uses retransmissions only.
- C. TCP uses checksum, parity checks, and retransmissions, and UDP uses acknowledgements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

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

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

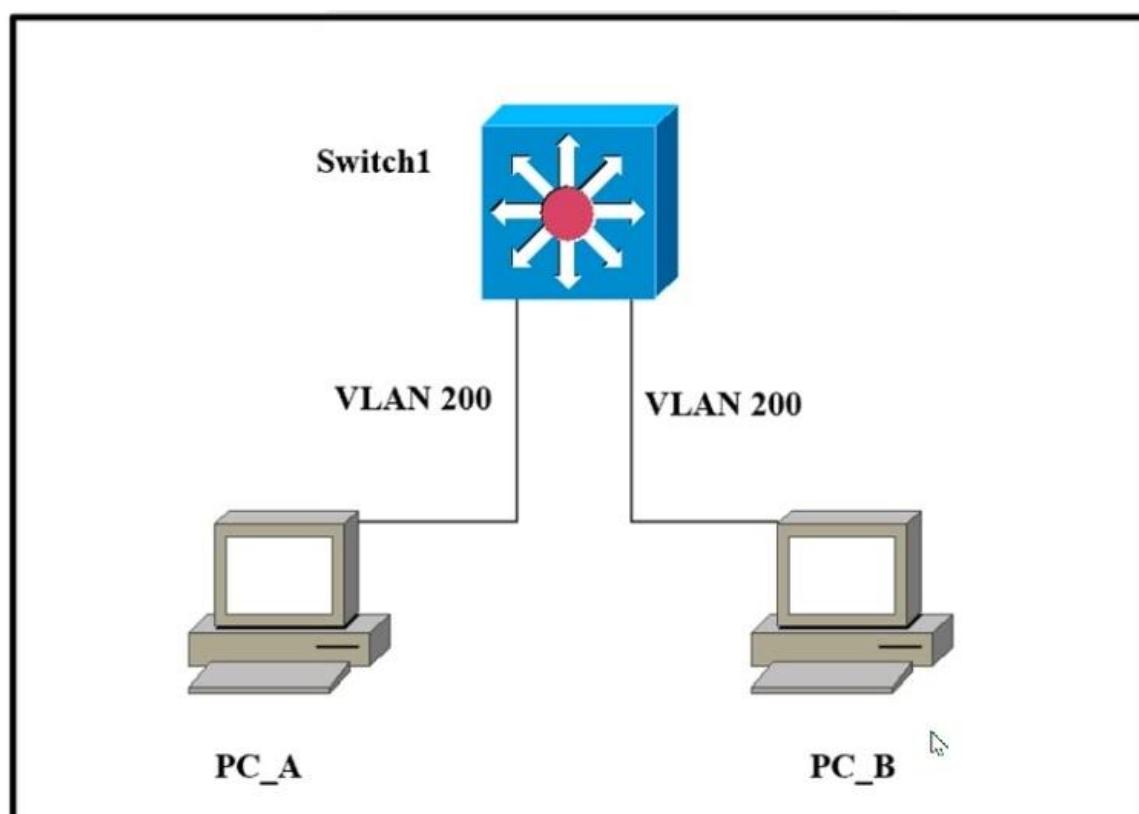
Answer: B

Explanation:

Ipsec doesn't support multicast, that is why GRE is used with VPN, and as long as the GRE is not totally 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?



- 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

QUESTION 285

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

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

Answer: A

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, what router assumes the role and forwards packets?

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

Answer: B

QUESTION 288

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

```
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**QUESTION 289**

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

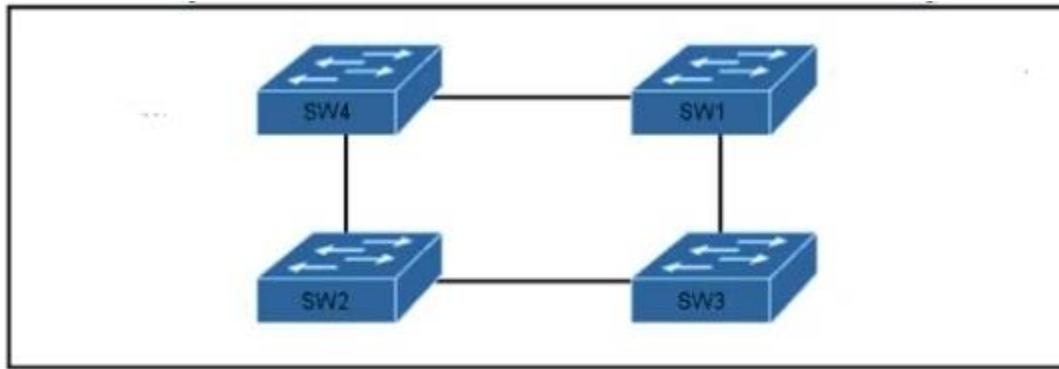
- A. switch(config-line)#lldp port-description

- 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 performs stateful inspection of traffic?

- 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

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

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

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
```

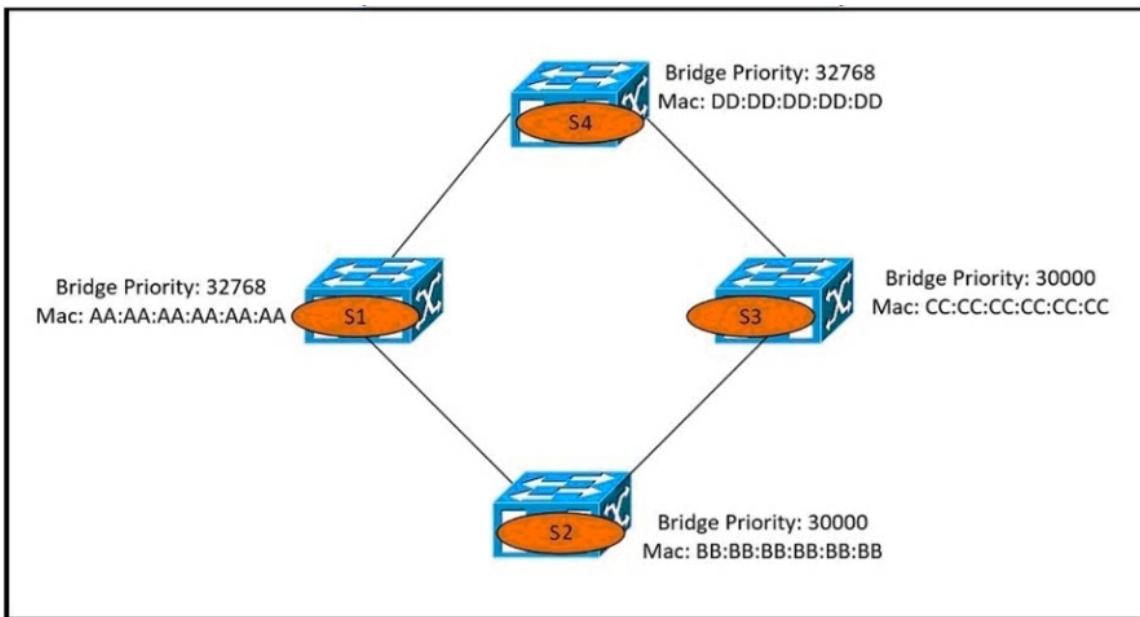
- R1(config)#username admin privilege 15 secret p@ss1234
R1(config-if)#line vty 0 4
R1(config-line)#login local
- R1(config)#username admin secret p@ss1234
R1(config-if)#line vty 0 4
R1(config-line)#login local
R1(config)#enable secret p@ss1234
- R1(config)#username admin
R1(config-if)#line vty 0 4
R1(config-line)#password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

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

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

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

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

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

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: AC

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

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:**

172.16.3.14 routes to ospf route 172.16.3.0-16 /28.

QUESTION 308

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**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 . . . . . : fe88::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

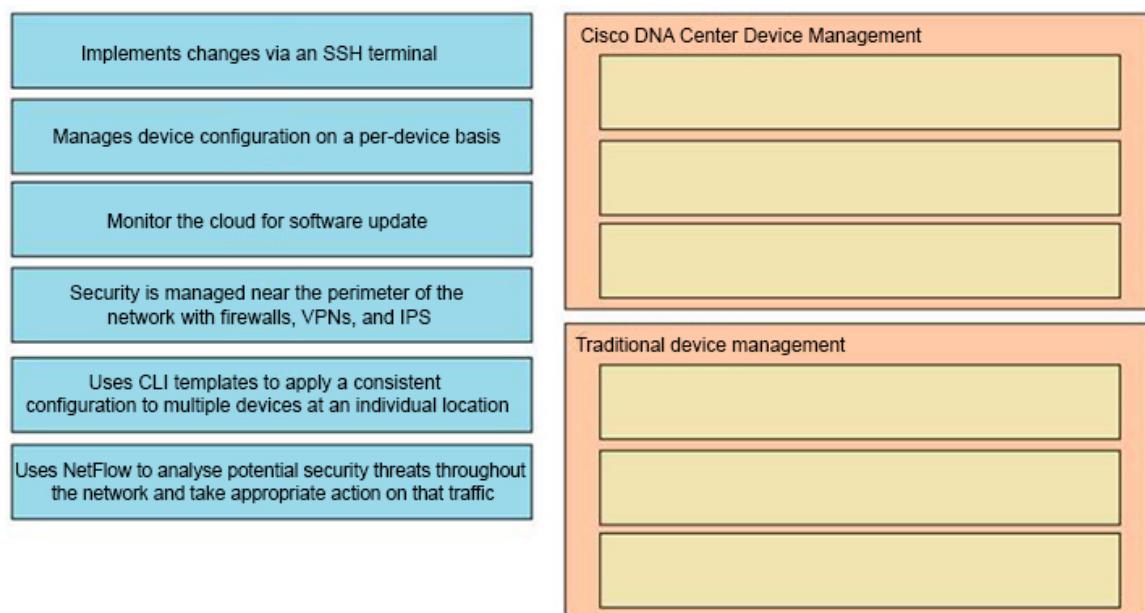
Answer:

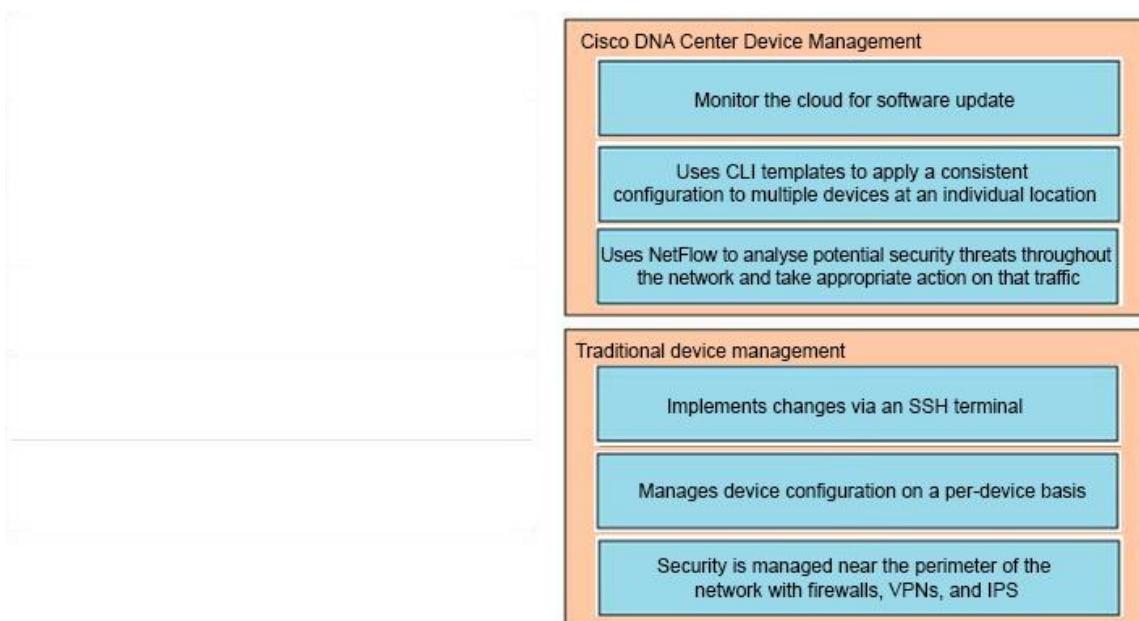
	192.168.1.255
	192.168.1.1
	192.168.1.20
	192.168.1.254
	B8-76-3F-7C-57-DF

QUESTION 310

Drag and Drop Question

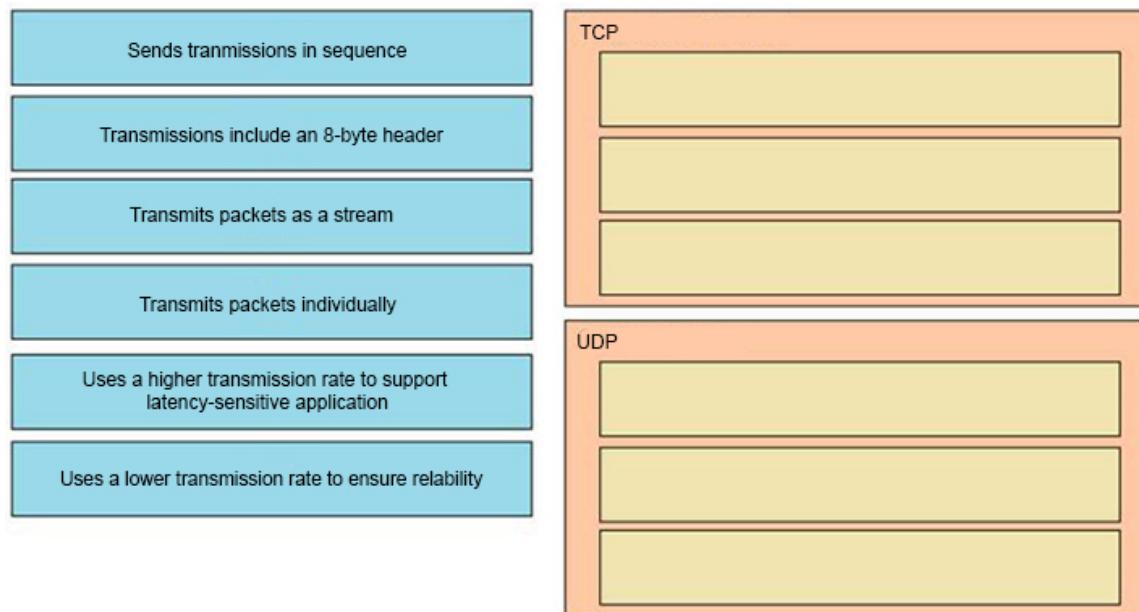
Drag the descriptions of device management from the left onto the types of device management on the right.

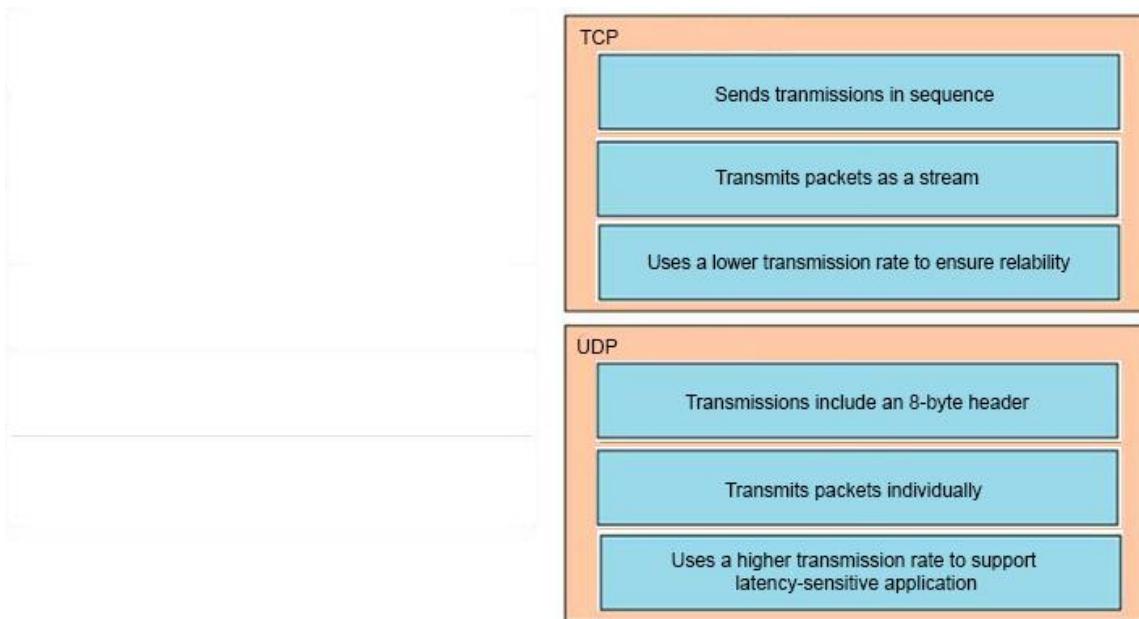
**Answer:**

**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

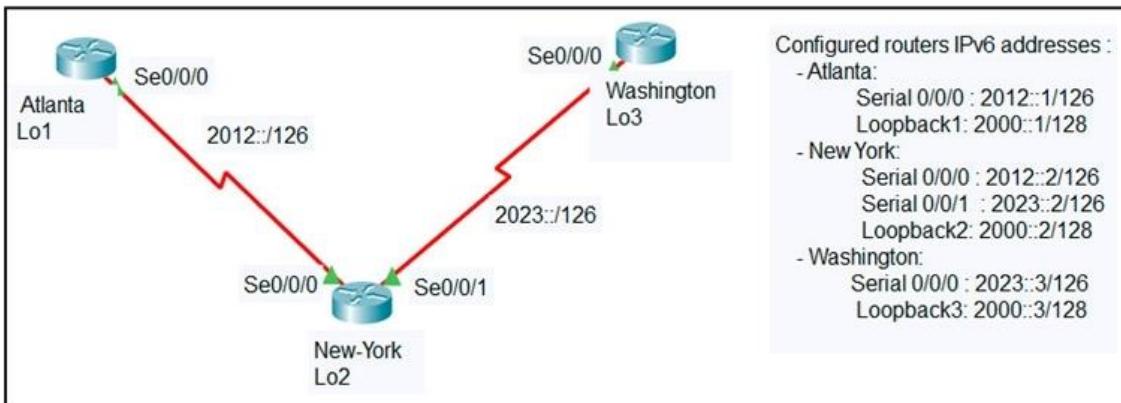
What are two functions of a server on a network? (Choose two)

- 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. When must the command 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.



Answer:

accounting

CoA

authorization

authentication

QUESTION 323

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 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

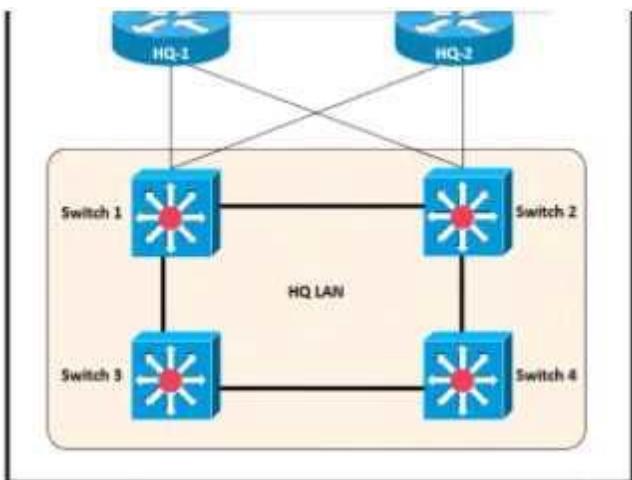
Answer: A**QUESTION 328**

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:E0:38:58:15:77
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

Section: (none)

Explanation/Reference:

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

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

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

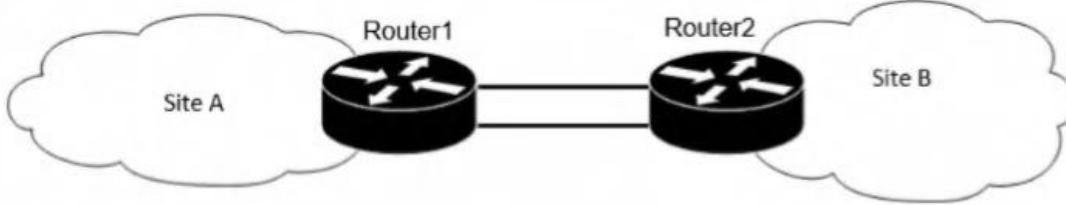
Answer: A**QUESTION 340**

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. Change native VLAN to an unused VLAN ID
- 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?



Router2#**show ip route**

Gateway of last resort is not set

10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks

- C 10.10.10.8/30 is directly connected, FastEthernet0/2
- C 10.10.10.12/30 is directly connected, FastEthernet0/1
- O 10.10.13.0/25 [110/11] via 10.10.10.9, 00:00:03, FastEthernet0/2
[110/11] via 10.10.10.13, 00:00:03, FastEthernet0/1
- C 10.10.10.4/30 is directly connected, FastEthernet0/2

- 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, 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

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/eginfo/lib/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.

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:

	MIB
	SNMP trap
	SNMP agent
	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 user's 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.

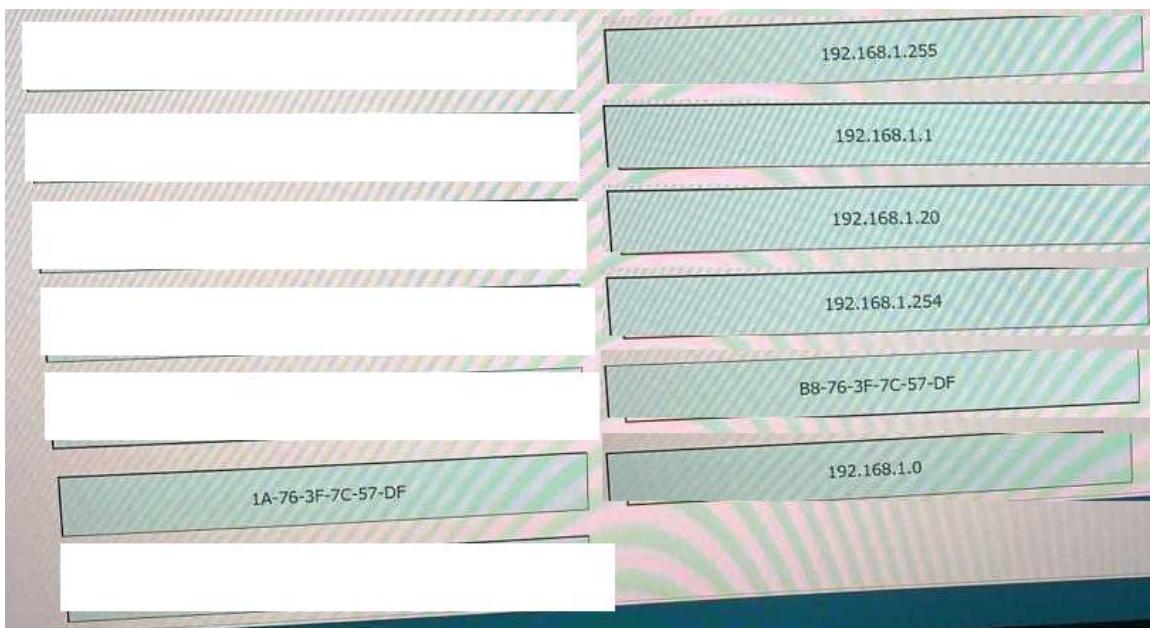
```
C:\>ipconfig/all
Windows IP Configuration

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

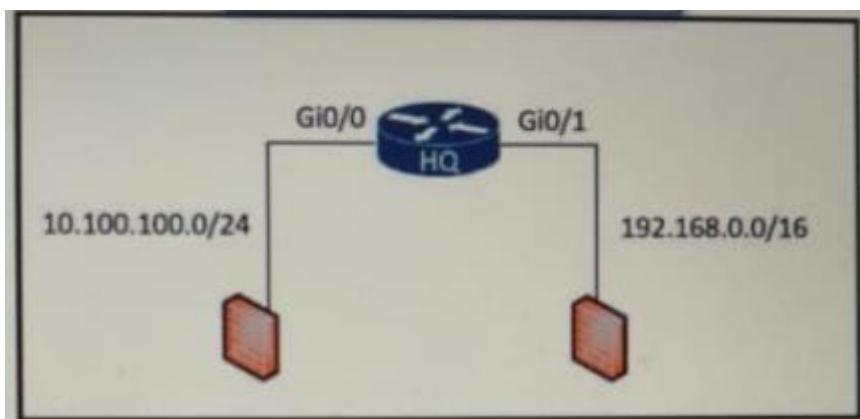
Wireless LAN adapter Local Area Connection* 12:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : 1A-76-3F-7C-57-DF
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : 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:f755x12<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
DHCPv6 Client DUID. . . . . :
    . . . . . 192.168.1.15
    . . . . . 192.168.1.16
NetBIOS over Tcpip. . . . . : Enabled
```

**Answer:**

**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?



- ip access-list standard 95
 permit 10.100.100.0 0.0.0.255
 deny 192.168.0.0 0.0.255.255
- ip access-list standard 99
 permit 10.100.100.0 0.0.0.255
 deny 192.168.0.0 0.255.255.255
- ip access-list standard 199
 permit 10.100.100.0 0.0.0.255
 deny 192.168.0.0 0.255.255.255
- ip access-list standard 199
 permit 10.100.100.0 0.0.0.255
 deny 192.168.0.0 0.0.255.255

A. Option A

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

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

QUESTION 356

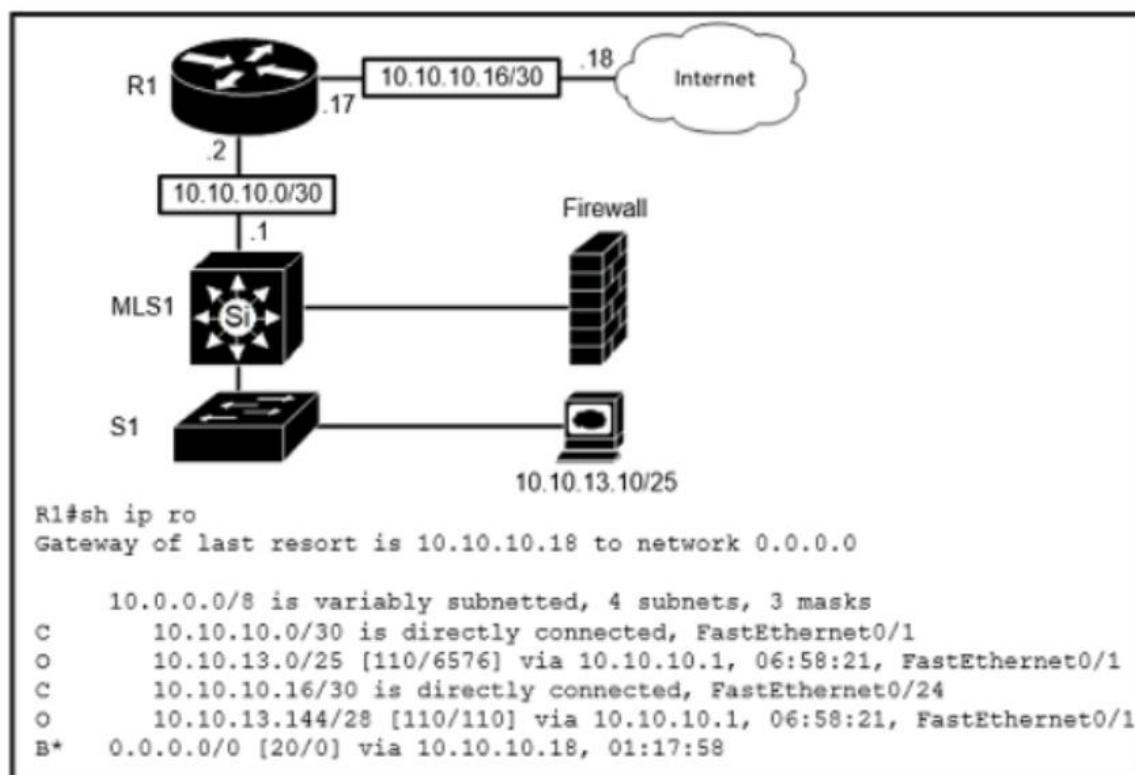
Which network plane is centralized and manages routing decisions?

- 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

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

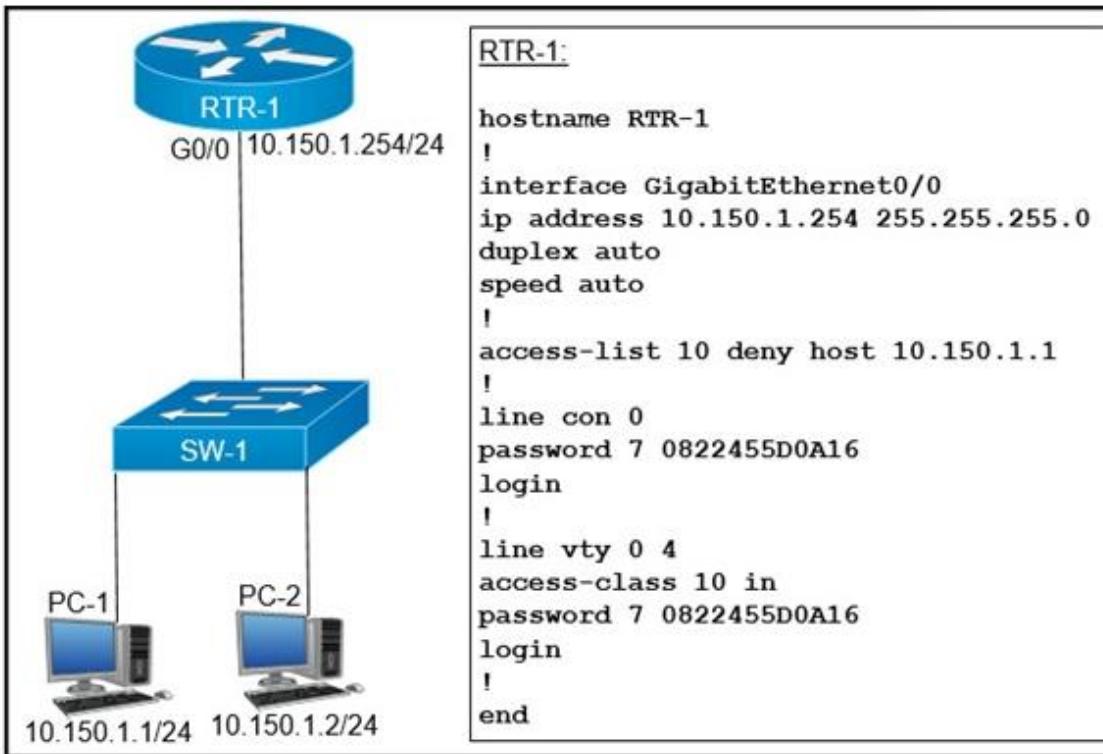
Which function does the range of private IPv4 addresses perform?

- 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

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

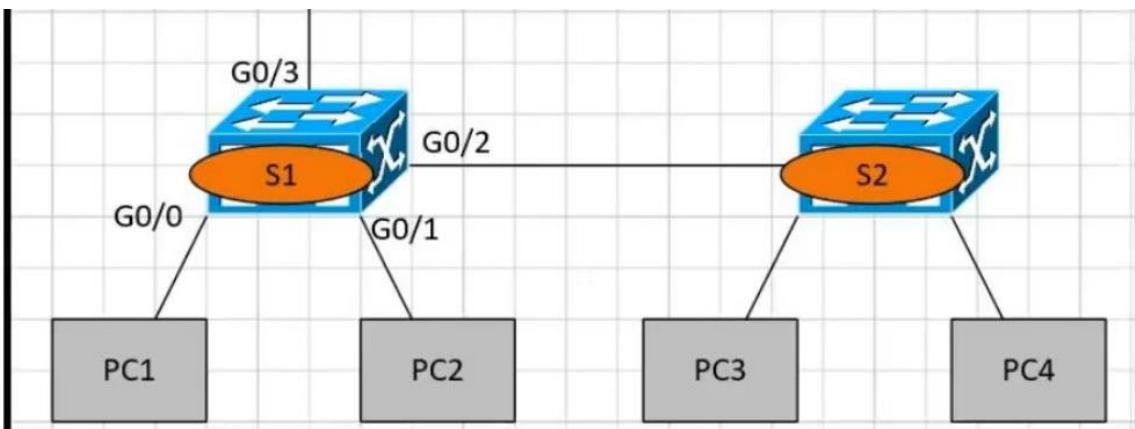
Answer: D**QUESTION 364**

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

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

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

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

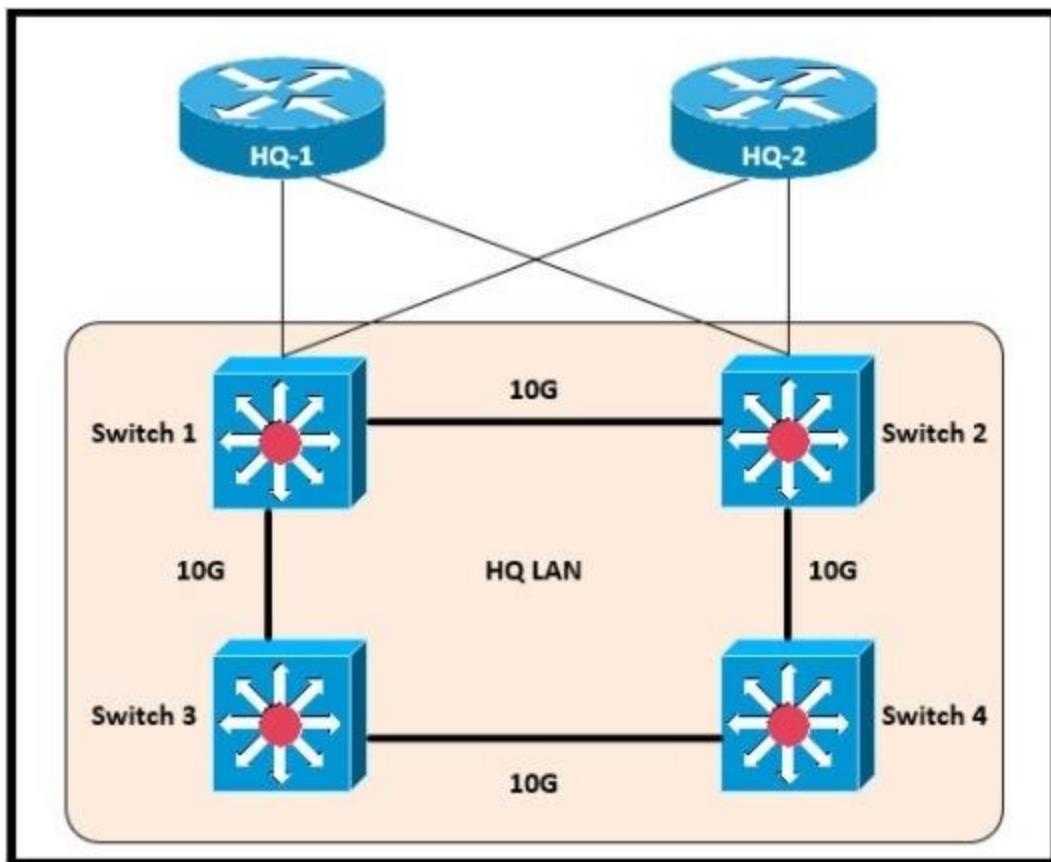
Answer: A

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

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

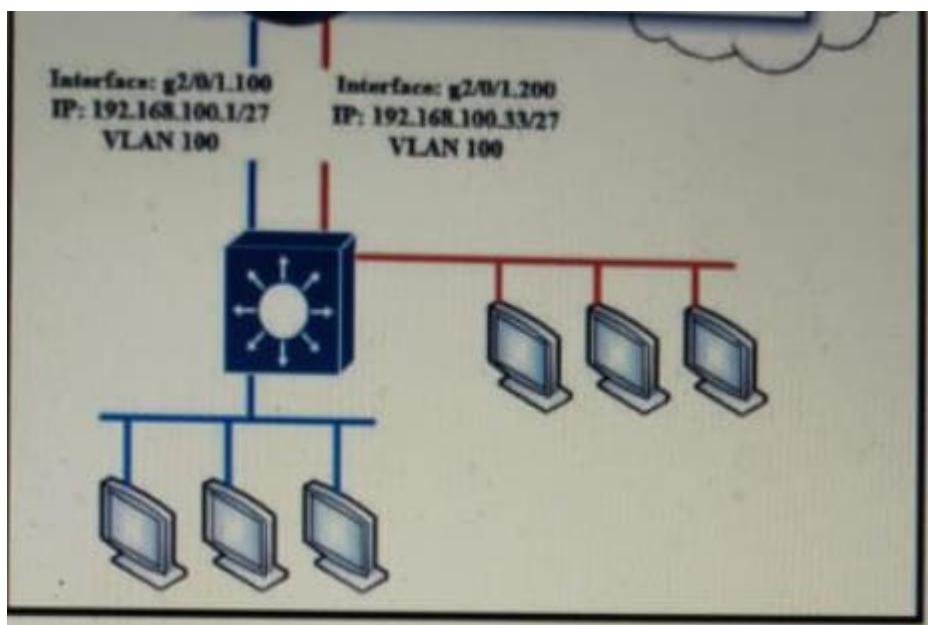
Answer: C**QUESTION 376**

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

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

Answer: A**QUESTION 377**

Refer to 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?



```
④ 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-if)#ip nat inside
Router1(config)#interface gi1/0/0
Router1(config-if)#ip nat outside

⑤ 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-if)#ip nat inside
Router1(config)#interface gi1/0/0
Router1(config-if)#ip nat outside

⑥ 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-if)#ip nat inside
Router1(config)#interface gi1/0/0
Router1(config-if)#ip nat outside

⑦ 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-if)#ip nat inside
Router1(config)#interface gi1/0/0
Router1(config-if)#ip nat outside
```

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

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

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

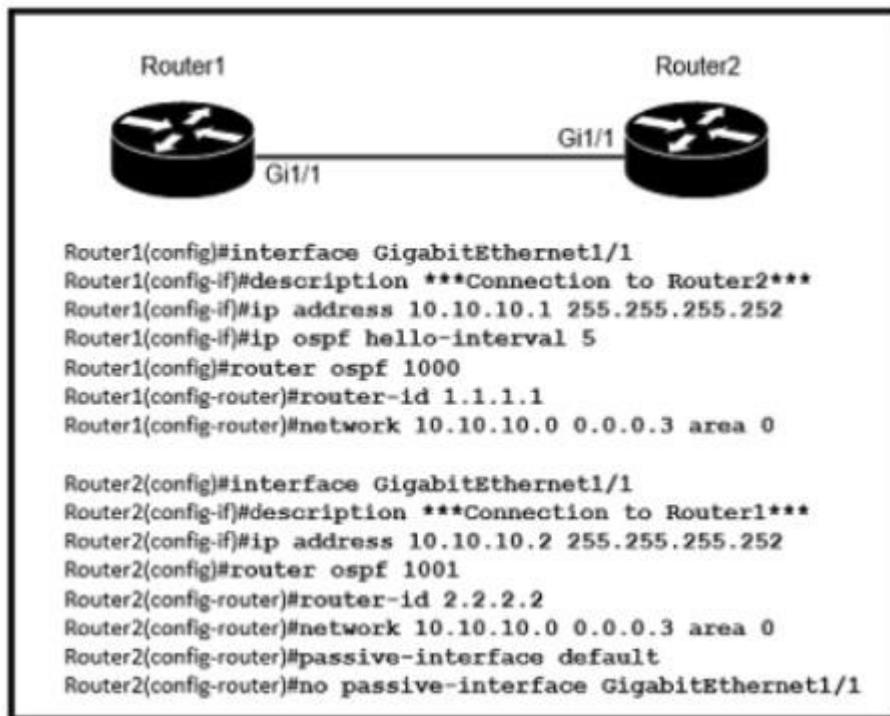
- A. It supports numerous extensibility options including cross-domain adapters and third-party SDKs.
- B. It supports high availability for management functions when operating in cluster mode.

- C. It enables easy autodiscovery of network elements in a brownfield deployment.
- D. It is designed primarily to provide network assurance.

Answer: A

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?



- 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

QUESTION 381

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

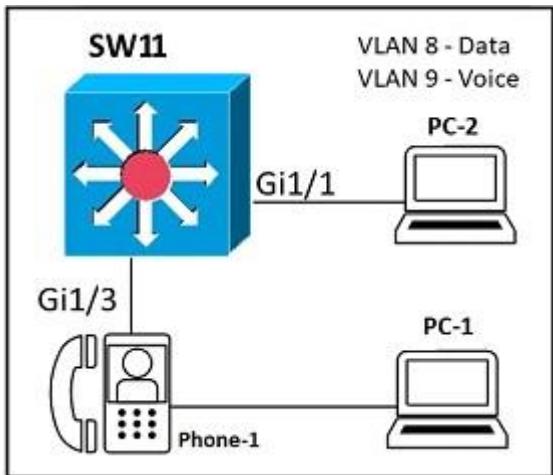
- A. initiates a ping request to the URL
- B. prompts the user to specify the desired IP address
- C. continuously attempts to resolve the URL until the command is cancelled
- D. sends a broadcast message in an attempt to resolve the URL

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.

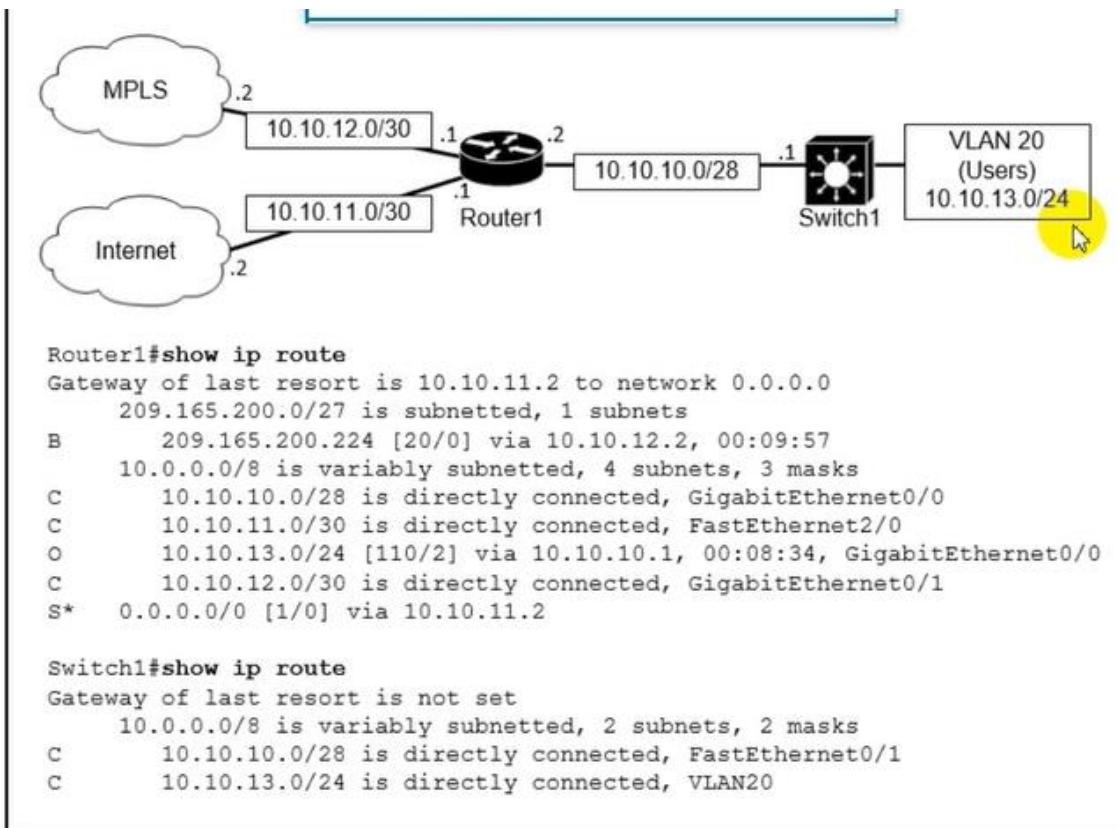
What must be configured when using active mode on both sides of the connection?

- 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

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: A

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

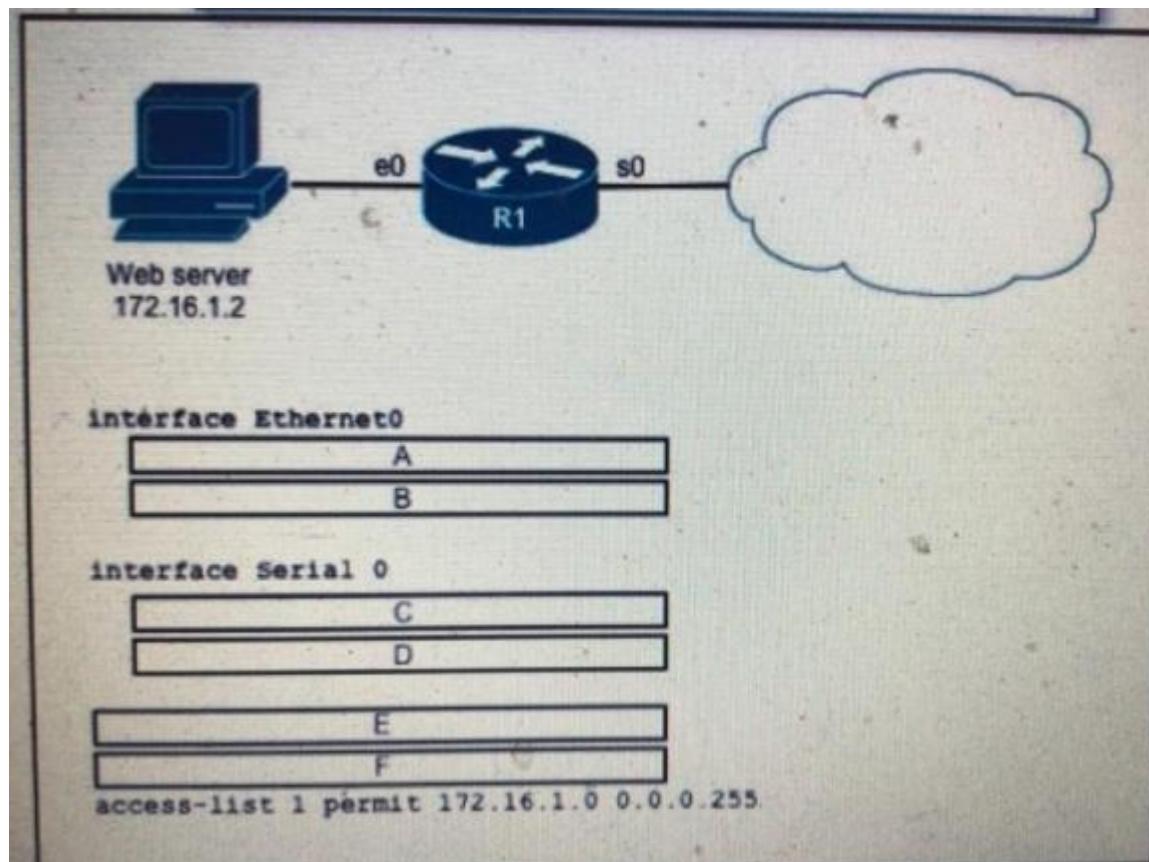
- protocol
- C. TCP is not reliable and is a connectionless protocol; UDP is reliable and is a connection-oriented protocol
 - D. TCP is reliable and is a connectionless protocol; UDP is not reliable and is a connection-oriented protocol

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 nat inside
ip address 45.83.2.214 255.255.255.240
ip nat outside
ip nat inside source static tcp 172.16.1.2 80 45.83.2.214 80 extendable
ip nat inside source list 1 interface s0 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

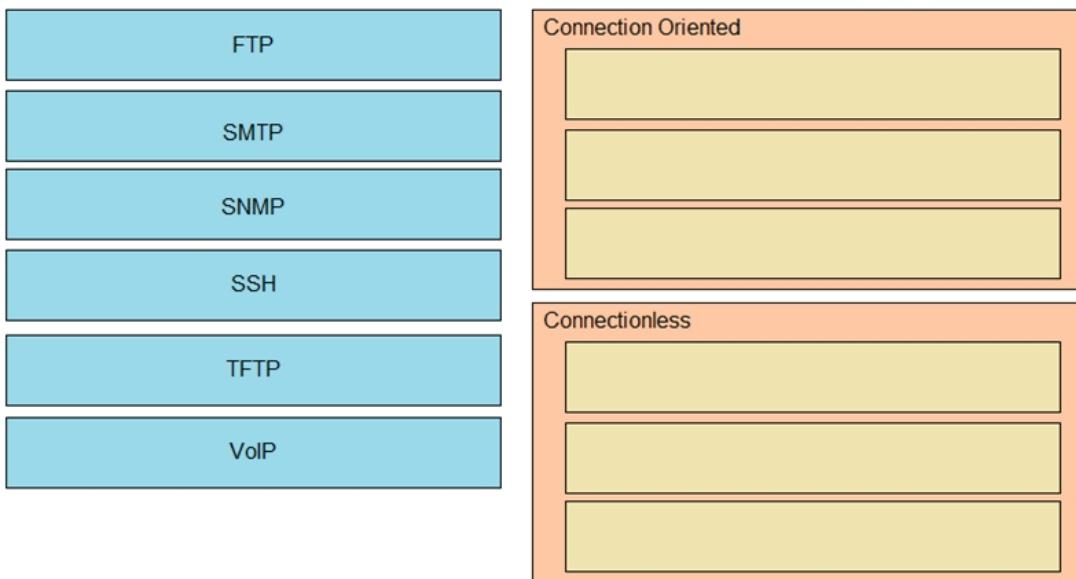
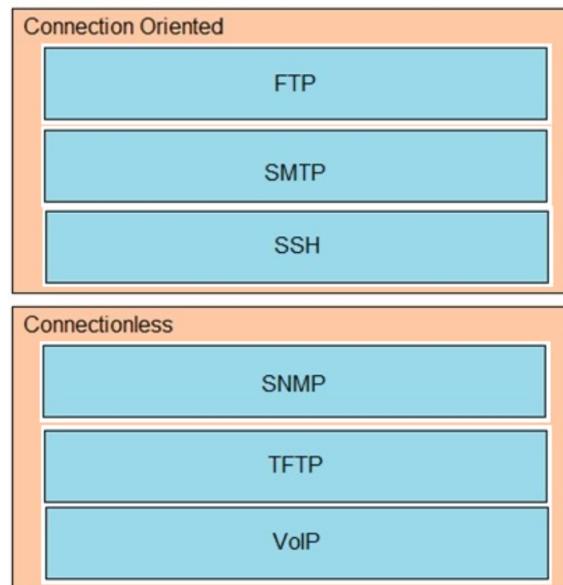
Answer:

PQ
CBWGQ
WFQ
CQ
FIFO

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

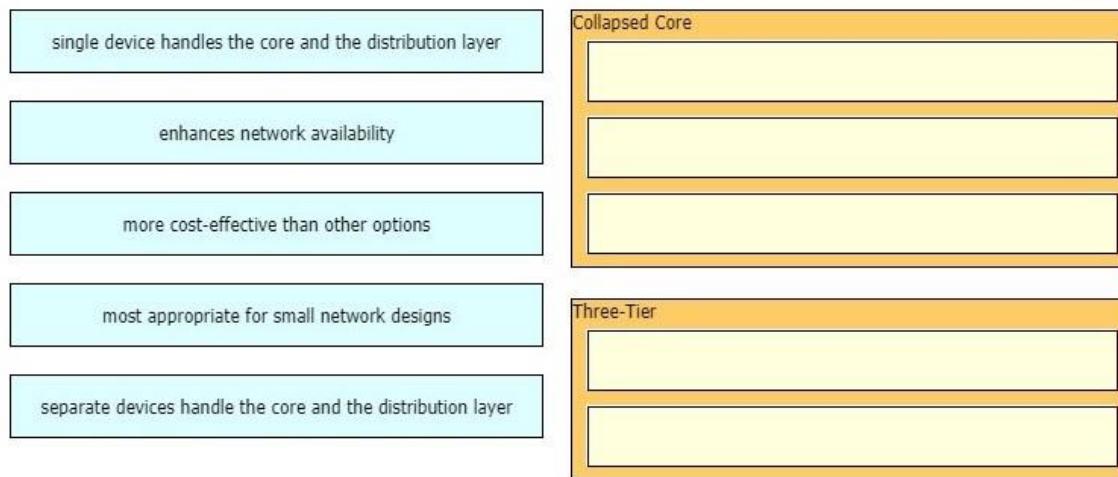
Answer:

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

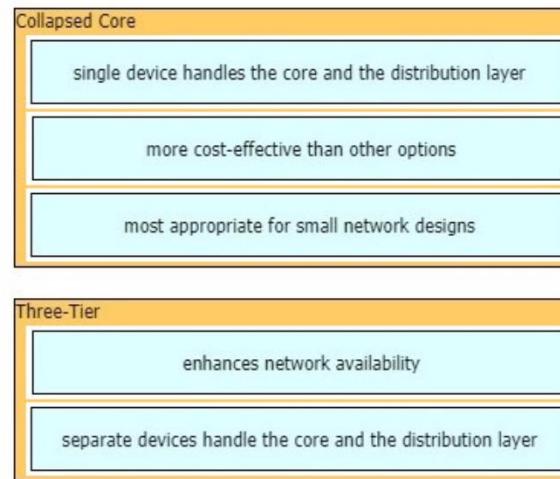
QUESTION 397

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?

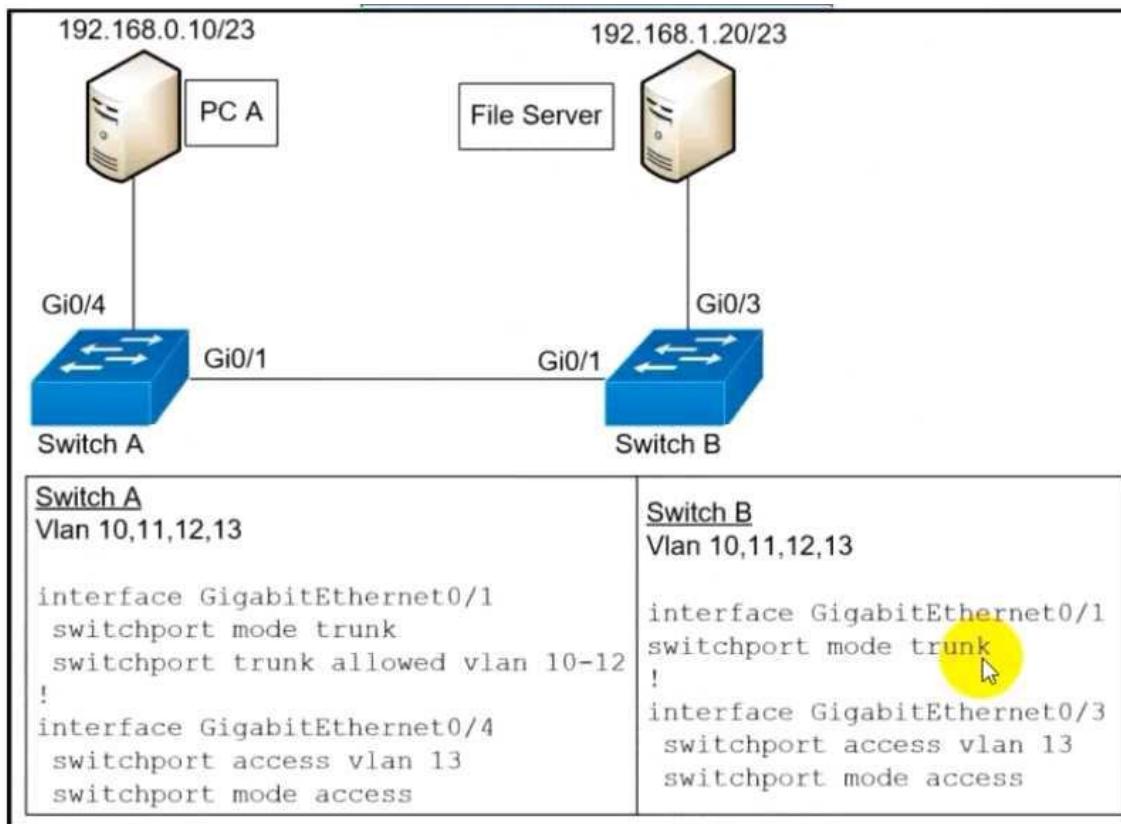
- A. DNS server pings the destination to verify that it is available
- B. serves requests over destination port 53
- C. DNS server forwards the client to an alternate IP address when the primary IP is down
- D. responds to a request for IP address to domain name resolution to the DNS server

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

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: C

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

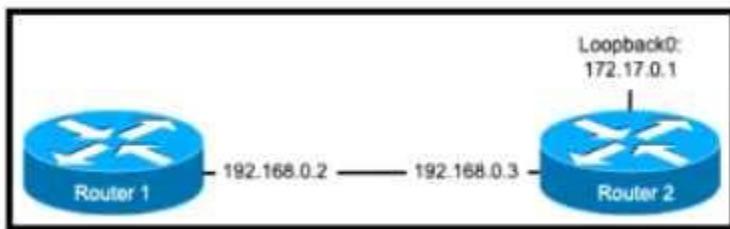
When DHCP is configured on a router, which command must be entered so the default gateway is automatically distributed?

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

Answer: A

QUESTION 409

Refer to the exhibit. The `nip 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

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 communicates 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

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**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

QUESTION 421

What is a DHCP client?

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

Answer: A

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

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

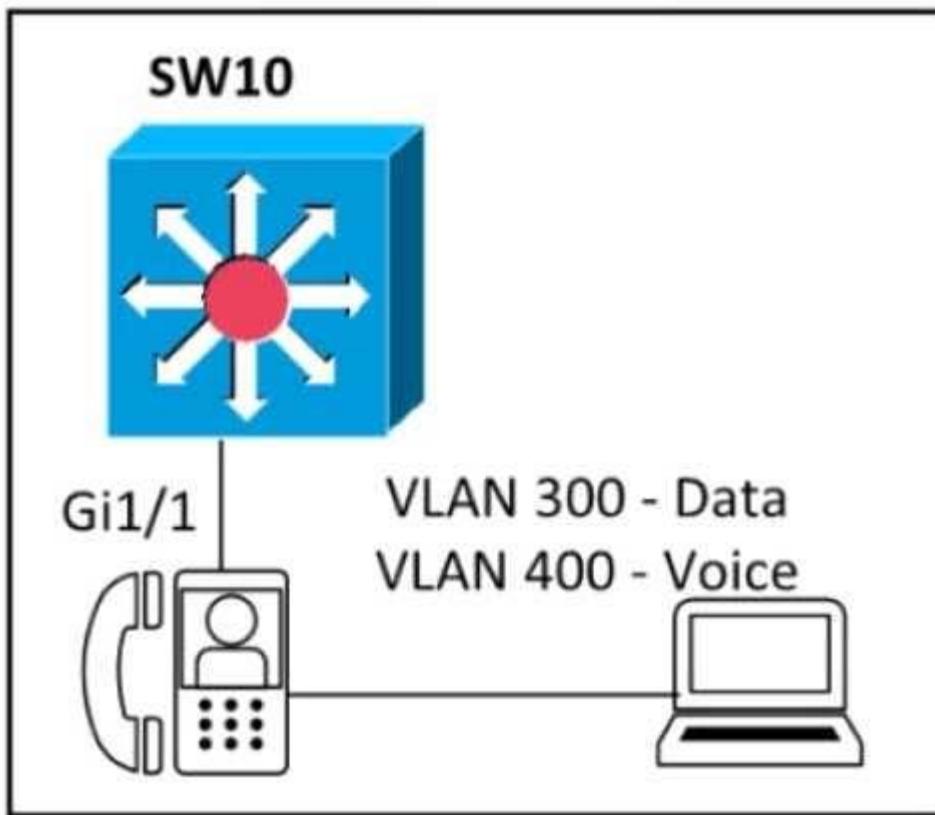
Which protocol does an access point use to draw power from a connected switch?

- A. Internet Group Management Protocol
- B. Adaptive Wireless Path Protocol
- C. Cisco Discovery Protocol
- D. Neighbor Discovery Protocol

Answer: C

QUESTION 425

Refer to the exhibit. An engineer must configure GigabitEthernet1/1 to accommodate voice and data traffic. Which configuration accomplishes this task?



```
interface gigabitethernet1/1
switchport mode access
switchport access vlan 300
switchport voice vlan 400
```

```
interface gigabitethernet1/1
switchport mode trunk
switchport trunk vlan 300
switchport voice vlan 400
```

```
interface gigabitethernet1/1
switchport mode trunk
switchport trunk vlan 300
switchport trunk vlan 400
```

```
interface gigabitethernet1/1
switchport mode access
switchport voice vlan 300
switchport access vlan 400
```

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

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**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**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**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

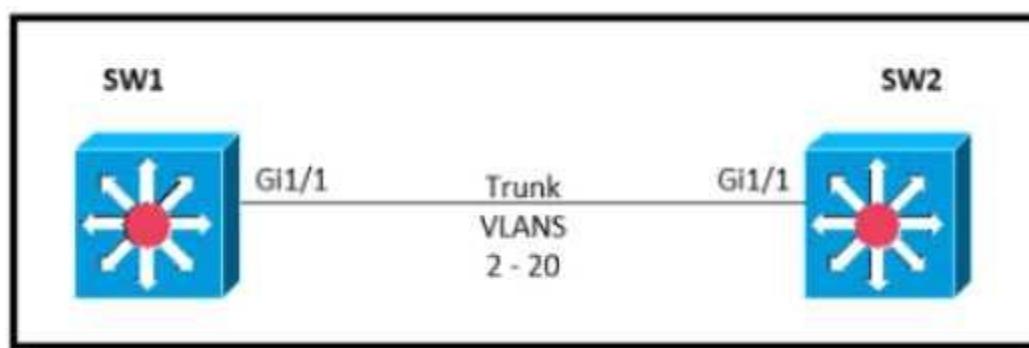
Answer: BC**Explanation:**

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?



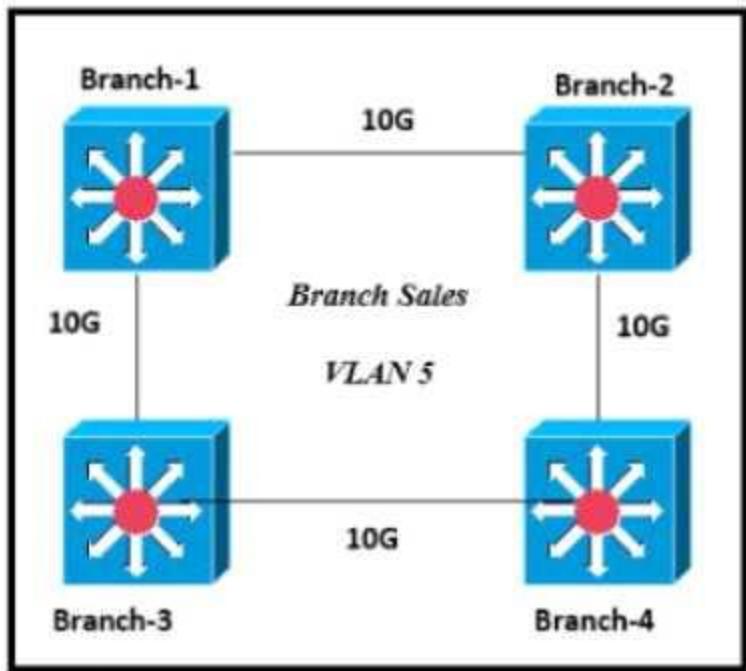
- A. switchport mode trunk
- B. switchport mode dot1-tunnel
- C. switchport mode dynamic auto
- D. switchport mode dynamic desirable

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

QUESTION 437

A network administrator must 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?

```
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate ec keysiz 2048
```

```
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate rsa modulus 1024
```

```
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate ec keysiz 1024
```

```
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key encrypt rsa name myKey
```

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

Answer: B

QUESTION 438

When deploying syslog, which severity level logs informational message?

- A. 0
- B. 2
- C. 4
- D. 6

Answer: D

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

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

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

- A. enable the PortFast feature on ports
- B. implement port-based authentication
- C. configure static ARP entries
- D. configure ports to a fixed speed

- E. shut down unused ports

Answer: BE

QUESTION 445

What occurs when overlapping Wi-Fi channels are implemented?

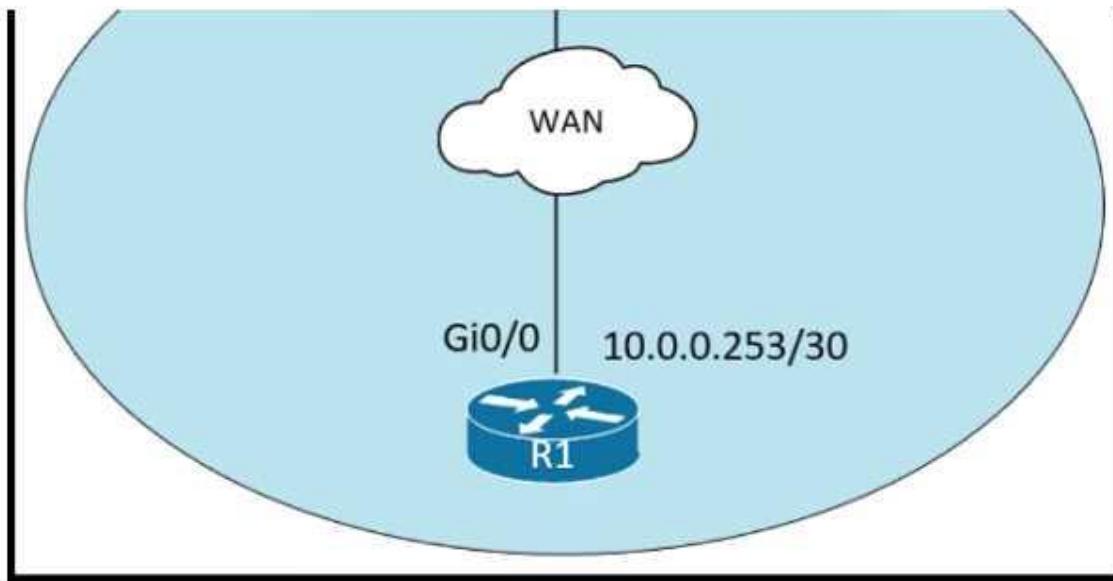
- A. The wireless network becomes vulnerable to unauthorized access.
- B. Wireless devices are unable to distinguish between different SSIDs
- C. Users experience poor wireless network performance.
- D. Network communications are open to eavesdropping.

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?

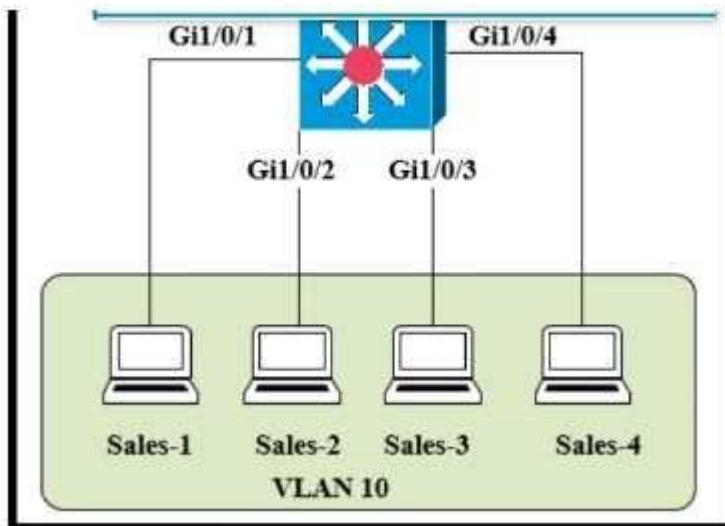


- A. interface gi0/1
no cdp enable
- B. interface gi0/1
clear cdp table
- C. interface gi0/0
no cdp advertise-v2
- D. interface gi0/0
no cdp run

Answer: A

QUESTION 447

Refer to the exhibit. The entire contents of 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	3910.4161.9bb7	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 frame 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?

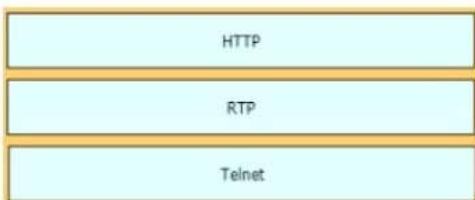
- A. Reassociation Request
- B. Probe Request
- C. Authentication Request
- D. Association Request

Answer: A

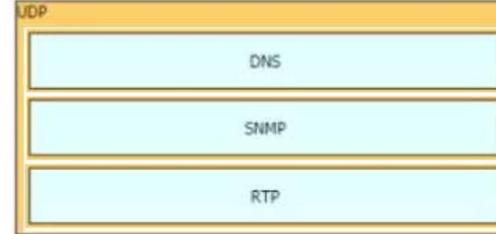
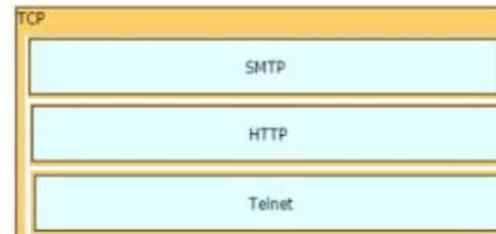
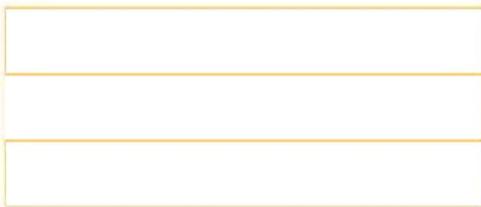
QUESTION 449

Drag and Drop Question

Drag and drop the TCP/IP protocols from the left onto the 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 P 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

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

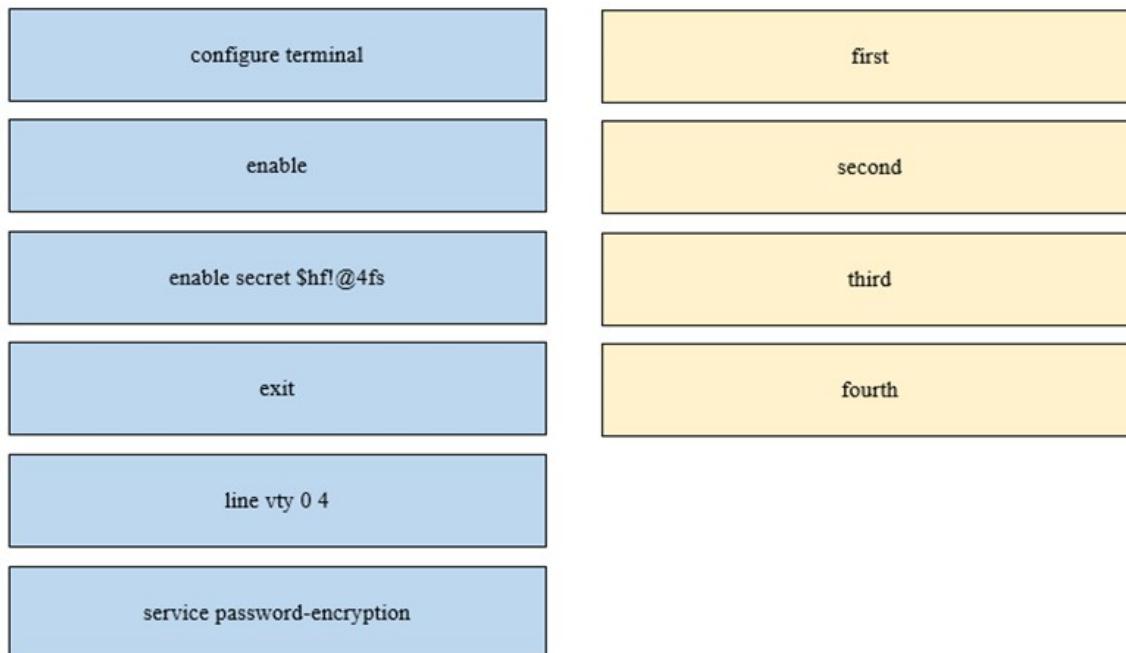
D. WRED

Answer: C

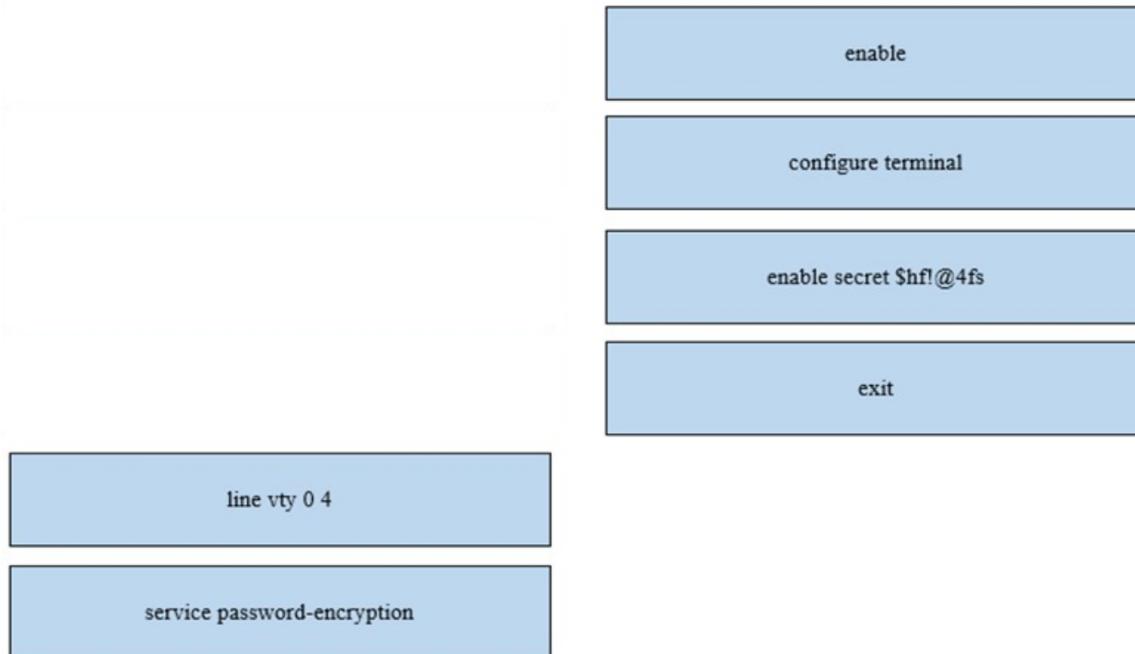
QUESTION 470

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

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. If R1 receives a packet destined to 172.161.1, to which IP address does it send the packet?

```
R1#show ip route
#output suppressed

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C    172.16.1.128/25 is directly connected, GigabitEthernet1/1/0
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
C    172.16.16.1 is directly connected, Loopback1
      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
0*E2  0.0.0.0/0 [110/1] via 192.168.14.4, 00:00:10, FastEthernet1/0
```

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

Answer: C

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?

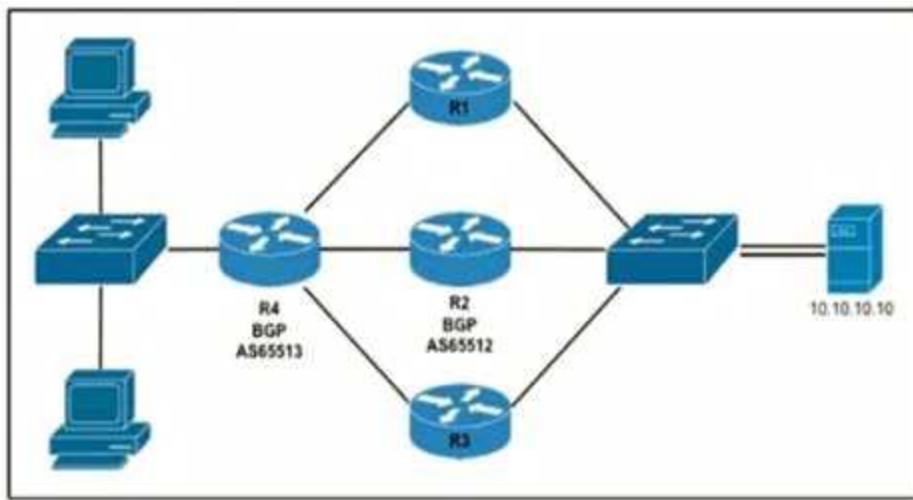
- A. configure port in the native VLAN
- B. configure ports in a black hole VLAN
- C. configure in a nondefault native VLAN
- D. configure ports as access ports

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

QUESTION 478

Which HTTP status code is returned after a successful REST API request?

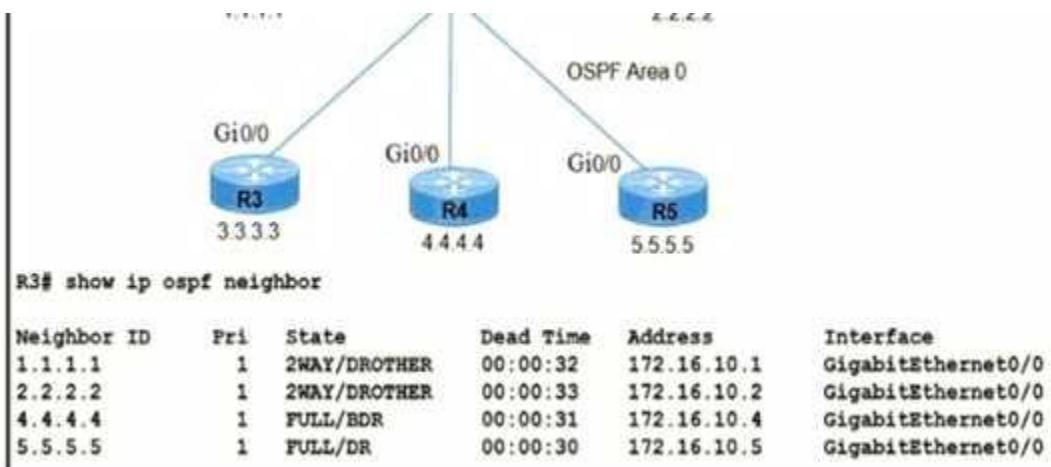
- A. 200
- B. 301
- C. 404
- D. 500

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. R2(config)#interface gi0/0
R2(config-if)#ip ospf priority 259

R3(config)#interface gi0/0
R3(config-if)#ip ospf priority 256
- C. R5(config)#interface gi0/0
R5(config-if)#ip ospf priority 120

R4(config)#interface gi0/0
R4(config-if)#ip ospf priority 110
- D. R3(config)#interface gi0/0
R3(config-if)#ip ospf priority 255

R2(config)#interface gi0/0
R2(config-if)#ip ospf priority 240

Answer: D

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

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

QUESTION 484

Which virtual MAC address is used by VRRP group 1?

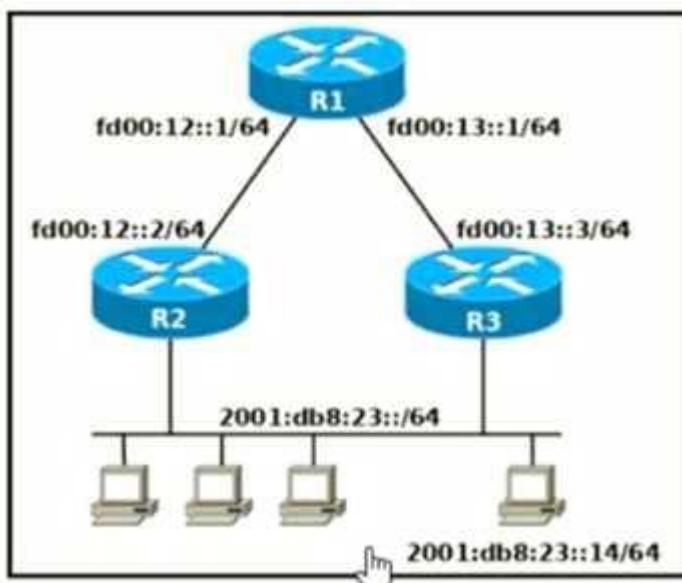
- A. 0050.0c05.ad81
- B. 0007.c061.bc01
- C. 0000.5E00.0101
- D. 0500.3976.6401

Answer: C

QUESTION 485

Refer to the exhibit. Which two commands, when configured on router R1, fulfill these requirements? (Choose two.)

- Packets towards the entire network 2001:db8:2::/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
- E. Ipv6 route 2001:db8:23::14/64 fd00:12::2 200

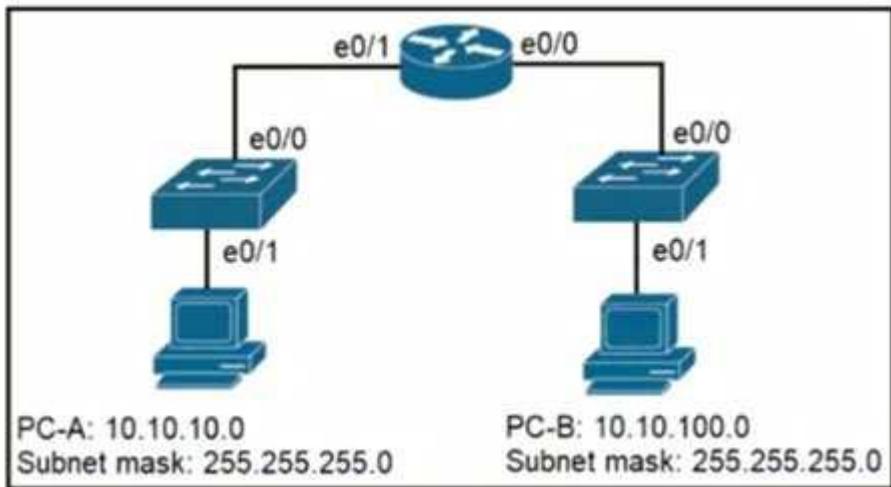
Answer: BD

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

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

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

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

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

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/switc...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. DHCPDISCOVER
- D. DHCPOFFER

Answer: A

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	1
reduces the administrative burden for onboarding end users	2
associates hostnames to IP addresses	3
maintains an address pool	4
assigns IP addresses to local hosts for a configurable lease time	
offers domain name server configuration	
uses authoritative servers for record keeping	

Answer:

maintains an address pool
provides local control for network segments using a client-server scheme
associates hostnames to IP addresses
reduces the administrative burden for onboarding end users
assigns IP addresses to local hosts for a configurable lease time
offers domain name server configuration
uses authoritative servers for record keeping

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_DC3978-87297
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

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

QUESTION 506

Drag and Drop Question

Drag and drop the DNS lookup components from the left onto the functions on the right.

Answer Area

cache	local database of address mappings that improves name-resolution performance
DNS	service that maps hostnames to IP addresses
domain	disable DNS services on a Cisco device
name resolver	in response to client requests, queries a name server for IP address information
no ip domain lookup	component of a URL that indicates the location or organization type, such as .com or .edu

Answer:

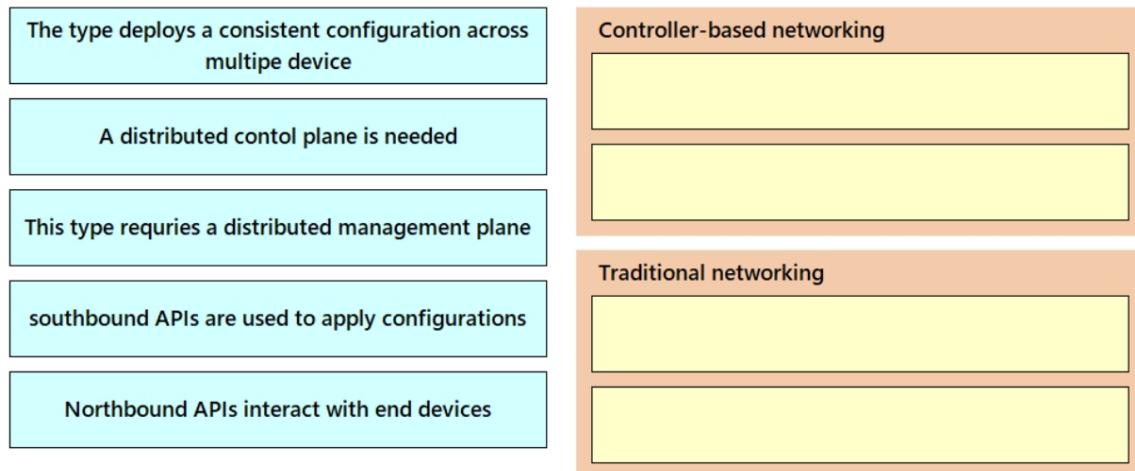
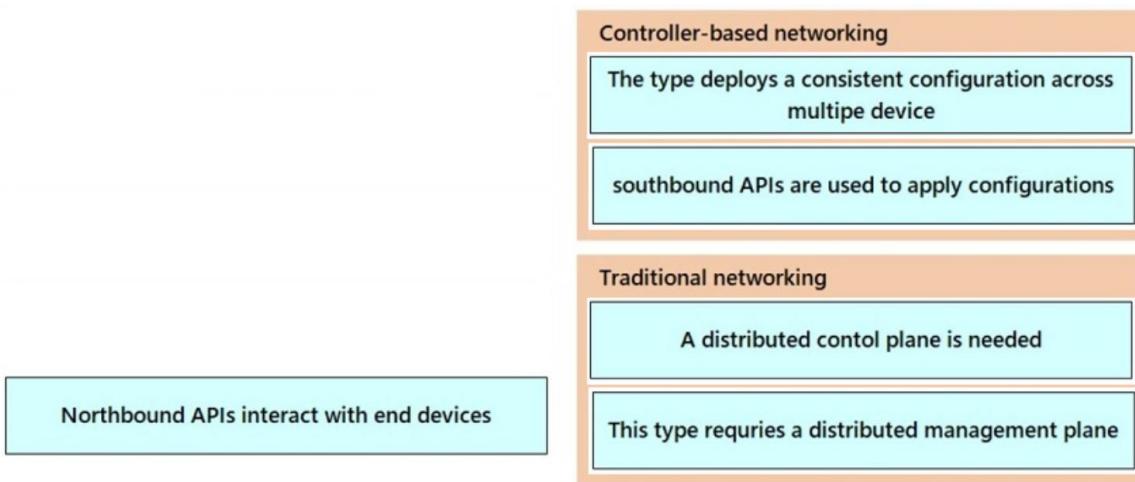
Answer Area

cache
DNS
no ip domain lookup
name resolver
domain

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.

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

On a SND network the control plane is centralized on the 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.

attached to a single subnet
addresses with prefix FC00::/7
configured only once per interface
addressing for exclusive use internally without Internet routing

Link-Local Address
Unique Local Address

Answer:

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.”

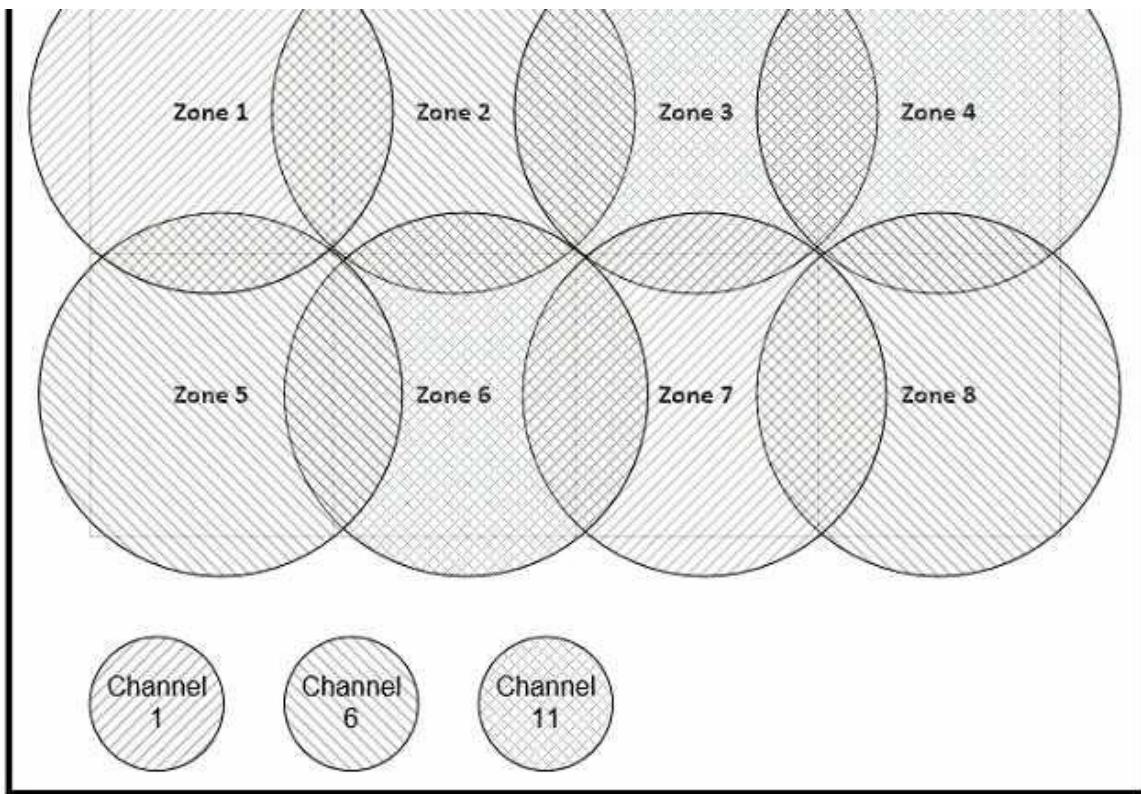
“There can be only one link-local address per interface.”

“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: D

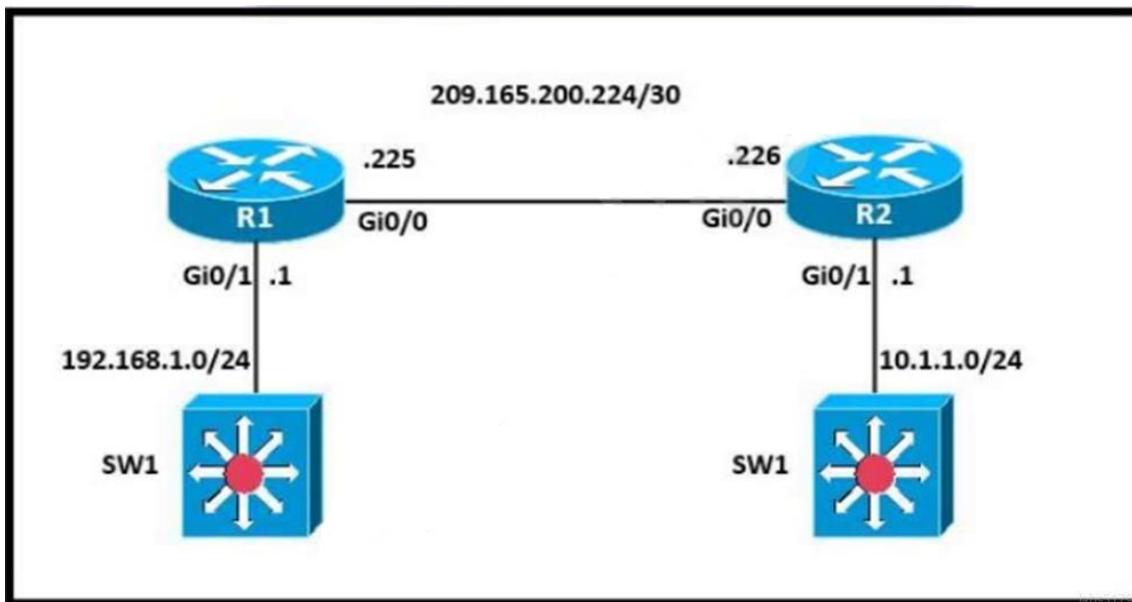
QUESTION 510

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?

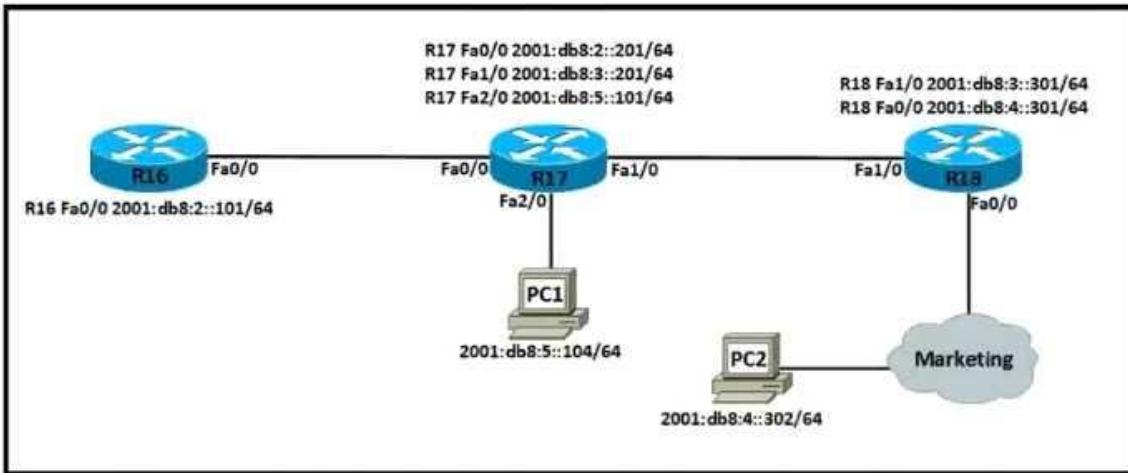


- A. R1
ip route 192.168.1.1 255.255.255.0 GigabitEthernet0/1
R2
ip route 10.1.1.1 255.255.255.0 GigabitEthernet0/1
- B. R1
ip route 192.168.1.0 255.255.255.0 GigabitEthernet0/0
R2
ip route 10.1.1.1 255.255.255.0 GigabitEthernet0/0
- C. R1
ip route 0.0.0.0 0.0.0.0 209.165.200.225
R2
ip route 0.0.0.0 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: A

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:DB8:5::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

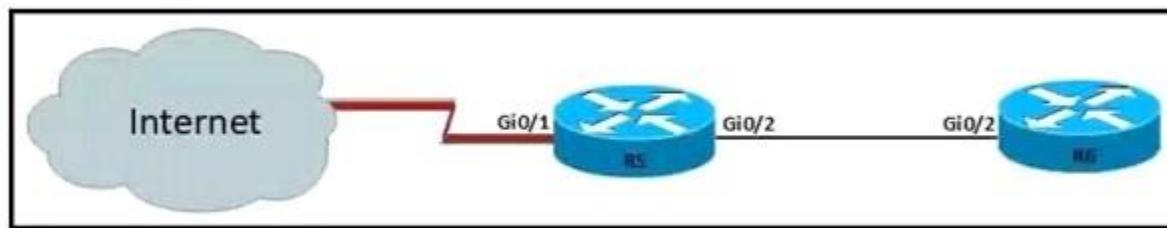
Answer: C

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?

- 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
- 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
- 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
- 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

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

Answer: A

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

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
sniffer mode	receive only mode which acts as a dedicated sensor for RFID and IDS
	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

QUESTION 519

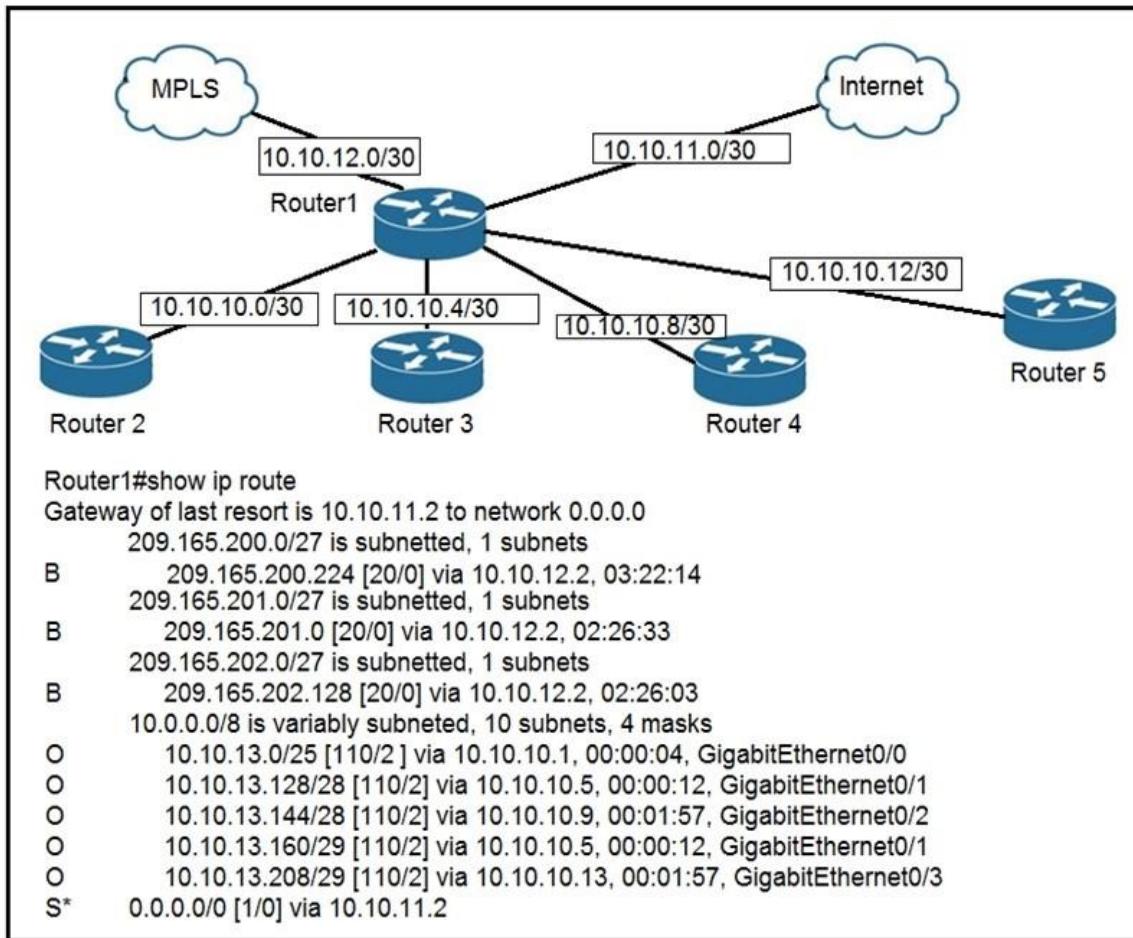
Which plane is centralized by an SDN controller?

- 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 Routed 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

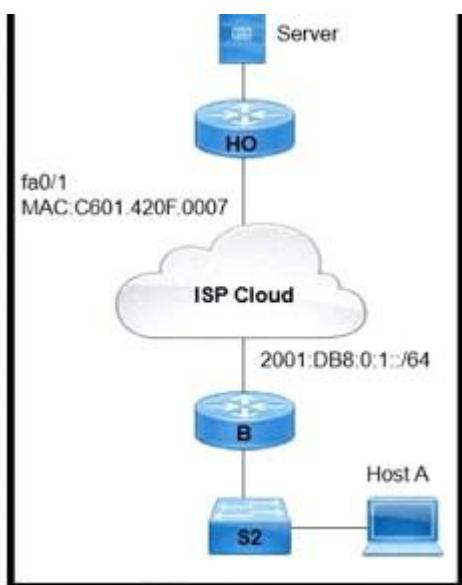
- switchport voice vlan 30
- C. switchport mode access
switchport access vlan 20
switchport voice vlan 30
- D. switchport mode trunk
switchport access vlan 20
switchport voice vlan 30

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. iov6 address 2001:DB8:0:1:FE80:C601:420F:7/64

Answer: B

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: A

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

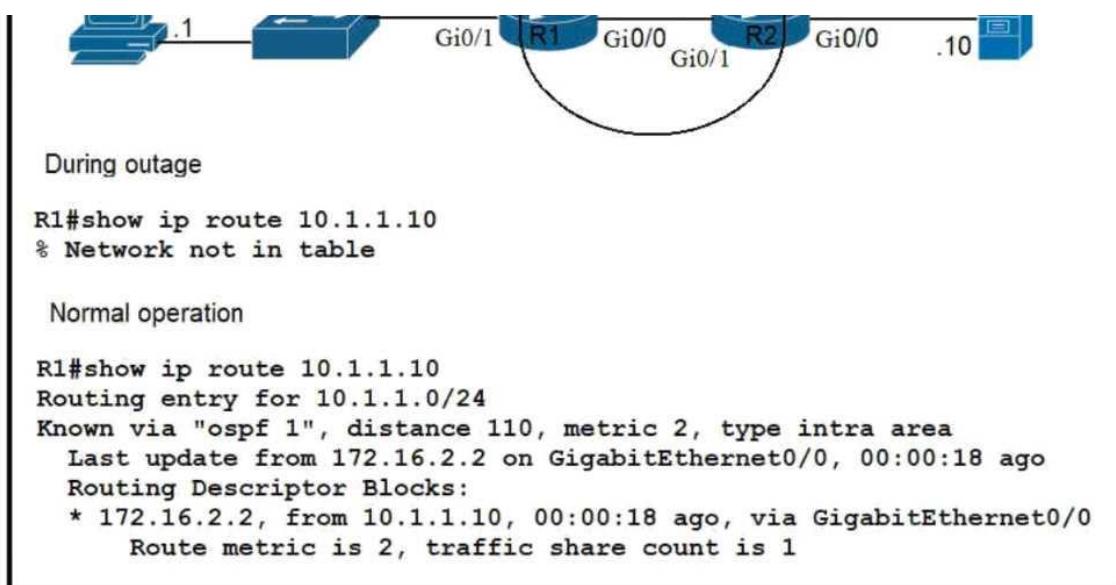
Which QoS per-hop behavior changes the value of the ToS field in the IPv4 packet header?

- 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

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?

Fast Transition	Disable
Protected Management Frame	
PMF	Disabled
WPA+WPA2 Parameters	
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 <input type="checkbox"/> GCMP256
OSEN Policy	<input type="checkbox"/>
Authentication Key Management 19	
802.1X	<input type="checkbox"/> Enable
CCKM	<input type="checkbox"/> Enable
PSK	<input checked="" type="checkbox"/> Enable
FT 802.1X	<input type="checkbox"/> Enable
FT PSK	<input type="checkbox"/> Enable

- A. Select the WPA Policy option with the CCKM option.
- B. Disable AES encryption.

- C. Enable Fast Transition and select the FT 802.1x option.
- D. 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?

```
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

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?

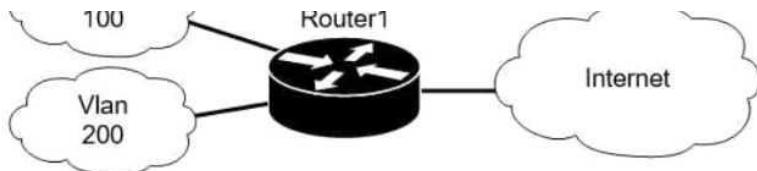
```
Switch2# show lldp
Global LLDP Information
  Status: ACTIVE
  LLDP advertisements are sent every 30 seconds
  LLDP hold time advertised is 120 seconds
  LLDP interface reinitialization delay is 2 seconds
```

- 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

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-nacl)#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 INSIDF RANGFS ACL

Answer: B**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.

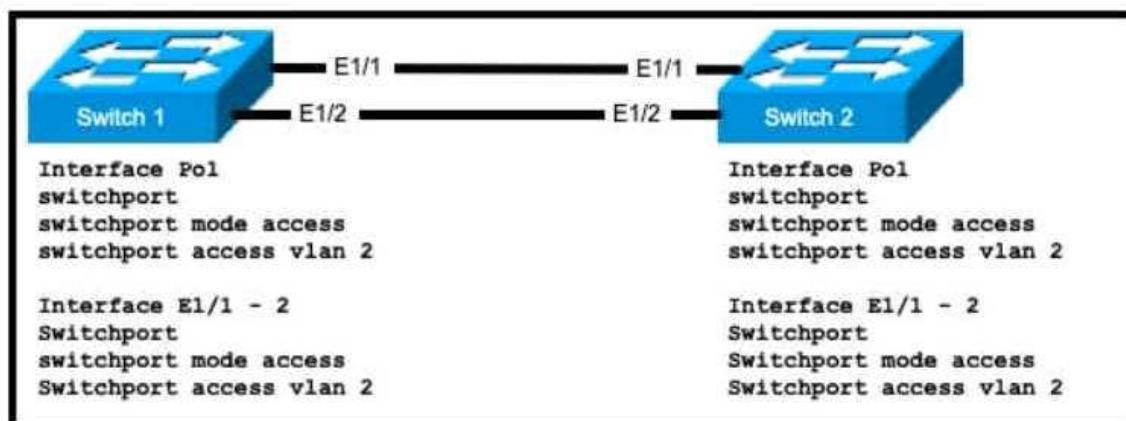
Which interface is used to forward traffic with a destination IP of 10.1.1.19?

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**

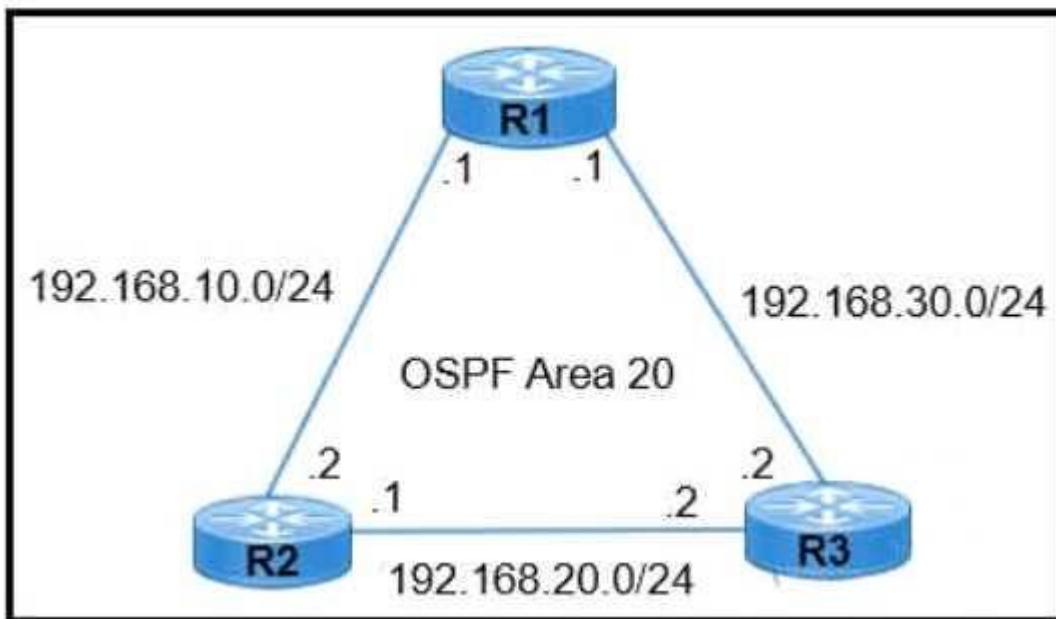
Refer to the exhibit. An engineer is configuring an EtherChannel using LACP between Switches 1 and 2. Which configuration must be applied so that only Switch 1 sends LACP initiation packets?



- A. Switch1(config-if)#channel-group 1 mode on
Swrtch2(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: D**QUESTION 538**

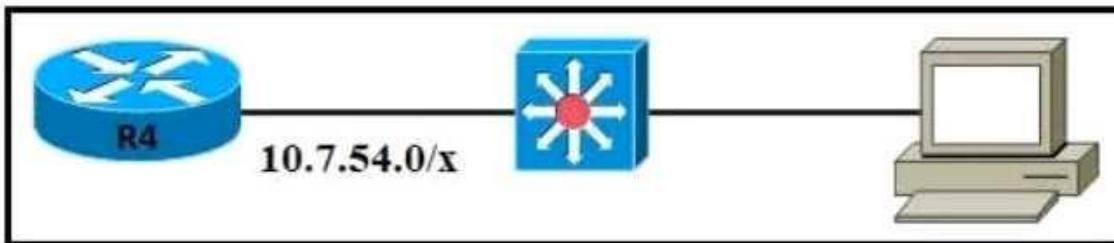
What is the difference between IPv6 unicast and anycast addressing?

- 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 supernet to accommodate the

requirement for 380 users on a subnet. The requirement already considers 30% future growth. Which configuration verifies the IP subnet on router R4?

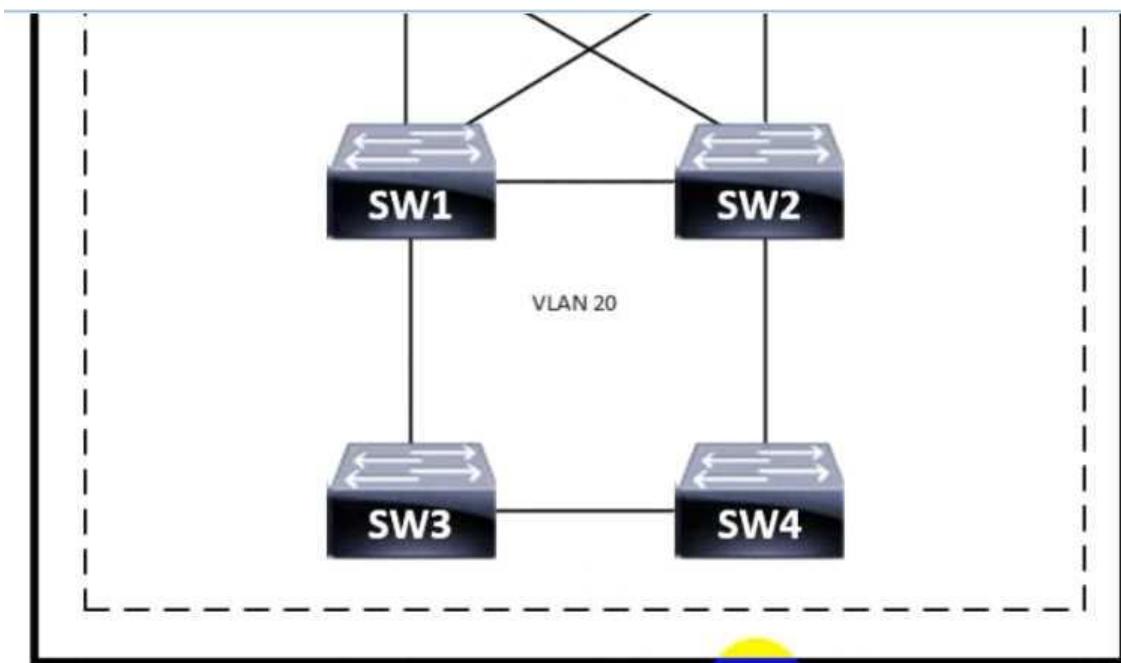


- A. Subnet: 10.7.54.0
Subnet mask: 255.255.254.0
Broadcast address: 10.7.54.255
Usable IP address range: 10.7.54.1 - 10.7.55.254
- B. Subnet: 10.7.54.0
Subnet mask: 255.255.254.0
Broadcast address: 10.7.55.255
Usable IP address range: 10.7.54.1 - 10.7.55.254
- C. Subnet: 10.7.54.0
Subnet mask: 255.255.128.0
Broadcast address: 10.7.55.255
Usable IP address range: 10.7.54.1 - 10.7.55.254
- D. 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

Answer: B

QUESTION 540

Refer to the exhibit. Which switch becomes the root of a spanning tree for VLAN 20 if all links are of equal speed?



SW1 = 24596 0018.184e.3c00

SW2 = 28692 004a.14e5.4077

SW3 = 32788 0022.55cf.dd00

SW4 = 64000 0041.454d.407f

- 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

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

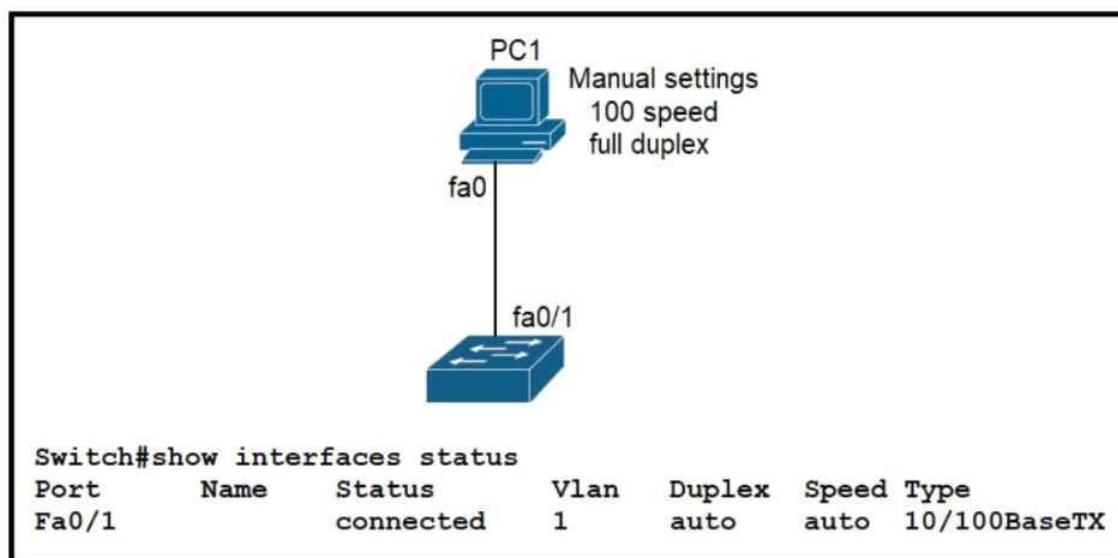
How does Rapid PVST+ create a fast loop-free network topology?

- 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

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

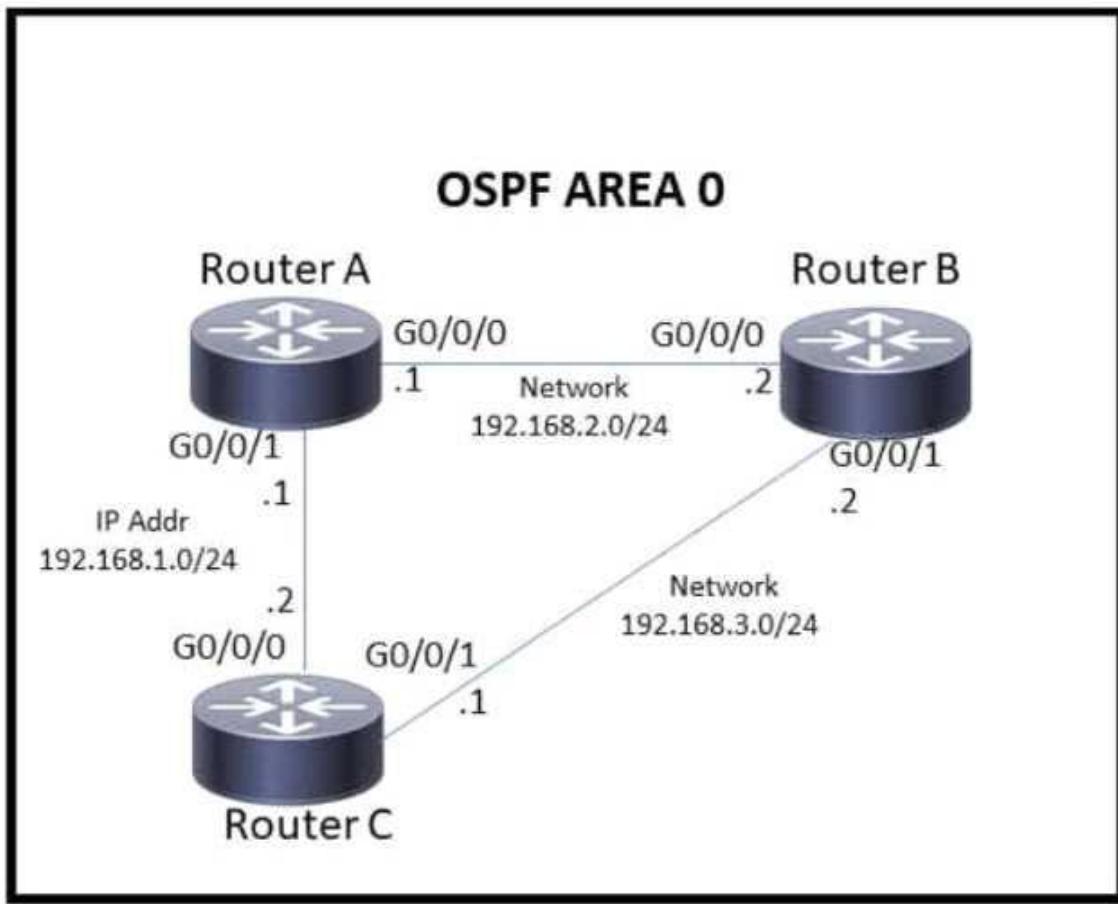
What is an expected outcome when network management automation is deployed?

- 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?



- 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

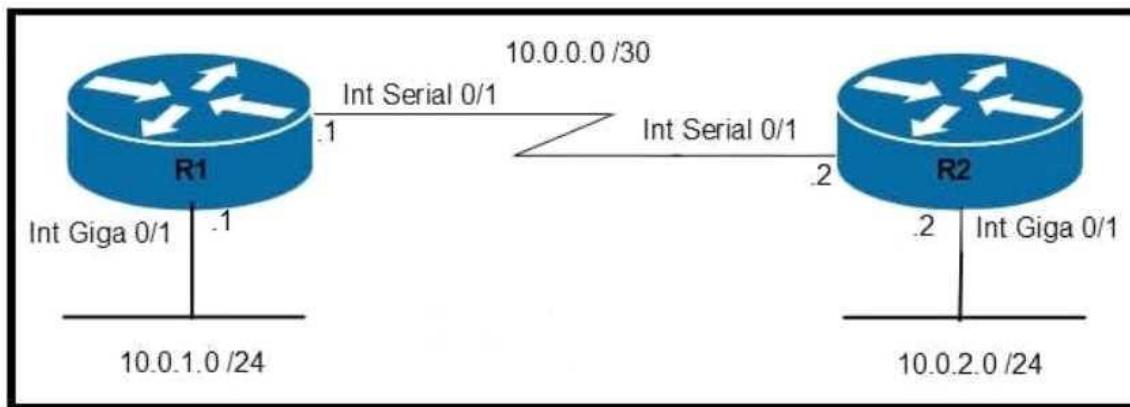
What are two benefits of FHRPs? (Choose two.)

- 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

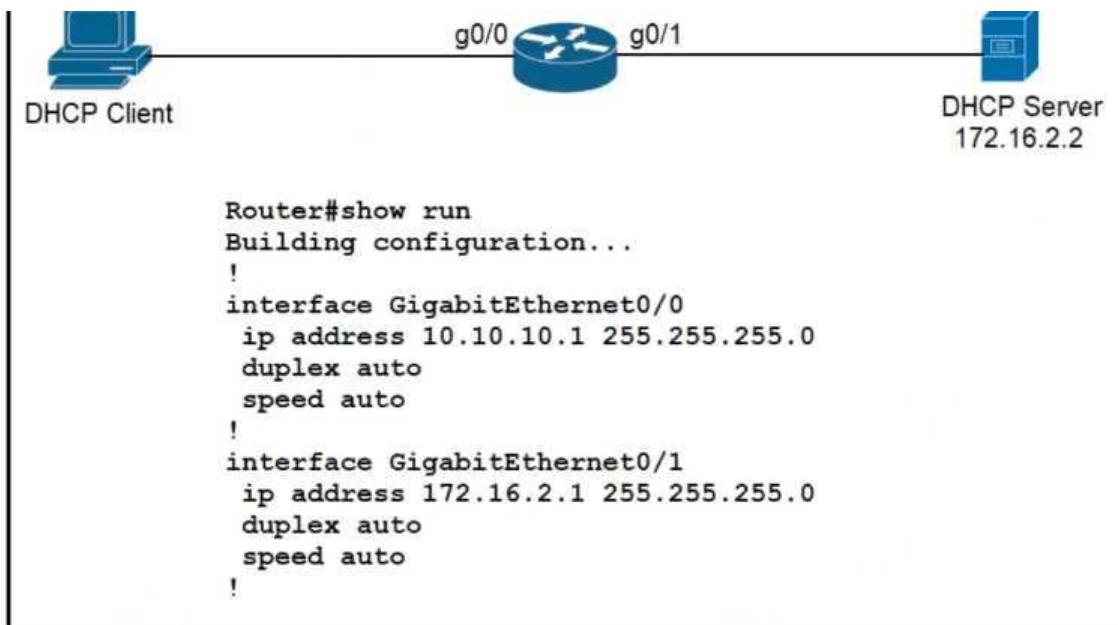
What causes a port to be placed in the err-disabled state?

- A. nothing plugged into the port
- B. link flapping
- C. shutdown command issued on the port
- D. latency

Answer: B

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

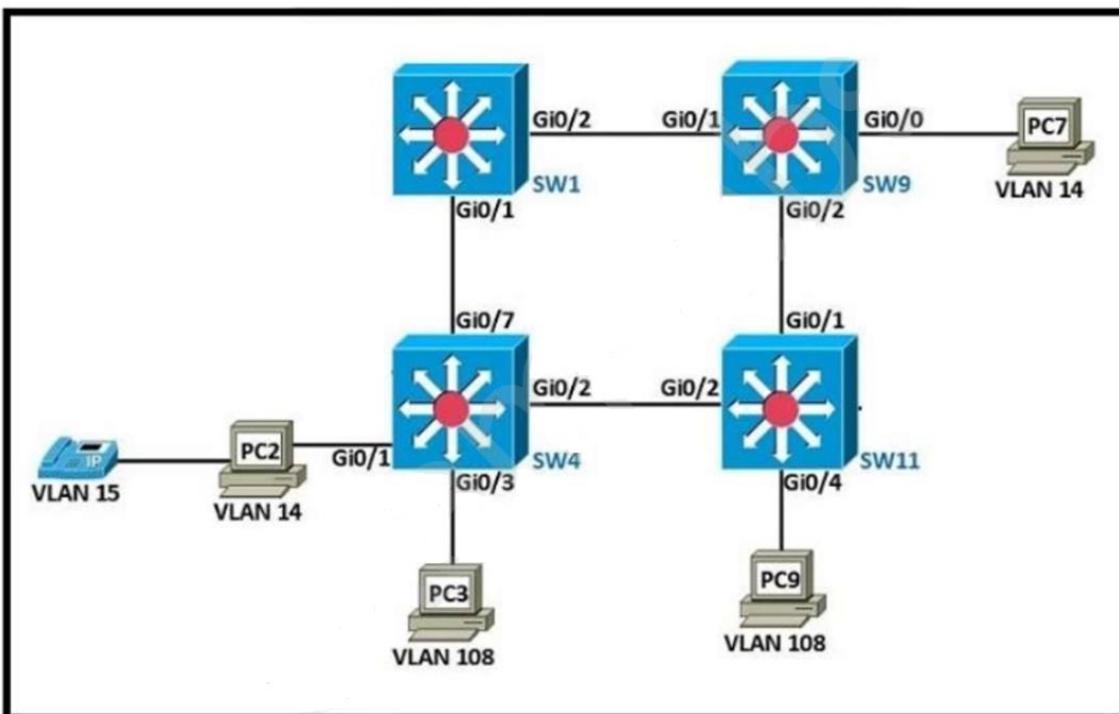
Answer: C

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.

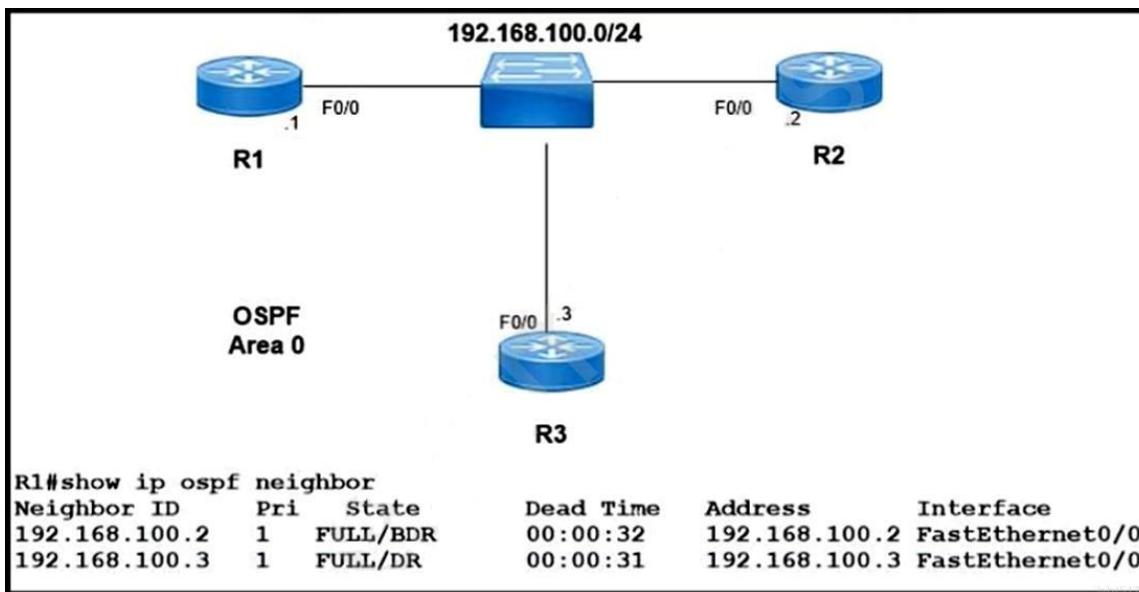
```
ntp authenticate
ntp authentication-key 2 md5 CISCO123
ntp source Loopback0
ntp access-group server-only 10
ntp master 2
!
access-list 10 permit 209.165.200.225
```
- D.

```
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

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

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: BD

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

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: B

QUESTION 563

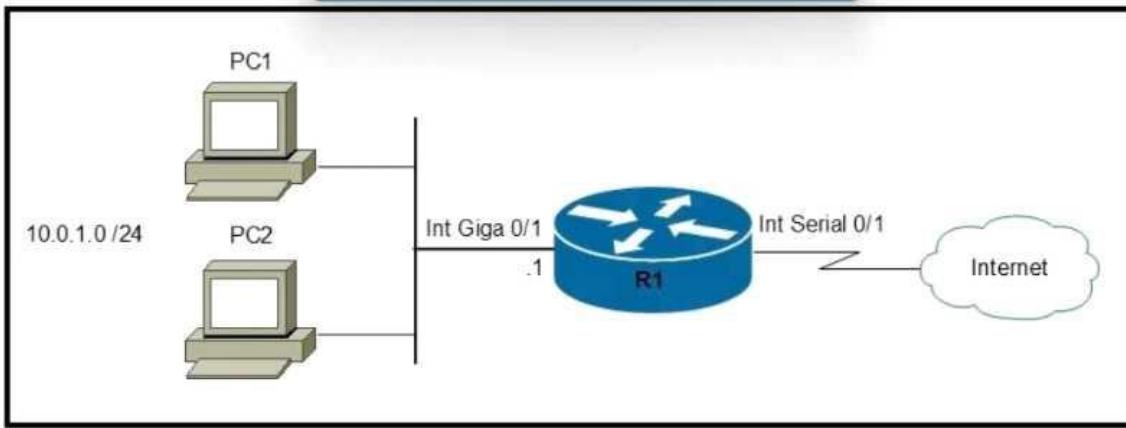
Which interface mode must be configured to connect the lightweight APs in a centralized architecture?

- A. WLAN dynamic
- B. management
- C. trunk
- D. access

Answer: D

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. SYIM 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.

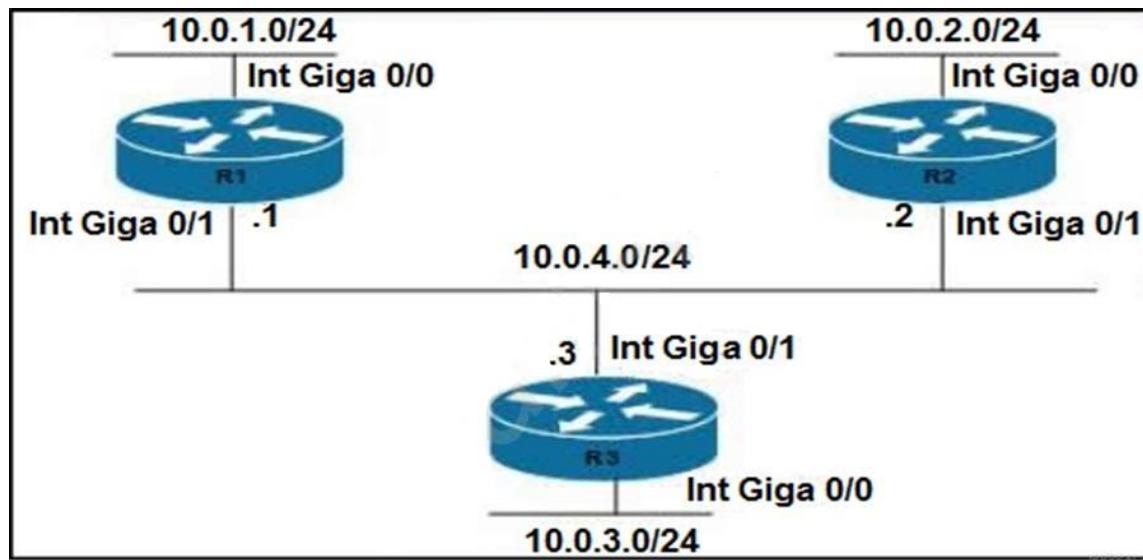
- D. Set the router B OSPF ID to the same value as its IP address

Answer: B

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?

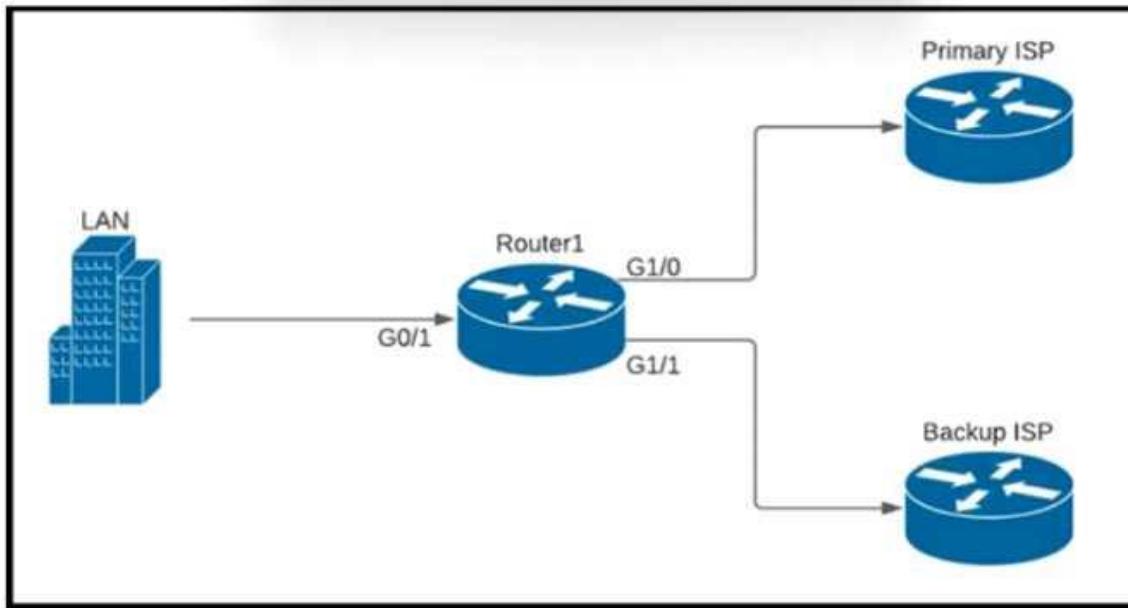


- A. R3(config)#interface Gig0/1
R3(config-if)#ip ospf priority 100
- B. R3(config)#interface Gig0/0
R3(config-if)#ip ospf priority 100
- C. R3(config)#interface Gig0/0
R3(config-if)#ip ospf priority 1
- D. R3(config)#interface Gig0/1
R3(config-if)#ip ospf priority 0

Answer: A

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 GigabitEthernet0/0
- 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

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?

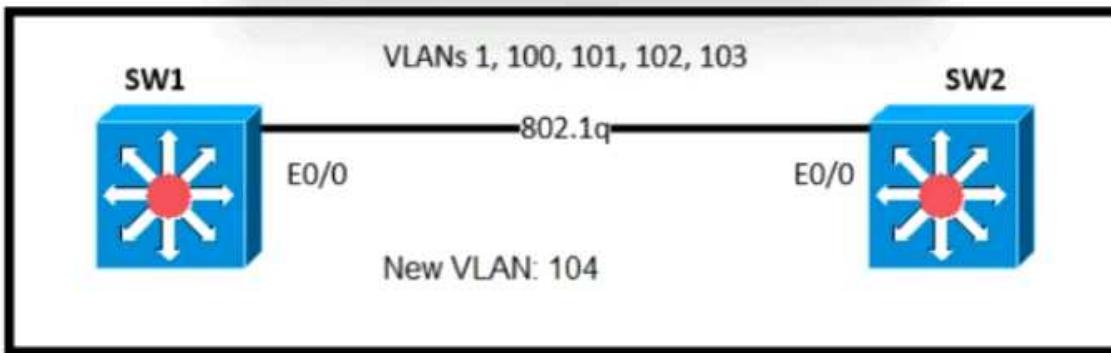
- A. configuring a password for the console port
- B. backing up syslogs at a remote location
- C. configuring enable passwords on network devices
- D. setting up IP cameras to monitor key infrastructure

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

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: B

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: BD

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]

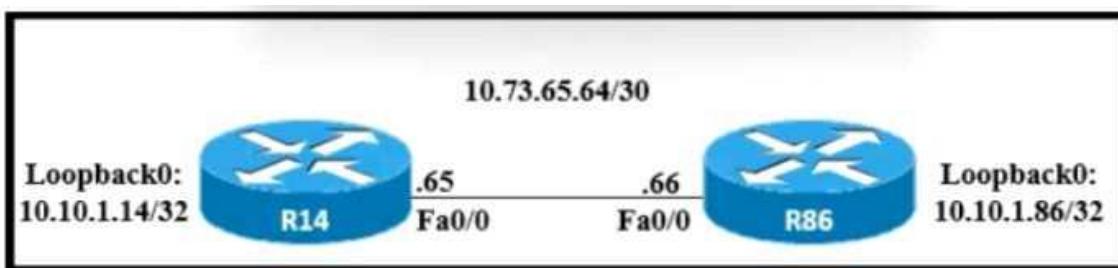
Group	Port-channel	Protocol	Ports	
10	Po10 (SU)	LACP	Gi0/0 (P)	Gi0/1 (P)
20	Po20 (SU)	LACP	Gi0/2 (P)	Gi0/3 (P)

- 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?

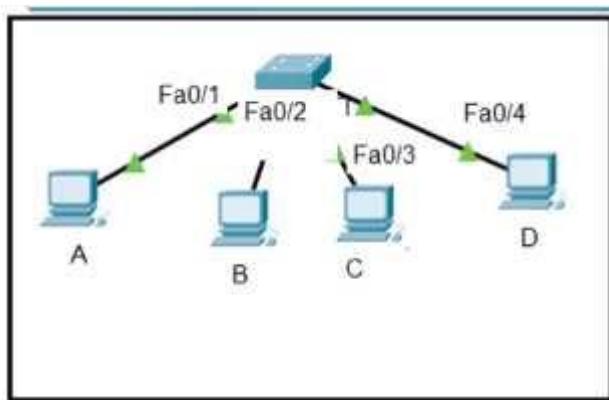
- A. interface vlan 2000
ip6 address ffc0:0000:aaaa::1234:2343/64
- B. interface vlan 2000
ip6 address fc00:0000:aaaa:a15d:1234:2343:8aca/64
- C. interface vlan 2000
ip6 address fe80:0000:aaaa::1234:2343/64

- D. interface vlan 2000
 ipv6 address fd00::1234:2343/64

Answer: B

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	0041.45d7.c451	DYNAMIC	Fa0/3

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?

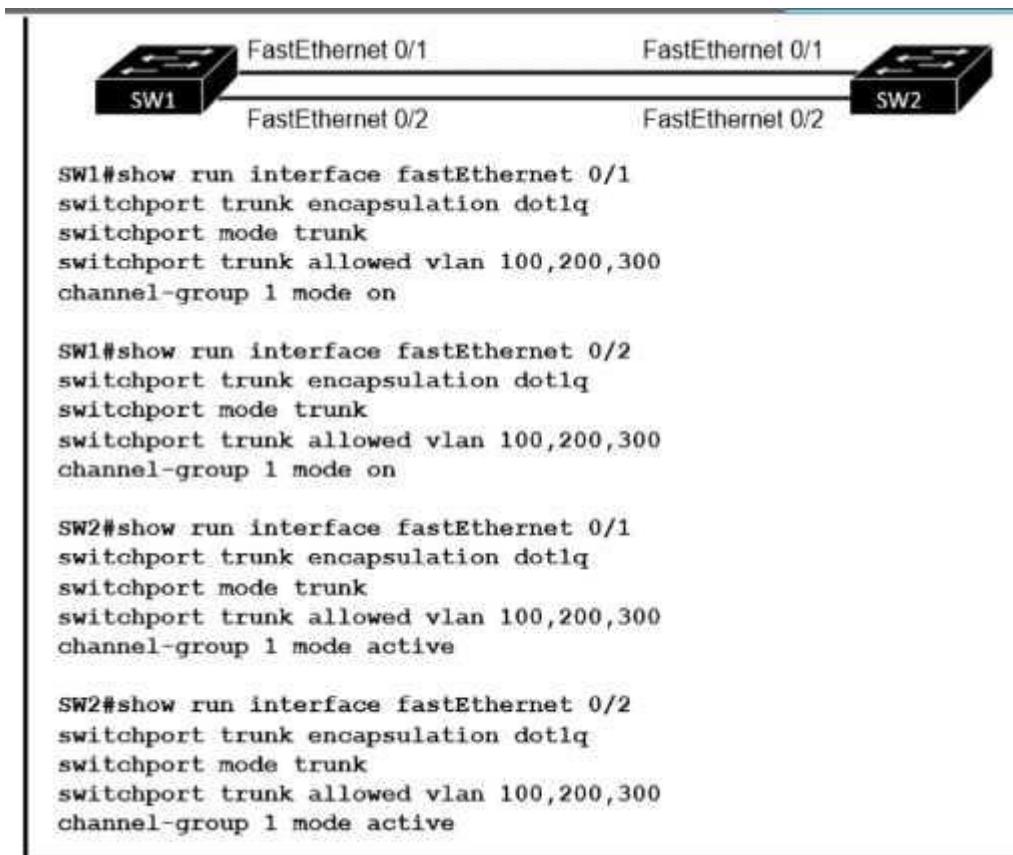
- A. multicast replication at the hardware level
- B. fragmenting and reassembling packets
- C. making routing decisions
- D. forwarding packets

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.

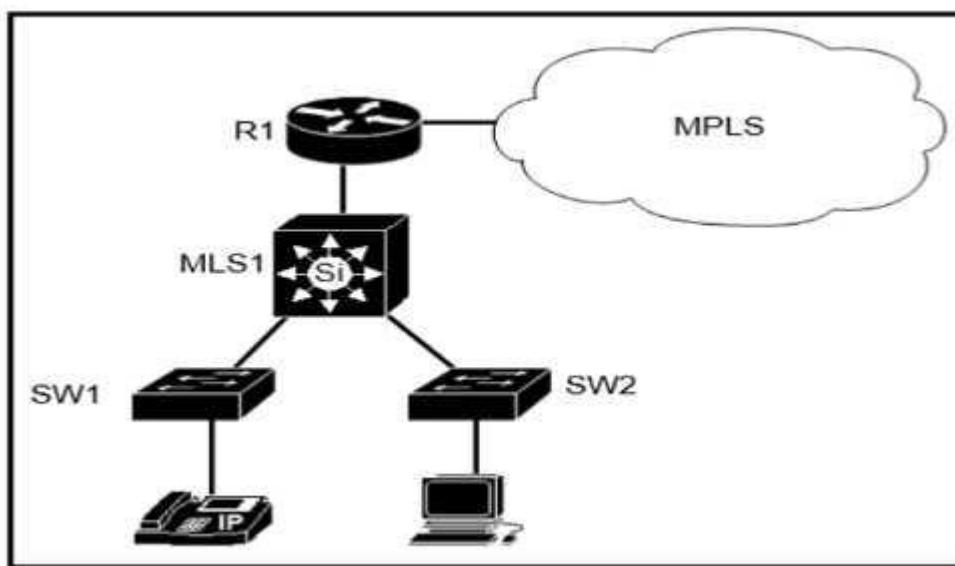
The client has requested that the device IP address be reachable only from the internal network. Which type of IPv6 address must the engineer assign?

- A. unique local address
- B. link-local address
- C. aggregatable global address
- D. IPv4-compatible IPv6 address

Answer: B

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: C

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?

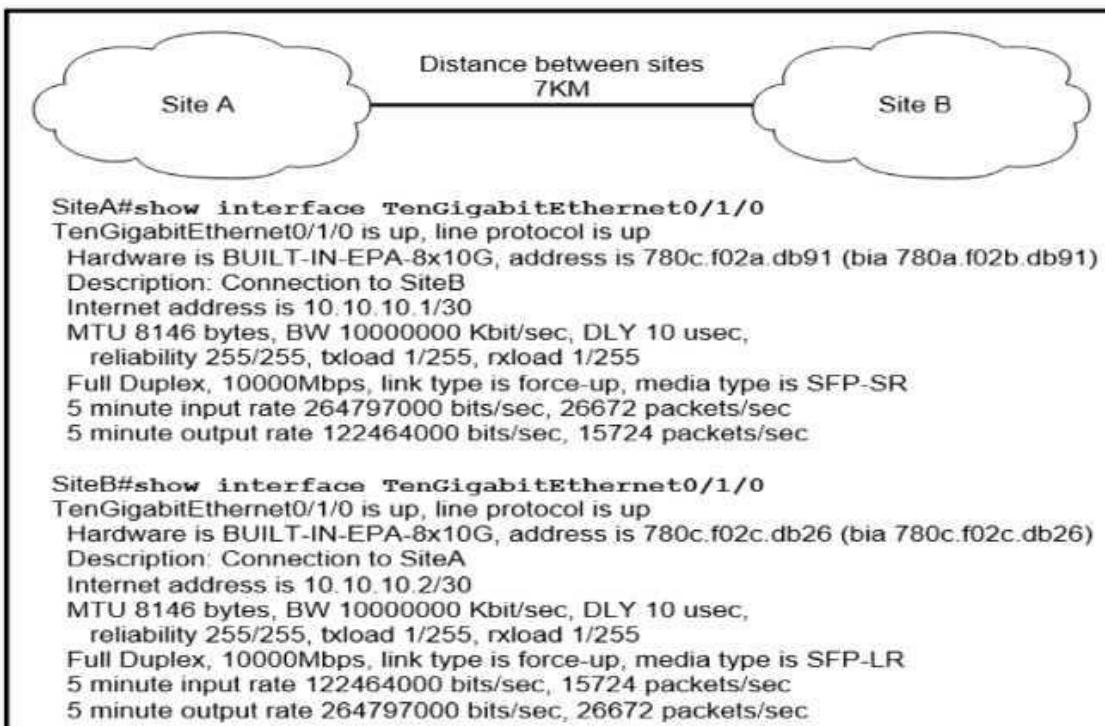
```
TenGigabitEthernet0/0/0 is up, line protocol is up
  Hardware is BUILT-IN-2T+6X1GE, address is 74a0.2f7a.0123 (bia 74a0.2f7a.0123)
  Description: Uplink
  Internet address is 10.1.1.1/24
  MTU 1500 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation 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?

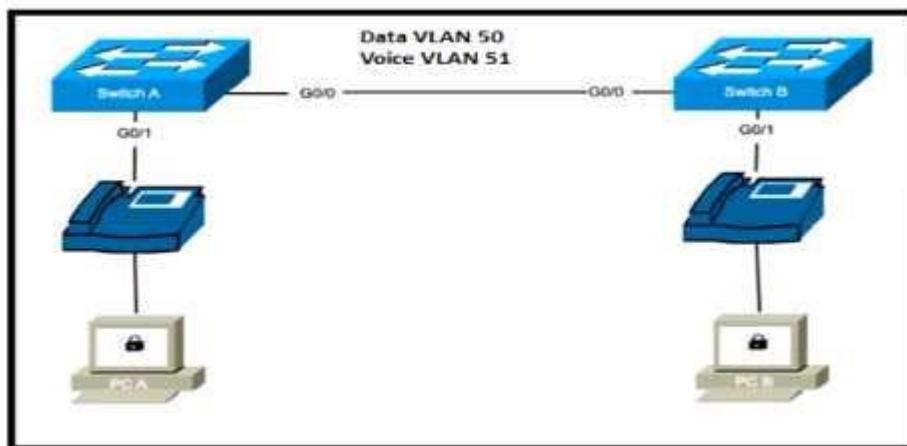


- A. Heavy usage is causing high latency.
- B. An incorrect type of transceiver has been inserted into a device on the link.
- C. physical network errors are being transmitted between the two sites.
- D. The wrong cable type was used to make the connection.

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 access
SwitchA(config-if)#switchport access vlan 50
SwitchA(config-if)#switchport voice vlan untagged
- C. SwitchA(config-if)#switchport mode trunk
SwitchA(config-if)#switchport trunk allowed vlan add 50, 51
SwitchA(config-if)#switchport voice vlan dot1p
- D. SwitchA(config-if)#switchport mode trunk
SwitchA(config-if)#switchport trunk allowed vlan 50, 51
SwitchA(config-if)#mls qos trust cos

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: B

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 100000000
!
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

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 DHCP snooping is enabled
Switch DHCP gleaning is disabled
DHCP snooping is configured on following VLANs:
1
DHCP snooping is operational on following VLANs:
1
DHCP snooping is configured on the following L3 Interfaces:
Insertion of option 82 is disabled
circuit-id default format: vlan-mod-port
remote-id: aabb.cc00.6500 (MAC)
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Verification of giaddr field is enabled
DHCP snooping trust/rate is configured on the following Interfaces:
Interface Trusted Allow option Rate limit (pps)
```

```
Switch#show ip dhcp snooping statistics detail
Packets Processed by DHCP Snooping = 34
Packets Dropped Because
IDB not known = 0
Queue full = 0
Interface is in errdisabled = 0
Rate limit exceeded = 0
Received on untrusted ports = 32
Nonzero giaddr = 0
Source mac not equal to chaddr = 0
No binding entry = 0
Insertion of opt82 fail = 0
Unknown packet = 0
Interface Down = 0
Unknown output interface = 0
Misdirected Packets = 0
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

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?

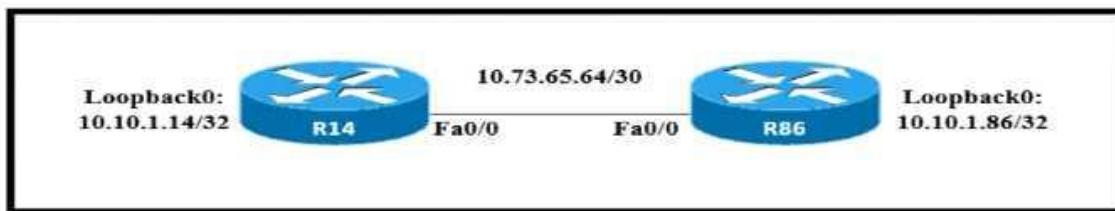
```
R1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      1 - 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?

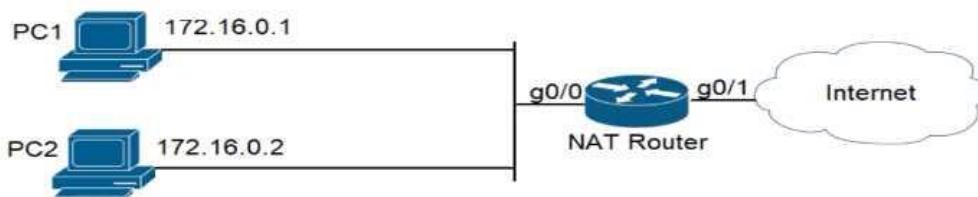
```
R1# show ip route | begin gateway
Gateway of last resort is 209.165.200.254 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 209.165.200.254, Serial0/0/1
    is directly connected, Serial0/0/1
    172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C  172.16.1.0/24 is directly connected, FastEthernet0/0
L  172.16.1.1/32 is directly connected, FastEthernet0/0
R  172.16.2.0/24 [120/2] via 207.165.200.250, 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?



```
interface GigabitEthernet0/0
ip address 172.16.0.5 255.255.255.0
duplex auto
speed auto
!
interface GigabitEthernet0/1
ip address 209.165.202.130 255.255.255.224
duplex auto
speed auto
!
ip nat inside source list 1 interface GigabitEthernet0/1 overload
!
access-list 1 permit 172.16.0.1
access-list 1 permit 172.16.0.2
```

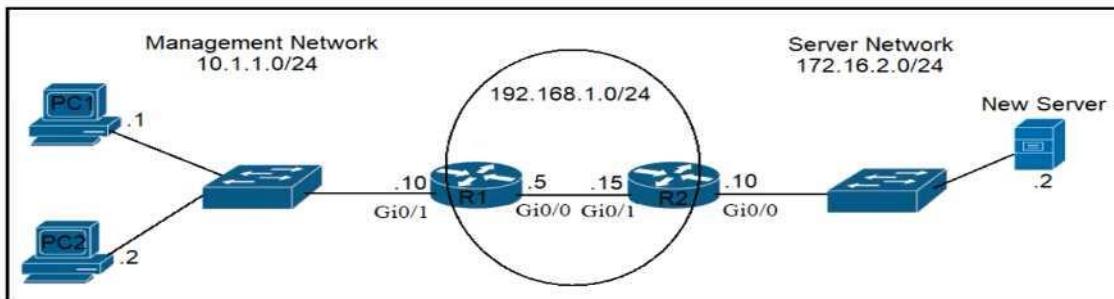
- A. Modify the configured number of the second access list.
- B. Add either the ip nat {inside|outside} command under both interfaces.
- C. Remove the overload keyword from the ip nat inside source command.
- D. Change the ip nat inside source command to use interface GigabitEthernet0/0.

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?

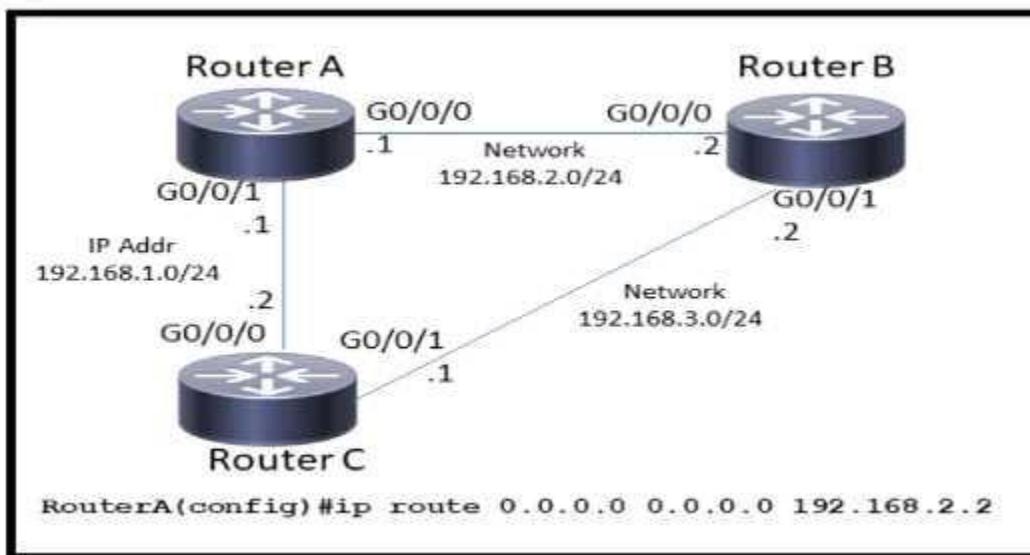


- A. R1(config)#ip route 172.16.2.2 255.255.255.248 gi0/1
- B. R1(config)#ip route 172.16.2.2 255.255.255.255 gi0/0
- C. R1(config)#ip route 172.16.2.0 255.255.255.0 192.168.1.15
- D. R1(config)#ip route 172.16.2.0 255.255.255.0 192.168.1.5

Answer: C

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?

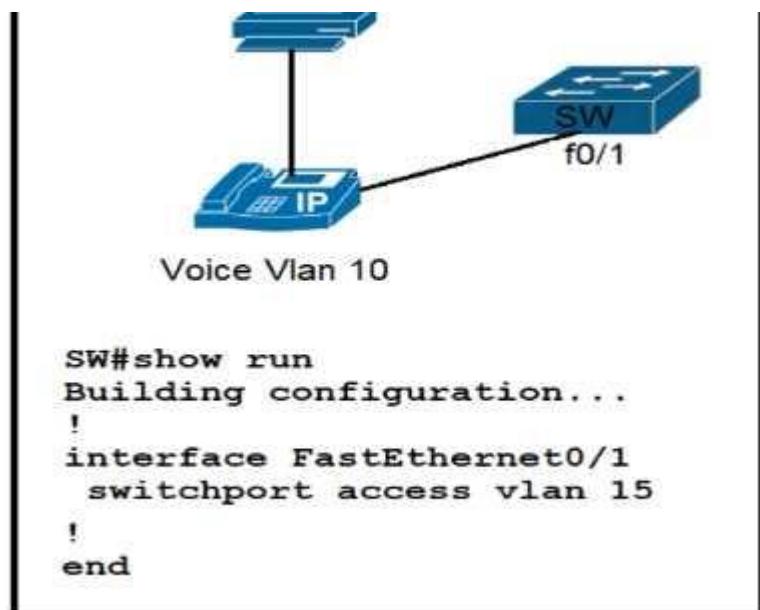
- A. HTTPS
- B. HTTP
- C. Telnet
- D. SSH

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 hcp command?

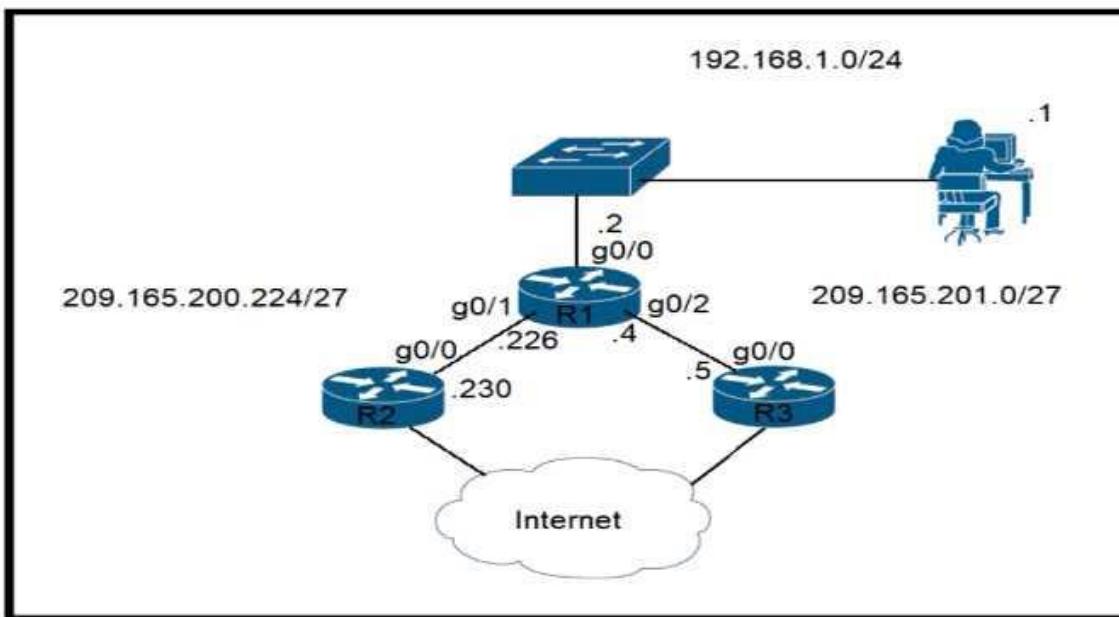
- A. to configure an Interface as a DHCP server
 - B. to configure an interface as a DHCP helper
 - C. to configure an interface as a DHCP relay
 - D. to configure an interface as a DHCP client

Answer: D

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: C

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

QUESTION 607

OSPF must be configured between routers R1 and R2.

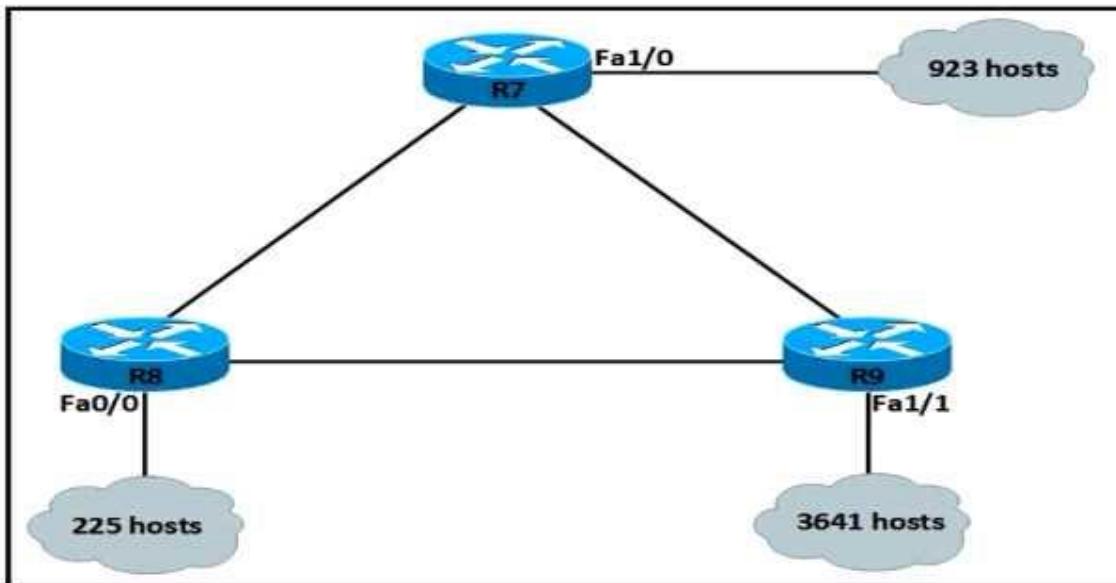
Which OSPF configuration must be applied to router R1 to avoid a DR/BDR election?

- 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 now hosts. Which configuration script must be used?



- A. 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
- B. R7#
configure terminal
interface Fa1/0
ip address 10.1.56.1 255.255.248.0
no shutdown
- R8#
configure terminal
interface Fa0/0
ip address 10.9.32.1 255.255.254.0
no shutdown
- R9#
configure terminal
interface Fa1/1
ip address 10.23.96.1 255.255.248.0
no shutdown
- C. 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
- 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: A**QUESTION 609**

Which wireless security protocol relies on Perfect Forward Secrecy?

- A. WPA3
- B. WPA
- C. WEP
- D. WPA2

Answer: A**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 tile server
- D. provides wireless services to users in a building

Answer: B**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

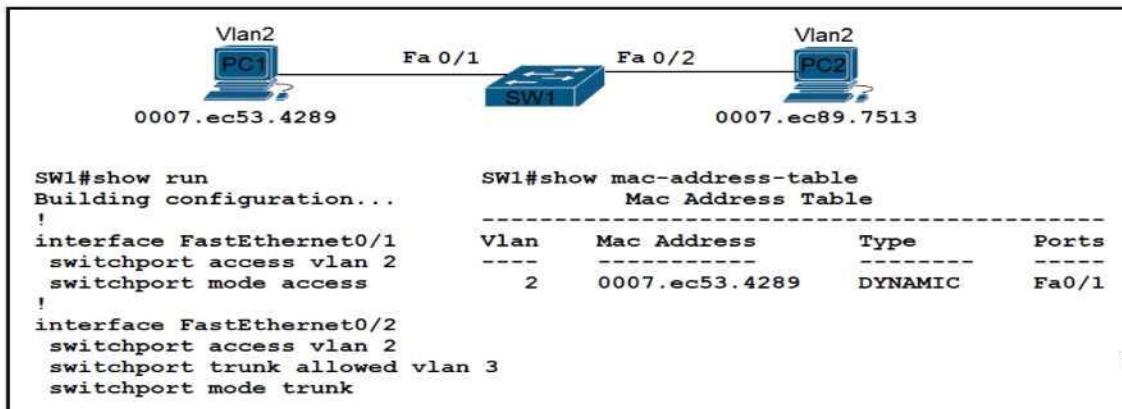
- A. F0/10
- B. F0/11
- C. F0/12
- D. F0/13

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 fa0/1
SW1(config-if)#no switchport access vlan 2
SW1(config-if)#switchport trunk native vlan 2
SW1(config-if)#switchport trunk allowed vlan 3
- C. 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
- D. 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

Answer: A

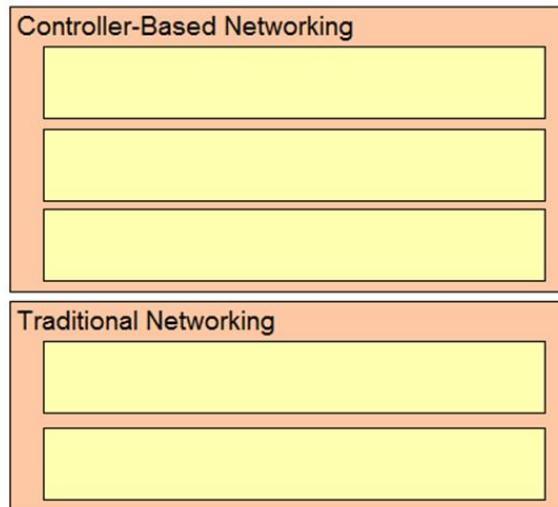
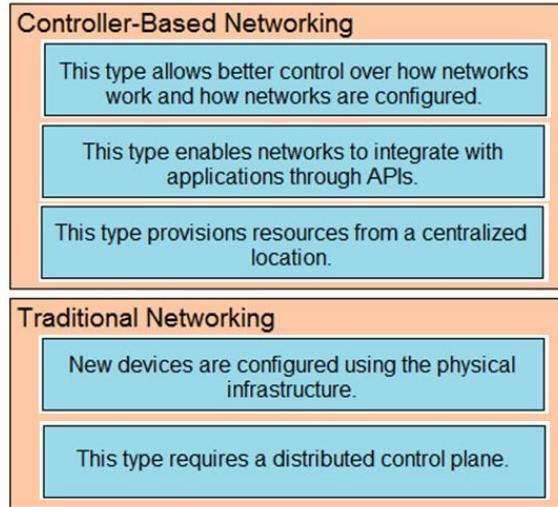
QUESTION 613

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.

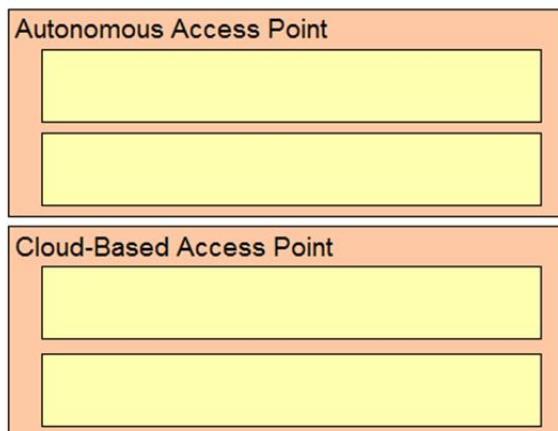
**Answer:****Answer Area****QUESTION 614**

Drag and Drop Question

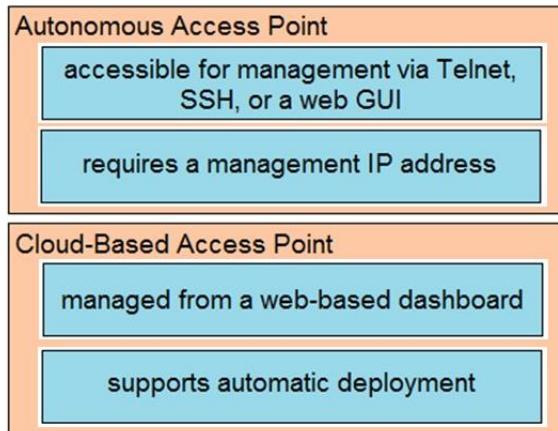
Drag and drop the facts about wireless architectures from the left onto the types of access point on the right. Not all options are used.

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**

configured and managed by a WLC

**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	

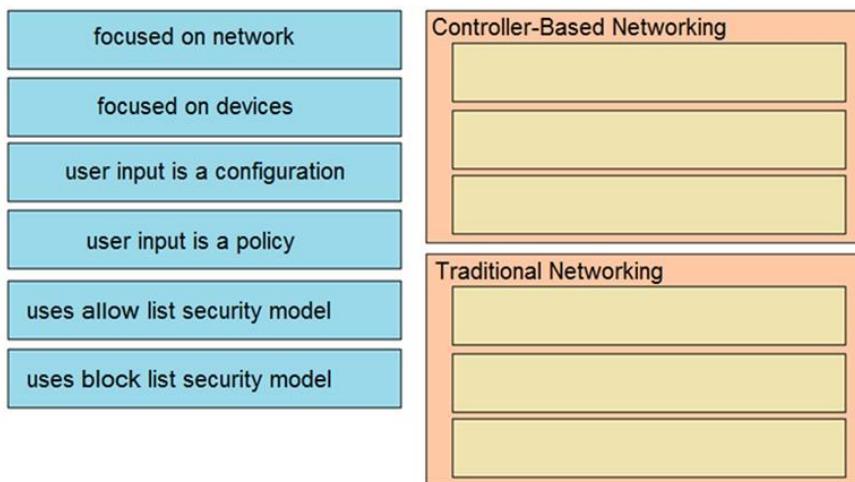
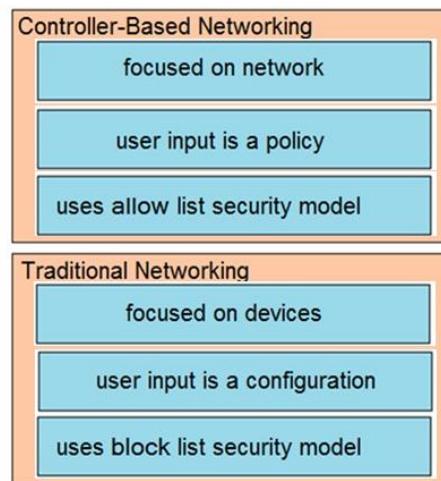
Answer:**Answer Area**

switchport mode access
switchport port-security
switchport port-security mac-address 0060.3EDD.77AB
switchport port-security maximum 2
switchport port-security violation shutdown
switchport port-security mac-address sticky

QUESTION 616

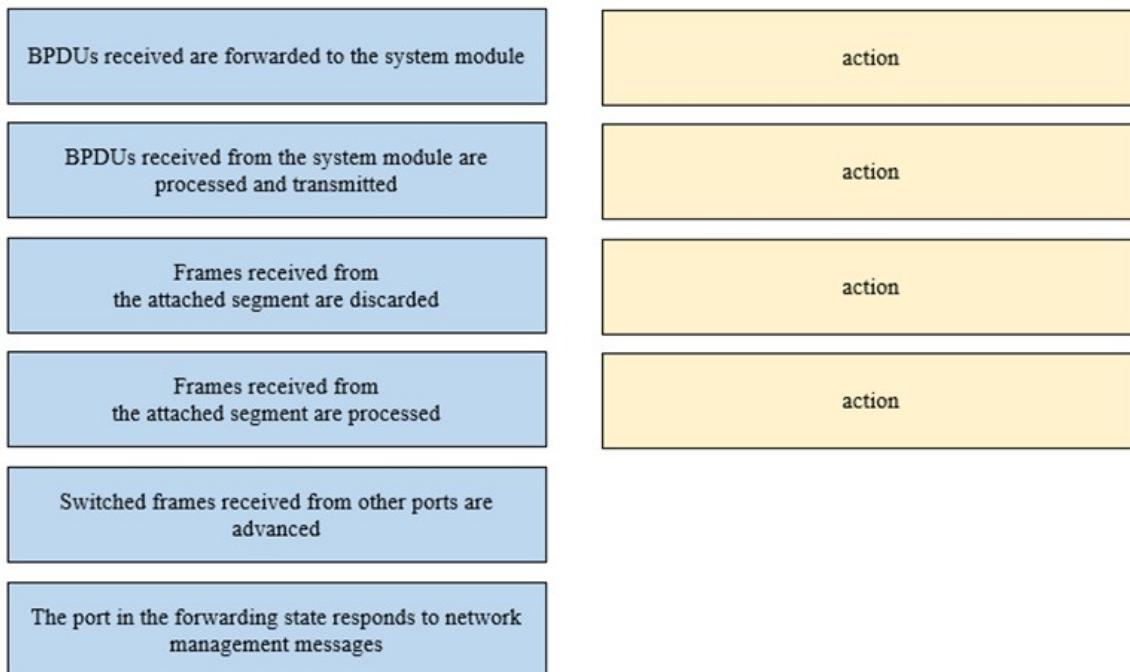
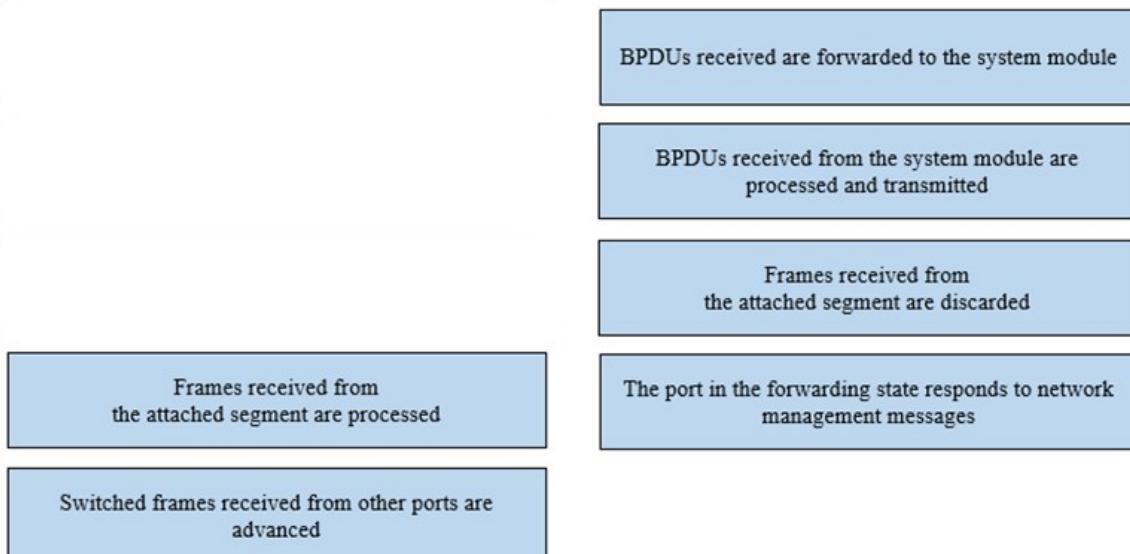
Drag and Drop Question

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 loft 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.

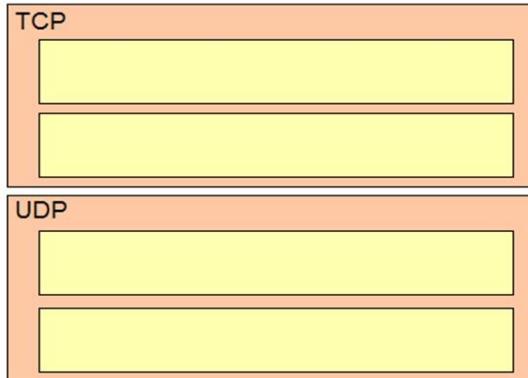
Answer Area

transmitted based on data contained in the packet without the need for a data channel

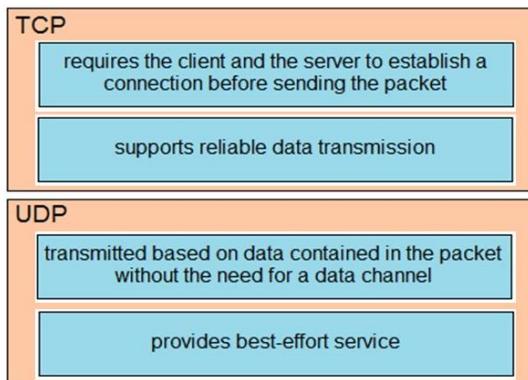
requires the client and the server to establish a connection before sending the packet

provides best-effort service

supports reliable data transmission

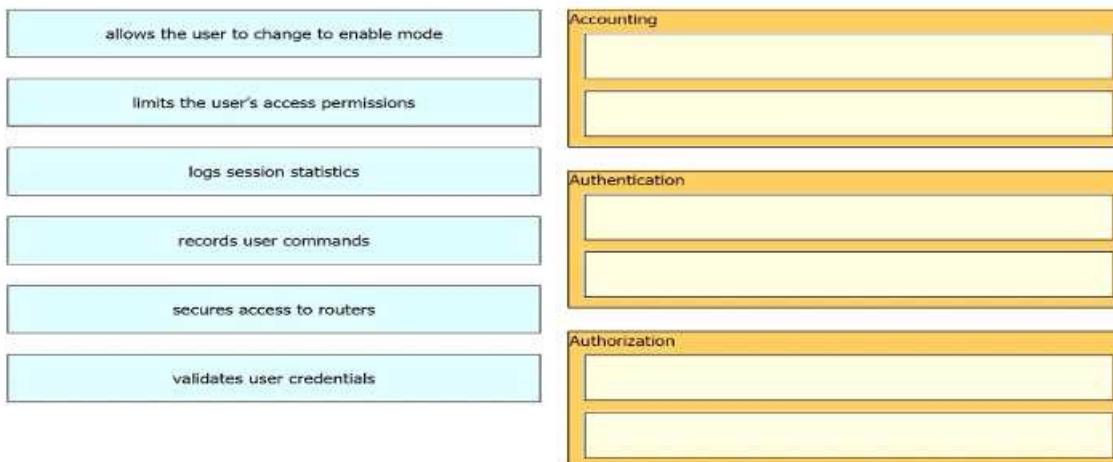
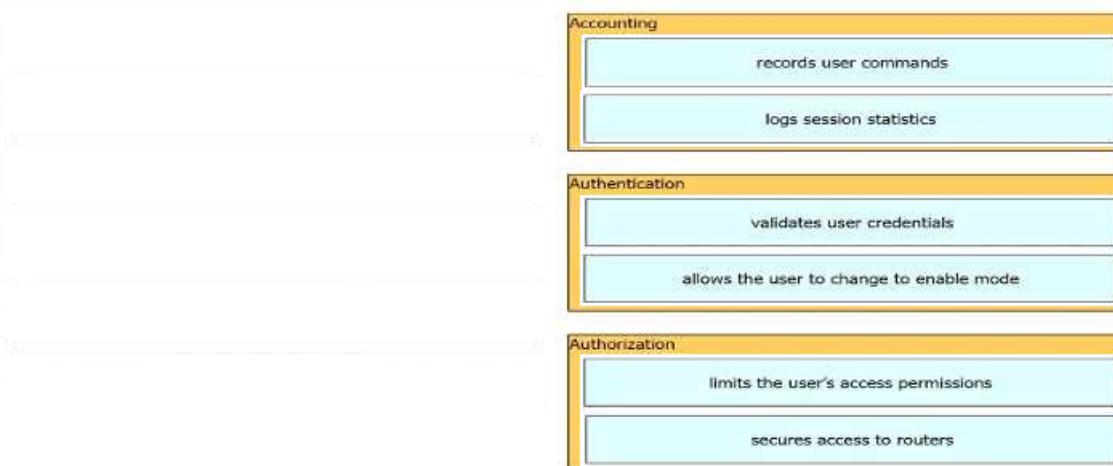


Answer:

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**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

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 Adaptive

Over the DS

Reassociation Timeout 20 Seconds

Protected Management Frame

PMF Disabled

WPA+WPA2 Parameters

WPA Policy
WPA2 Policy
WPA2 Encryption AES TKIP CCMP256 GCMP128 GCMP256
OSEN Policy

Authentication Key Management [19](#)

802.1X Enable
CCKM Enable
PSK Enable
FT 802.1X Enable
FT PSK Enable
SUITEB-1X Enable
SUITEB192-1X Enable
WPA gtk-randomize State [14](#)

- A. Under Protected Management Frames, set the PMF option to Required.
- B. Enable CCKM under Authentication Key Management.
- C. Set the Fast Transition option and the WPA gtk-randomize State to disable.
- D. 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

Layer 2 Security **WPA+WPA2**

Security Type Enterprise

MAC Filtering

WPA+WPA2 Parameters

WPA Policy

WPA2 Policy

WPA2 Encryption CCMP128(AES) TKIP CCMP256 GCMP128 GCMP256

OSEN Policy

Fast Transition

Fast Transition Disable

Protected Management Frame

PMF Disabled

Authentication Key Management

802.1X-SHA1 Enable

- A. Set Fast Transition to Enabled.
- B. Enable WPA Policy.
- C. Set PMF to Required.
- D. Enable MAC Filtering.

Answer: C

QUESTION 625

Which service is missing when RADIUS is selected to provide management access to the WLC?

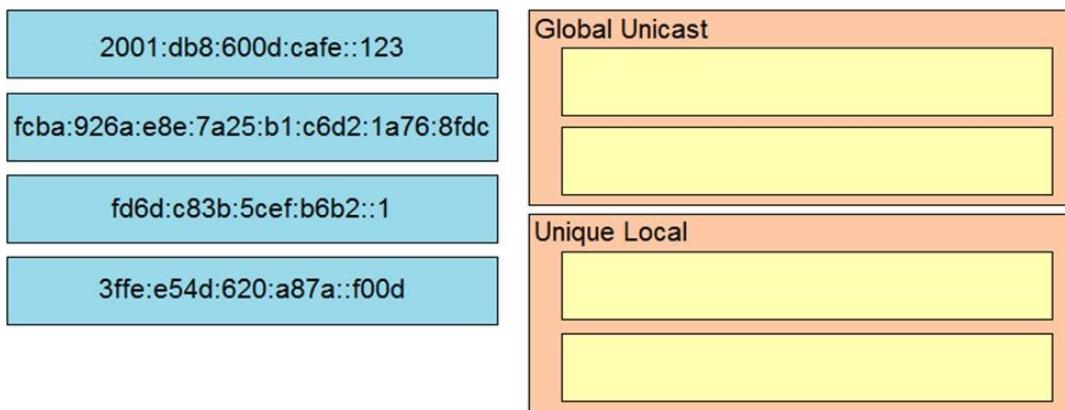
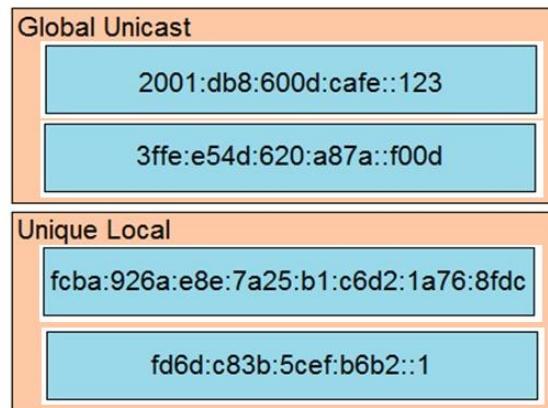
- A. authorization
- B. authentication
- C. accounting
- D. confidentiality

Answer: D

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**Answer:****Answer Area****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?

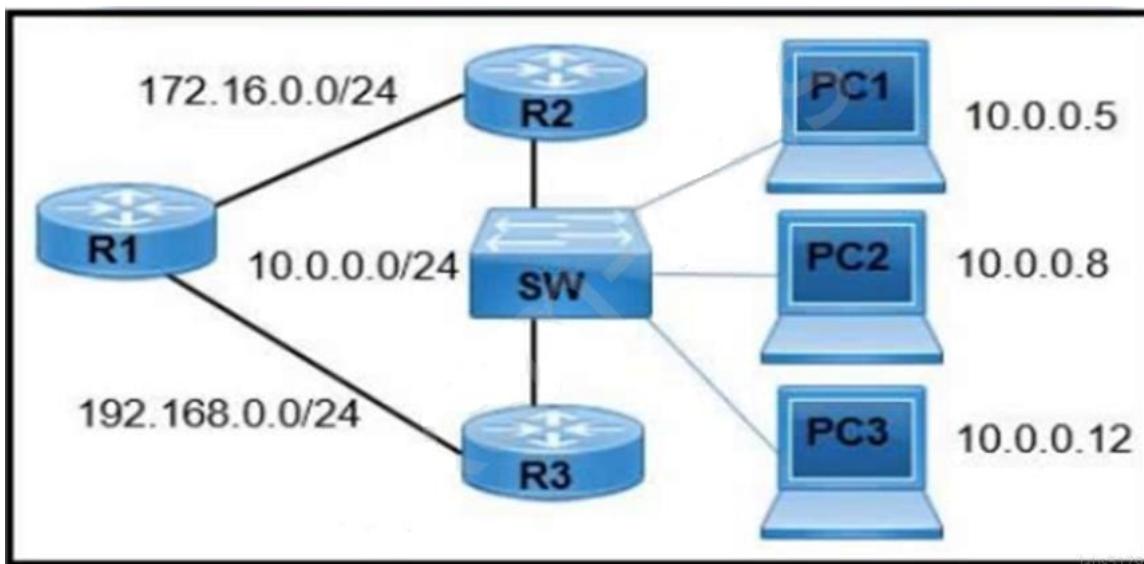
```
R1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      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
      172.16.0/16 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**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. 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

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: A

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

shaping

policing

congestion

cloud-based weighted
fair queueing**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?

Security		RADIUS Authentication Servers > New	
AAA			
General		Server Index (Priority)	1
RADIUS Authentication		Server IP Address[Ipv4/Ipv6]	192.168.25.2
Fallback:		Shared Secret Format	ASCII
DNS:		Shared Secret	*****
Downloaded AVP:		Confirm Shared Secret	*****
TACACS+			
LDAP:		<input type="checkbox"/> (Designed for FIPS customers and requires a key wrap compliant RADIUS server)	
Local Net Users:		Key Wrap	
MAC Filtering:		Port Number	1912
Disabled Clients		Server Status	Enabled
User Login Policies		Support for CoA	Disabled
AP Policies		Server Timeout	2 seconds
Password Policies		Network User	<input type="checkbox"/> Enable
Local EAP		Management	<input type="checkbox"/> Enable
Advanced EAP		Management Retransmit Timeout	2 seconds
Priority Order		Tunnel Proxy	<input type="checkbox"/> Enable
Certificate		IPSec	<input type="checkbox"/> Enable
Access Control Lists			
Wireless Protection Policies			

- 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

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"]  
}
```

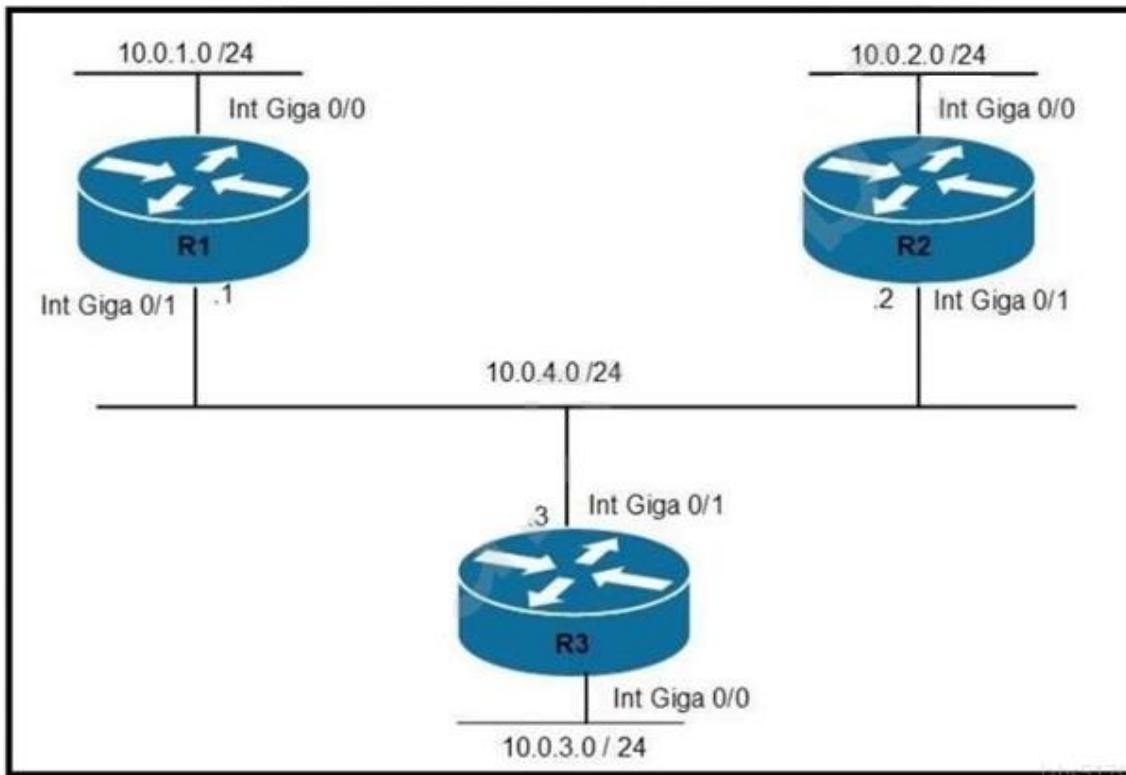
- A. 1
- B. 2
- C. 3
- D. 4

Answer: D

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 do you enter so that 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

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
      172.16.0/16 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
```

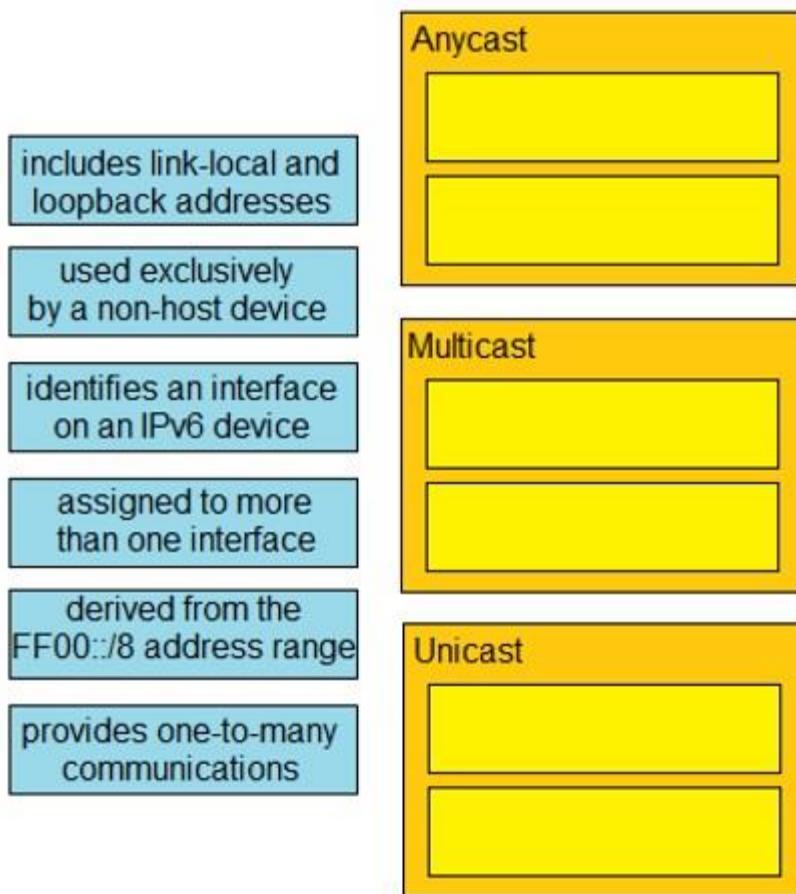
- A. 192.168.7.4
- B. 192.168.7.7
- C. 192.168.7.35
- D. 192.168.7.40

Answer: D

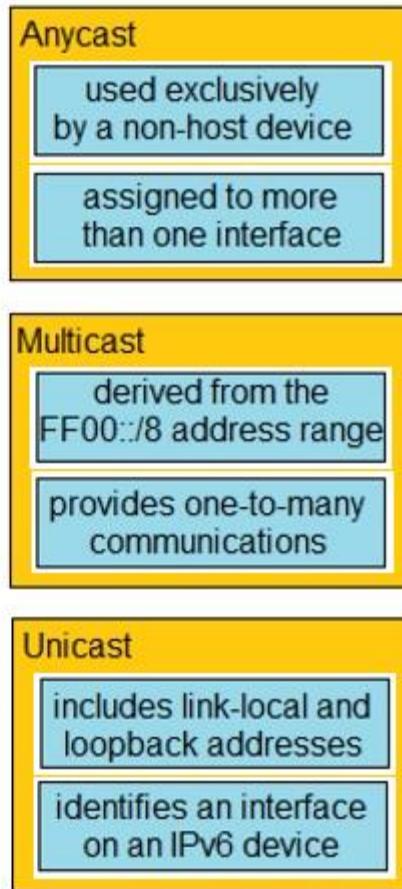
QUESTION 654

Drag and Drop Question

Drag and drop the IPv6 address details from the left onto the corresponding types on the right.



Answer:

**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

used to reliably share files between devices

appropriate for streaming operations with minimal latency

provides best-effort service

supports reliable data transmission

TCP**UDP****Answer:****Answer Area****TCP**

used to reliably share files between devices

supports reliable data transmission

UDP

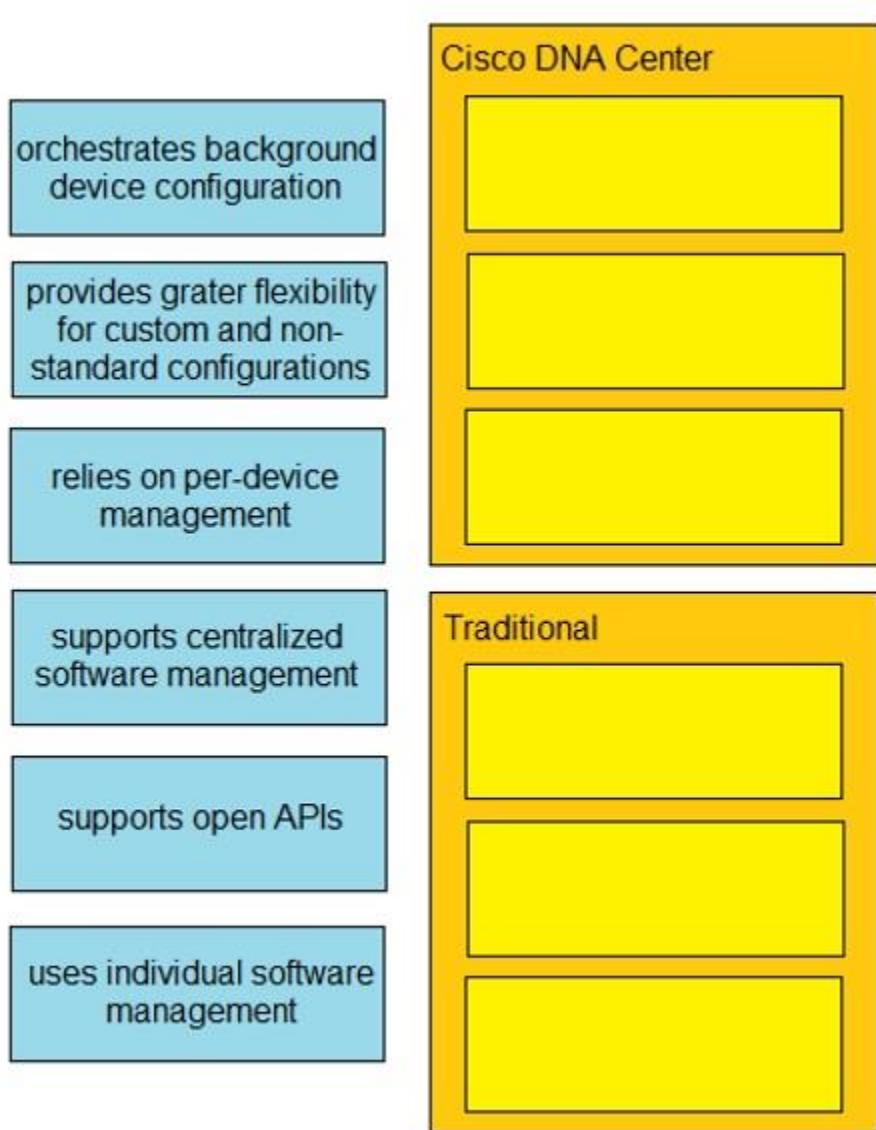
appropriate for streaming operations with minimal latency

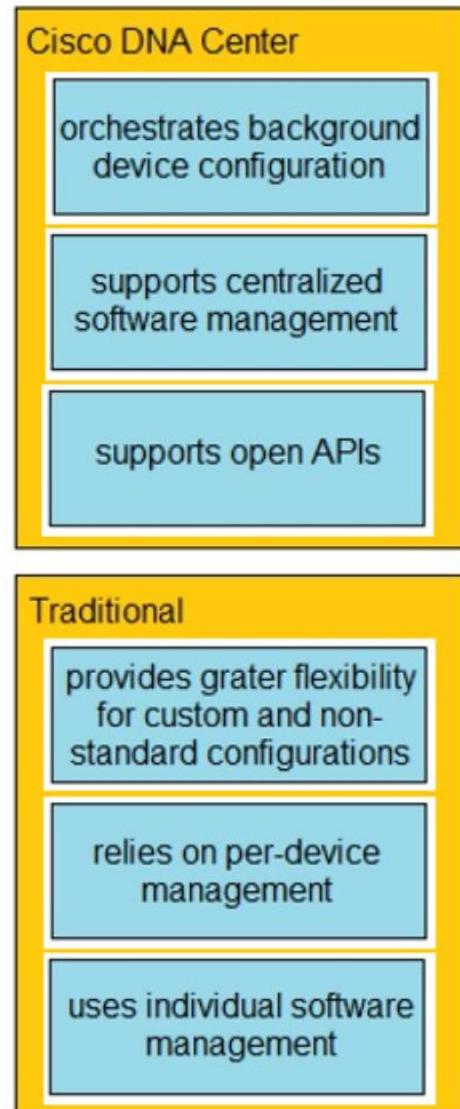
provides best-effort service

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:

	security standard
	security policy
	education
	awareness
	training

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

Drag and Drop Question

Drag and drop the TCP or UDP details from the left onto their corresponding protocols on the right.

Answer Area

used to reliably share files between devices

appropriate for streaming operations with minimal latency

provides best-effort service

supports reliable data transmission

TCP**UDP****Answer:****Answer Area****TCP**

used to reliably share files between devices

supports reliable data transmission

UDP

appropriate for streaming operations with minimal latency

provides best-effort service

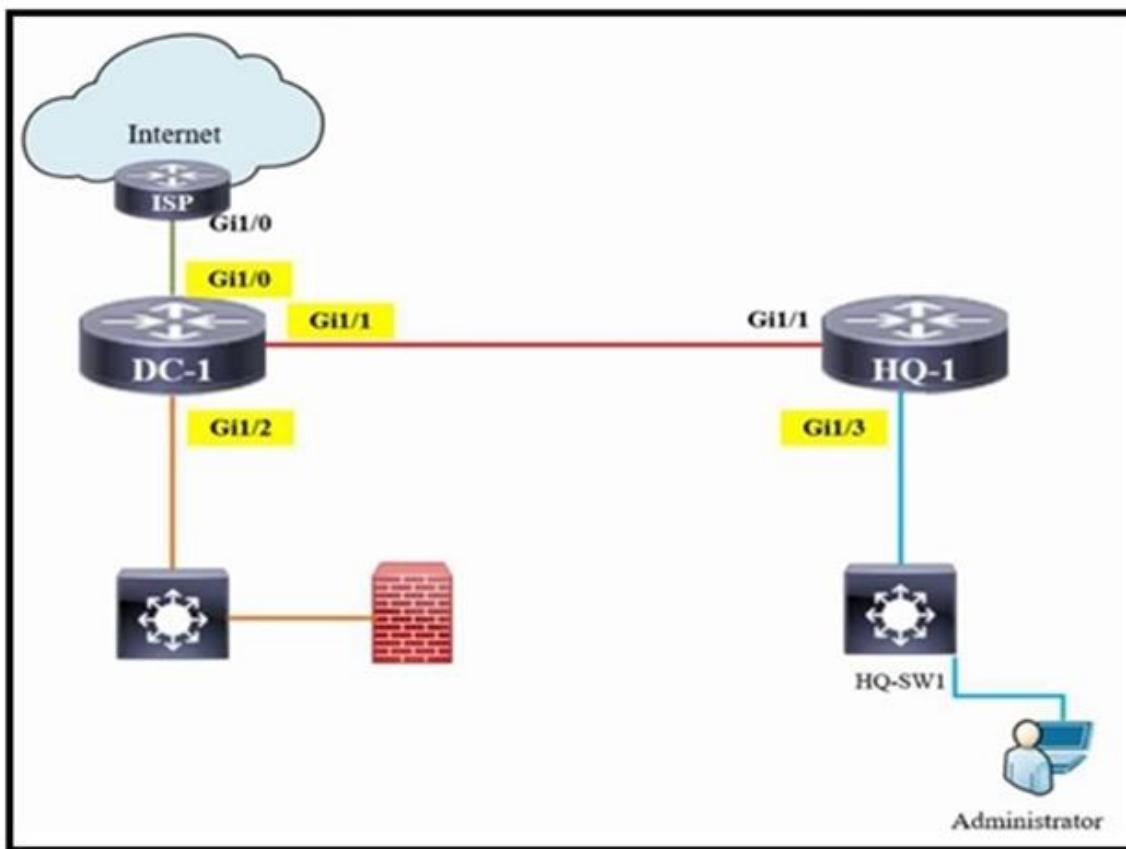
QUESTION 660

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 Gi1/3 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:

	DC-1
ip address 209.165.202.130 255.255.255.252	
ip address 192.168.4.9 255.255.255.248	
ip address 192.168.4.13 255.255.255.240	
	HQ-1
ip address 209.165.202.131 255.255.255.252	
ip address 192.168.3.14 255.255.255.248	

QUESTION 661

Drag and Drop Question

Drag and drop the IPv6 address description from the left onto the IPv6 address types on the right.
Not all options are used.

IPv6 addresses in the format FF02::5	Unique Local Addresses
IPv6 addresses that begin with FD	
may be used by multiple organizations at the same time	
private IPv6 addresses	
serve as next-hop addresses	Link-Local Addresses
unable to serve as destination addresses	

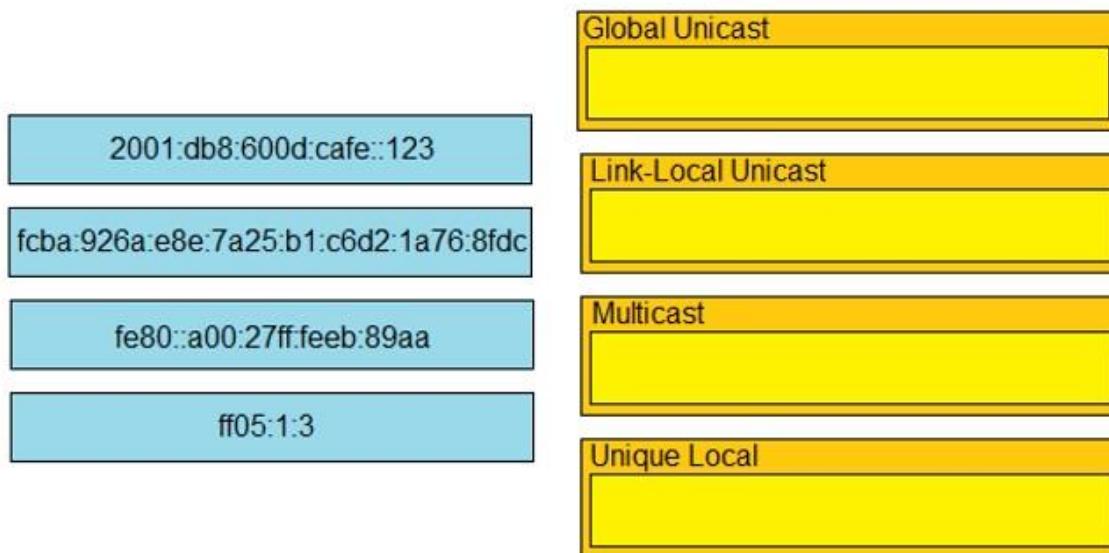
Answer:

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	

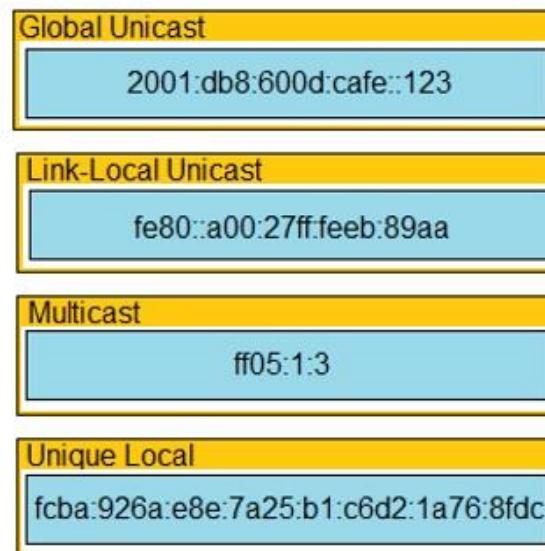
QUESTION 662

Drag and Drop Question

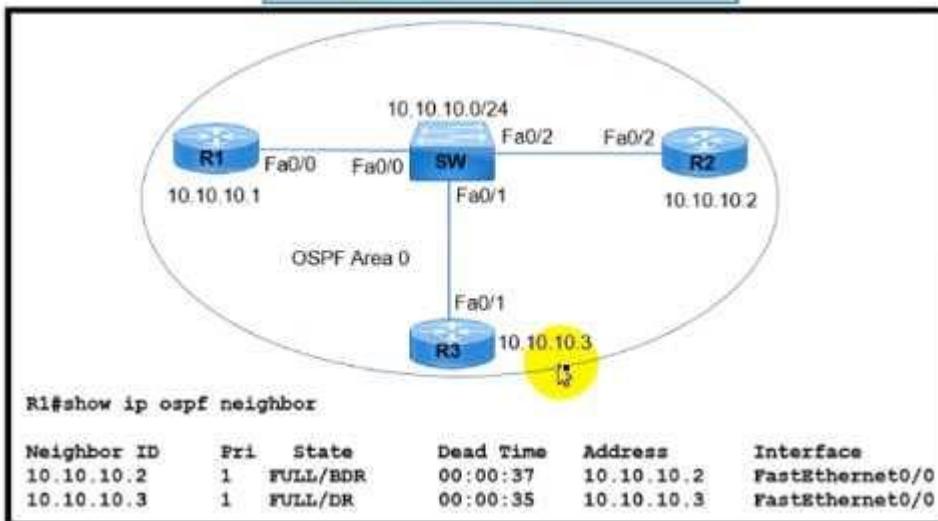
Drag and drop the IPv6 addresses from the left onto the corresponding address types on the right.



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?



- R1(config)#interface FastEthernet 0/0
R1(config-if)#ip ospf priority 1
R1#clear ip ospf process
- R1(config)#interface FastEthernet 0/0
R1(config-if)#ip ospf priority 200
R1#clear ip ospf process
- R3(config)#interface FastEthernet 0/1
R3(config-if)#ip ospf priority 200
R3#clear ip ospf process
- R2(config)#interface FastEthernet 0/2
R2(config-if)#ip ospf priority 1
R2#clear ip ospf process

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

Answer: B

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: A

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 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

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?



- 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

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