



**Cisco**

## **Exam Questions 642-883**

Deploying Cisco Service Provider Network Routing (SPROUTE)

### NEW QUESTION 1

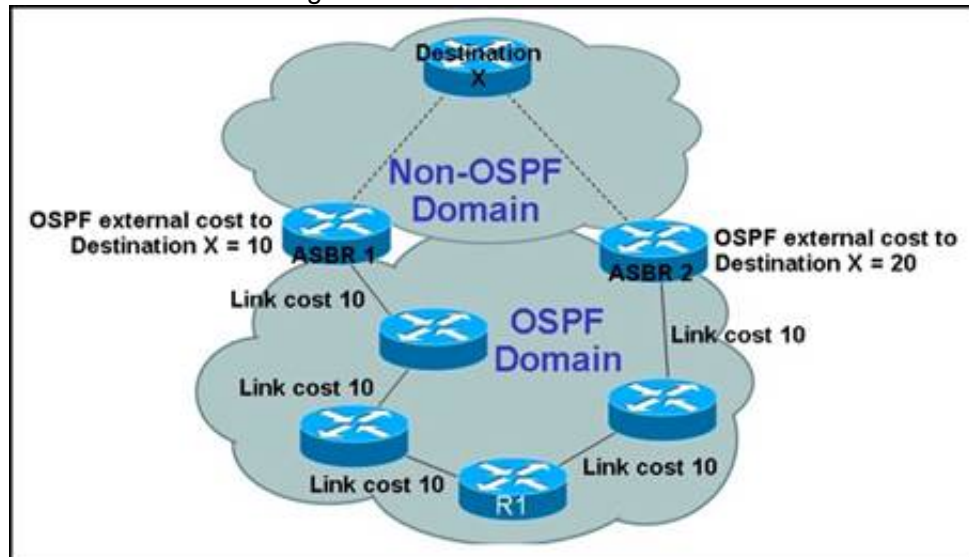
A service provider is running BGP with clients at the edge of the network. The service provider sees that routing updates from one site are being dropped when the other site receives them. Which feature fixes this issue?

- A. EBGp multihop
- B. inter-AS peering
- C. AS-override
- D. allow-AS in

**Answer: C**

### NEW QUESTION 2

Refer to the network diagram in the exhibit.



If both ASBRs are advertising the external Destination X network as OSPF E2 route, what is the best path for the R1 router to reach Network X?

- A. R1 will use the path via ASBR 2 as the best path.
- B. R1 will use the path via ASBR 1 as the best path.
- C. R1 will load balance between two equal cost paths via ASBR 1 and ASBR 2.
- D. R1 will see two equal costs and will choose the path through the ASBR with the lower OSPF router ID.

**Answer: B**

### NEW QUESTION 3

In Cisco IOS XE, which option is the default threshold value for slow peer detection?

- A. 120 seconds
- B. 180 seconds
- C. 240 seconds
- D. 300 seconds

**Answer: D**

### NEW QUESTION 4

Which option is the minimum required configuration to enable PIM on a Cisco IOS XR router interface?

- A. router pim address-family ipv4 interface GigabitEthernet0/0/0/0
- B. router pim interface GigabitEthernet0/0/0/0 address-family ipv4 enable
- C. router pim address-family ipv4 interface GigabitEthernet0/0/0/0 enable
- D. router pim interface GigabitEthernet0/0/0/0 enable
- E. router pim address-family ipv4 interface GigabitEthernet0/0/0/0 address-family ipv4 enable

**Answer: D**

### NEW QUESTION 5

When troubleshooting OSPF neighbor errors, which three verification steps should be considered? (Choose three.)

- A. Verify if neighboring OSPF interfaces are configured in the same area.
- B. Verify if neighboring OSPF interfaces are configured with the same OSPF process ID.
- C. Verify if neighboring OSPF interfaces are configured with the same OSPF priority.
- D. Verify if neighboring OSPF interfaces are configured with the same hello and dead intervals.
- E. Verify if neighboring OSPF interfaces are configured with the same area type.

**Answer: ADE**

### NEW QUESTION 6

Refer to the Cisco IOS route map configuration exhibit.

```
route-map test permit 10
match ip address prefix-list PL1 PL2
match as-path APACL1
set local-preference 200
set metric 1000
!
route-map test permit 100
```

Which two statements are correct? (Choose two.)

- A. The match prefix-list condition is a logical OR: match prefix list PL1 OR PL2.
- B. All match conditions are logical OR: match prefix list PL1 OR PL2 OR match the APACL1 AS path access list.
- C. The three match conditions are logical AND
- D. match prefix list PL1 AND PL2 AND match the APACL1 AS path access list.
- E. The local preference AND the metric will be set to 100 IF the route matches the PL1 OR PL2 prefix list AND the route must also match the APACL1 AS path access list.
- F. All routes that are not matched by the sequence 10 route map statement will be dropped.

**Answer:** AD

**Explanation:** [http://www.routeralley.com/ra/docs/route\\_maps.pdf](http://www.routeralley.com/ra/docs/route_maps.pdf)

When match criteria is contained within a single line, a logical OR is applied.

#### NEW QUESTION 7

Which option is an invalid BGP community representation?

- A. binary
- B. autonomous system number : value
- C. hexadecimal
- D. decimal

**Answer:** C

#### NEW QUESTION 8

A network engineer must secure every BGP session within the autonomous system by enabling MD5 authentication. Which command implements authentication on network devices that run regular Cisco IOS?

- A. password encryptedpassword
- B. neighboripv4\_addresspasswordpassword
- C. service password-encryption
- D. key chain md5

**Answer:** B

#### NEW QUESTION 9

Which two statements regarding OSPFv2 or OSPFv3 authentication are correct? (Choose two.)

- A. OSPFv2 supports MD5 authentication.
- B. OSPFv2 supports MD5 or SHA authentication.
- C. OSPFv2 relies on the native security stack that uses IPsec.
- D. OSPFv3 supports MD5 authentication.
- E. OSPFv3 supports MD5 or SHA authentication.
- F. OSPFv3 relies on the native security stack that uses IPsec.

**Answer:** AF

#### NEW QUESTION 10

Which configuration allows incoming traffic on the FastEthernet 0/1 interface of a router to be policy-routed via the next-hop 192.168.10.1, when it is reachable and otherwise be routed normally?

- A. interface Fa0/1ip policy route-map-nh-reachableroute-map nh-reachable permit 10set ip next-hop verify-availabilityroute-map nh-reachable permit 20set ip next-hop 192.168.10.1
- B. interface Fa0/1ip policy route-map-nh-reachableroute-map nh-reachable permit 10set ip next-hop verify-availability 192.168.10.1route-map nh-reachable permit 20
- C. interface Fa0/1ip policy route-map-nh-reachableroute-map nh-reachable permit 10set ip next-hop 192.168.10.1 trackroute-map nh-reachable permit 20
- D. interface Fa0/1ip policy route-map-nh-reachableroute-map nh-reachable permit 10set ip next-hop 192.168.10.1route-map nh-reachable permit 20set default interface

**Answer:** B

#### NEW QUESTION 10

Refer to the PE1 router routing table output exhibit.

RP/0/RSP0/CPU0:PE1#show route ipv4 isis

```
<output omitted>
i su 10.1.10.0/24 [115/30] via 0.0.0.0, 00:40:34, Null0
i L1 10.1.10.1/32 [115/30] via 192.168.101.11, 00:42:39, GigabitEthernet0/0/0/0
i L1 10.1.10.2/32 [115/24] via 192.168.112.21, 00:44:40, GigabitEthernet0/0/0/1
i L1 10.1.10.3/32 [115/32] via 192.168.113.22, 00:38:23, GigabitEthernet0/0/0/2
i L1 10.1.10.4/32 [115/22] via 192.168.114.23, 00:14:10, GigabitEthernet0/0/0/3
<output omitted>
```

What is causing the i su 10.1.10.0/24 [115/30] via 0.0.0.0, 00:40:34, Null0 entry on the PE1 router routing table?

- A. The PE1 router is receiving the 10.1.10.0/24 summary route from the upstream L1/L2 IS-IS router.
- B. The PE1 router has been configured to summarize the 10.1.10.x/32 IS-IS routes to 10.1.10.0/24.
- C. The 10.1.10.0/24 has been suppressed because IS-IS auto-summary has been disabled on the PE1 router.
- D. The 10.1.10.0/24 has been suppressed because of a route policy configuration on the PE1 router.
- E. The 10.1.10.0/24 has been suppressed because the more specific 10.1.10.x/32 IS-IS routes have been configured to leak into the IS-IS non-backbone area.

**Answer: B**

**Explanation:**

Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP  
 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 - ISIS, L1 - IS-IS level-1  
 L2 - IS-IS level-2, ia - IS-IS inter area  
 su - IS-IS summary null, \* - candidate default  
 U - per-user static route, o - ODR, L - local

C:\Documents and Settings\user-nwz\Desktop\1.JPG

#### NEW QUESTION 14

DRAG DROP

Drag the BGP attributes on the left to the boxes on the right in the correct order. The attribute that is used first during the BGP route selection process should be the top box on the right, and the attribute that is used last should be the bottom box on the right.

|                  |        |
|------------------|--------|
| MED              | Target |
| Weight           | Target |
| AS-Path Length   | Target |
| Local Preference | Target |

**Answer:**

**Explanation:** Weight Local-Preference  
 As-Path MED

#### NEW QUESTION 15

Which two features are specific only to Tier 3 providers? (Choose two.)

- A. interconnects with Tier Level 1 and Tier Level 2 ISPs in public peering points
- B. only purchases transit from other networks to reach the Internet
- C. purchases transit and pays settlements to other service providers
- D. uses strict route filtering to allow only customer and local routes to be sent to upstream providers
- E. receives a full Internet routing table via BGP from its upstream provider, which it can use for load-balancing traffic

**Answer: BD**

#### NEW QUESTION 20

A network engineer is configuring IS-IS in Cisco IOS XR. Where is BFD configured?

- A. RP/0/RSP0/CPU0:router(config-isis-if)#
- B. RP/0/RSP0/CPU0:router(config)#
- C. RP/0/RSP0/CPU0:router(config-bfd)#
- D. RP/0/RSP0/CPU0:router(config-isis-if-af)#

**Answer: A**

#### NEW QUESTION 23

A service provider has set up new eBGP sessions for new customers who require Internet connectivity for their own public AS sessions. To connect, these



sessions require MD5 authentication and no cluster ID configured. The NOC notified that one of these eBGP neighbors does not establish any session with the CE BGP speaker. Which option is a potential cause if the BGP configuration is correct?

- A. The BGPMD5 password has been typed incorrectly producing a failure in the authentication process.
- B. A public AS does not require another service provider to connect to the Internet
- C. The BGP configuration automatically blocks this type of design due to loop-avoidance built-in mechanisms.
- D. The customer BGP speaker is receiving too many prefixes at once and no connection can be established without a maximum –prefix value configured.
- E. No cluster ID is configured, so the BGP process does not find a way to identify the service provider BGP speaker in the customer BGP route reflectors cluster-list
- F. The session is not established to keep the customer iBGP core network loop-free.

**Answer:** A

#### NEW QUESTION 27

What is the default OSPF seed metric and type?

- A. 10 and E1
- B. 10 and E2
- C. 20 and E1
- D. 20 and E2
- E. 0 and E1
- F. 0 and E2

**Answer:** D

#### NEW QUESTION 32

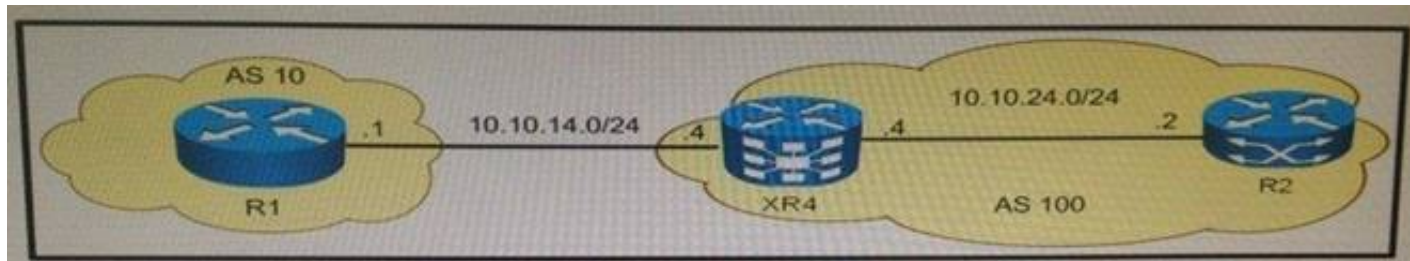
Which option can a network specialist use to configure connected route redistribution inside VRF "TEST" on Cisco IOS XR and allow only the prefix 10.10.10.0/24?

- A. route-policy ALLOW-CONN if destination in PERMIT\_PREFIX then pass sed drop end-policy prefix-set PERMIT\_PREFIX 10.10.10.0/24 end-set router bgp 65000 vrf TEST rd 65000:10000 address-family ipv4 unicast redistribute connected route-policy ALLOW-CONN
- B. route-policy ALLOW-CONN if source in PERMIT\_PREFIX then pass sed drop end-policy prefix-set PERMIT\_PREFIX 10.10.10.0/24 end-set router bgp 65000 vrf TEST rd 65000:10000 address-family ipv4 unicast redistribute connected route-policy ALLOW-CONN
- C. route-policy ALLOW-CONN if protocol is connected and source in PERMIT\_PREFIX then pass sed drop end-policy prefix-set PERMIT\_PREFIX 10.10.10.0/24 end-set router bgp 65000 vrf TEST rd 65000:10000 address-family ipv4 unicast redistribute connected route-policy ALLOW-CONN
- D. route-policy ALLOW-CONN if route-type is local and destination in PERMIT\_PREFIX then pass sed drop end-policy prefix-set PERMIT\_PREFIX 10.10.10.0/24 end-set router bgp 65000 vrf TEST rd 65000:10000 address-family ipv4 unicast redistribute connected route-policy ALLOW-CONN

**Answer:** A

#### NEW QUESTION 34

Refer to the exhibit.



Which configuration is correct for RX4 for an e-BGP session with R1?

- A. router bgp 100 address-family ipv4 unicast neighbor 10.10.14.1 remote-as 10 address-family ipv4 unicast route-policy POLICY in
- B. router bgp 100 address-family ipv4 unicast neighbor 10.10.14.1 remote-as 100
- C. router bgp 100 neighbor 10.10.14.1 remote-as 100
- D. router bgp 100 neighbor 10.10.14.1 remote-as 10 address-family ipv4 unicast

**Answer:** A

#### NEW QUESTION 38

Which three BGP configuration groupings are supported on Cisco IOS XR Software? (Choose three.)

- A. peer-group
- B. af-group
- C. bgp-group
- D. session-group
- E. neighbor-group
- F. as-group

**Answer:** BDE

**Explanation:** • Commands relating to a peer group found in Cisco IOS Release 12.2 have been removed from Cisco IOS XR software. Instead, the af-group, session-group, and neighbor-group configuration commands are added to support the neighbor in Cisco IOS XR software:

–The af-group command is used to group address family-specific neighbor commands within an IPv4 or IPv6 address family. Neighbors that have the same address family configuration are able to use the address family group name for their address family-specific configuration. A neighbor inherits the configuration from an address family group by way of the use command. If a neighbor is configured to use an address family group, the neighbor will (by default) inherit the entire configuration from the address family group. However, a neighbor will not inherit all of the configuration from the address family group if items are explicitly configured for the neighbor.

–The session-group command allows you to create a session group from which neighbors can inherit address family-independent configuration. A neighbor inherits the configuration from a session group by way of the use command. If a neighbor is configured to use a session group, the neighbor (by default) inherits the session group's entire configuration. A neighbor does not inherit all the configuration from a session group if a configuration is done directly on that neighbor.

–The neighbor-group command helps you apply the same configuration to one or more neighbors. Neighbor groups can include session groups and address family groups. This additional flexibility can create a complete configuration for a neighbor. Once a neighbor group is configured, each neighbor can inherit the configuration through the use command. If a neighbor is configured to use a neighbor group, the neighbor (by default) inherits the neighbor group's entire BGP configuration.

–However, a neighbor will not inherit all of the configuration from the neighbor group if items are explicitly configured for the neighbor. In addition, some part of the neighbor group's configuration could be hidden if a session group or address family group was also being used.

#### NEW QUESTION 41

An engineer is troubleshooting an OSPF adjacency between the R1 and R2 and is seeing the following debug:

R2#debug ip ospf adj

\*May 10 17:48:27.459: OSPF: Rcv pkt from 10.1.2.1, FastEthernet1/0 : Mismatch Authentication type. Input packet specified type 1, we use type 2

Which option describes why the adjacency cannot be established?

- A. R1 is configured for plaintext authentication.
- B. R1 is not configured for authentication.
- C. R2 is not configured for authentication.
- D. R2 is configured for plaintext authentication.

**Answer:** A

#### NEW QUESTION 46

An engineer is working for a service provider who is strategically important to the Internet data traffic. The CTO is promoting a core infrastructure upgrade to connect via optical links network service providers. Which three concerns must be addressed while planning the new BGP features and functionalities? (Choose three.)

- A. BGP suboptimal routing
- B. IPv4 exhaustion
- C. routers and switches hardware capabilities
- D. route dampening of current customers
- E. multihoming policies of new customers
- F. IGP reconvergence time on the inter-AS links
- G. BGP blackholing when acting as transit autonomous system

**Answer:** ACG

#### NEW QUESTION 49

Which reserved AS number or range of numbers is used for backward compatibility between old BGP peers using 16-bit AS number and new BGP peers using 32-bit AS number?

- A. AS 65001 to 65535
- B. AS 65512 to 65535
- C. AS 12345
- D. AS 23456
- E. AS 64001

**Answer:** D

**Explanation:** [http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps6554/ps6599/4byte\\_asnios.pdf](http://www.cisco.com/en/US/prod/collateral/iosswrel/ps6537/ps6554/ps6599/4byte_asnios.pdf)

New Reserved AS# AS\_TRANS = AS #23456

2-byte placeholder for a 4-byte AS number

Used for backward compatibility between OLD and NEW BGP speakers

#### NEW QUESTION 52

An engineer is working on routers within AS 100. Which regular expression can be used in an AS path access list to match locally originated routes from AS 100?

- A. ^100\$
- B. ^\$
- C. \_100\$
- D. ^[0-9]\*\$

**Answer:** B

#### NEW QUESTION 55

Which value must be configured when redistributing OSPFv2 into RIP?

- A. metric
- B. bandwidth
- C. delay
- D. MTU
- E. reliability

**Answer:** A

#### NEW QUESTION 60

Which option is used by BGP for basic authentication between neighbors?

- A. TCP option 19 and MD5 hash
- B. TCP option 19 and SHA hash
- C. UDP option 19 and MD5 hash
- D. UDP option 19 and SHA hash

**Answer:** A

#### NEW QUESTION 65

In a Cisco IOS XR OSPF NSF operation, which option is the result of a segment without NSF-capable peers?

- A. NSF is disabled on all segmentson any linecard that has a non-NSF-capable neighbor.
- B. NSF capabilities for that segment are disabled.
- C. NSF operates in unidirectional mode for that segment.
- D. NSF is disabled globally on the router.

**Answer:** B

#### NEW QUESTION 67

Which two methods implement high availability in OSPF on Cisco IOS XR? (Choose two.)

- A. NSF
- B. NSR
- C. BFD
- D. fast hellos
- E. sham-links

**Answer:** AB

#### NEW QUESTION 72

DRAG DROP

Drag the list of OSPF route type on the left to match the correct OSPF area type on the right. Not all options on the left are used.

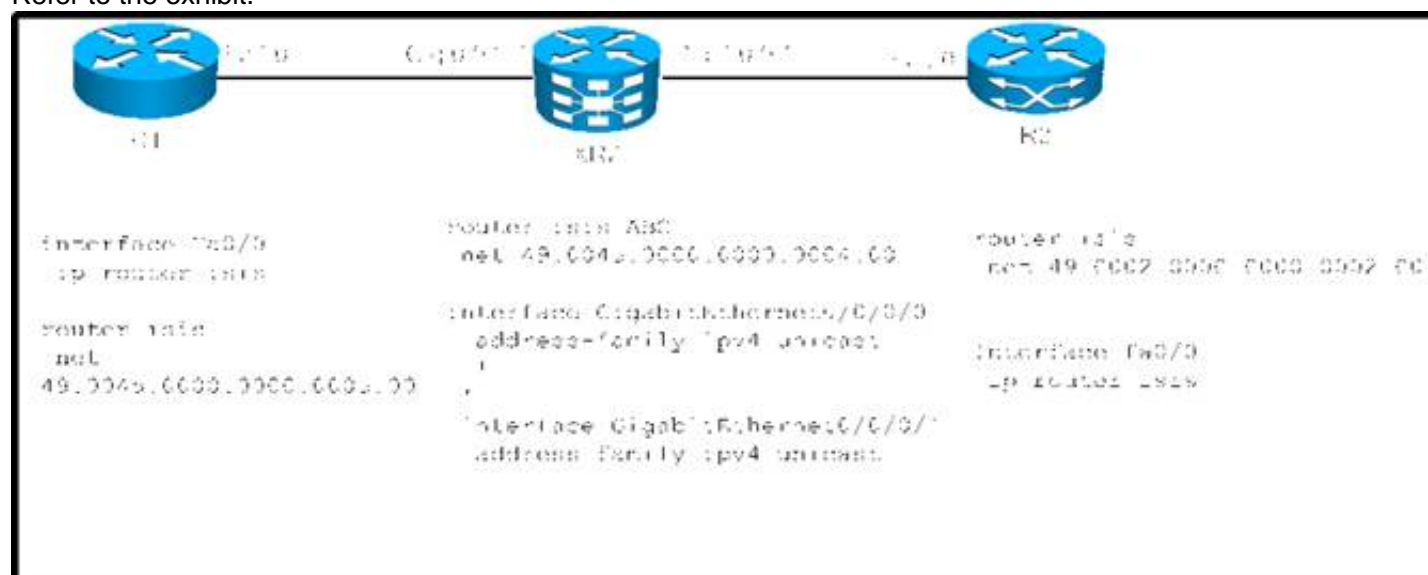
|   |                     |
|---|---------------------|
| Can contain the O, O IA and O*IA type of OSPF routes      | NSSA Totally Stubby |
| Can contain the O, O IA, O N1 or O N2 type of OSPF routes | Stubby OSPF Area    |
| Can contain the O and O*IA type of OSPF routes            | Totally Stubby Area |
| Can contain the O, O N1 or O N2 type of OSPF routes       | NSSA                |
| Can contain the O, O IA, O E1 or O E2 type of OSPF routes |                     |
| Can contain the O, O E1 or O E2 type of OSPF routes       |                     |

**Answer:**

**Explanation:** Totally Stubby Area – O,OIA , OE1 or OE2 types of OSPf routes  
 NSSA Totally Stubby – O, and O\*IA types of OSPF routes  
 Stubby OSPF Area - O, OIA and O\*IA types of OSPF routes  
 NSSA – O,OIA , ON1 or ON2 types of OSPF Routes

#### NEW QUESTION 74

Refer to the exhibit.



Which configuration on XR2 provides R1 with only the minimum routing information to reach the rest of the network?

- A. Router isis ABCinterface GigabitEthernet0/0/0/1 circuit-type level-2-only
- B. Router isis ABCinterface GigabitEthernet0/0/0/0 circuit-type level-1-2
- C. Router isis ABCinterface GigabitEthernet0/0/0/1 circuit-type level-1
- D. Router isis ABCinterface GigabitEthernet0/0/0/0 circuit-type level-1

**Answer:** D

#### NEW QUESTION 77

Which high-availability mechanism is a detection protocol that is enabled at the interface and at the routing protocol levels?

- A. NSF
- B. SSO
- C. NSR
- D. BFD
- E. SDR

**Answer:** D

**Explanation:** [http://www.cisco.com/en/US/docs/ios/12\\_0s/feature/guide/fs\\_bfd.html](http://www.cisco.com/en/US/docs/ios/12_0s/feature/guide/fs_bfd.html)

#### NEW QUESTION 82

Which two types of IS-IS routers contain routing entries from routers within the IS-IS domain by default? (Choose two.)

- A. L2
- B. L1/L2
- C. DR
- D. L3
- E. L1

**Answer:** AB

#### NEW QUESTION 85

When configuring BGP on Cisco IOS XR Software, which address-family is enabled by default?

- A. IPv4 unicast
- B. IPv6 unicast
- C. VPNv4
- D. IPv4 unicast and IPv6 unicast
- E. IPv4 unicast and IPv6 unicast and VPNv4
- F. No address-family is enabled by default.

**Answer:** F

**Explanation:** [http://www.cisco.com/en/US/docs/ios\\_xr\\_sw/iosxr\\_r3.8/routing/command/reference/rr38bgp.pdf](http://www.cisco.com/en/US/docs/ios_xr_sw/iosxr_r3.8/routing/command/reference/rr38bgp.pdf)

An address family must be explicitly configured in the router configuration mode for the address family to be active in BGP. Similarly, an address family must be configured under the neighbor for the BGP session to be established for that address family. An address family must be configured in router configuration mode before it can be configured under a neighbor.

#### NEW QUESTION 90

An engineer is configuring an eBGP peering session. What is the default TTL value?

- A. 1
- B. 64
- C. 127
- D. 255

**Answer:** A

#### NEW QUESTION 94

An engineer wants to define a route policy that sets MED to a given value in case the extended community attributes of a network prefix match at least one of the values: 65000:10, 65000:20, or 65000:30. Which configuration accomplishes this task?

- A. `extcommunity-set rt my-list 65000:1065000:2065000:30end-setroute-policy my-list ($med)if extcommunity rt matches-within my-list then set met $med`
- B. `extcommunity-set rt my-list 65000:1065000:2065000:30end-setroute-policy my-list ($med)if extcommunity rt matches-any my-list then set met $med`
- C. `extcommunity-set rt my-list 65000:1065000:2065000:30end-setroute-policy my-list ($med)if extcommunity rt matches-within my-list or med is $med is then set met $med`
- D. `extcommunity-set rt my-list 65000:1065000:2065000:30end-setroute-policy my-list ($med)if extcommunity rt matches-any my-list or med is $med then pass`

**Answer:** B

#### NEW QUESTION 99

A customer is concerned about rerouting attacks on the IS-IS domain spanning the company. Which keychain management configuration is valid to authenticate IS-IS link- state information and provide a first response to this type of attack for Cisco IOS XR instances?

- A. `configurekey chain isis-keyskey 1key-string myP@ssw0rdcryptographic-algorithmMD5send-lifetime 18:05:00 may 31 2014 infiniteaccept-lifetime 18:05:00 may 31 2014 infiniterouter isis 1isp-password keychain isis-keys`
- B. `key chain cisco-xrkey 10key-string myP@ssw0rd!interface GigabitEthernet 3/1/1ip addressip_address subnet_maskip router isisis authentication mode md5 level-1isis authentication key-chain cisco-xr level-1`
- C. `configurekey chain isis-keys!key 8cryptographic- algorithm MD5send-lifetime 18:05:00 may 31 2014 infiniteaccept-lifetime 18:05:00 may 31 2014 infiniterouter isis 1isp-password keychainisis-keys`
- D. `configurekey chain isis-keyskey-string myP@ssw0rdsend-lifetime 18:05:00 may 31 2014 infiniteaccept-lifetime 18:05:00 may 31 2014 infiniterouter isis 1isp-password keychain isis-keys`



Answer: A

#### NEW QUESTION 102

A network engineer implements IS-IS authentication in a router. When the engineer implements the same password on the router's peer, the output below is displayed with the debug IS-IS authentication information:

\* Nov 6 13:23:46:967: ISIS-Authinfo: No auth TLV found in received packet Which option is one reason for this output?

- A. Authentication was not configured on the router that sent the update.
- B. The length of the password is not the same.
- C. There is an error with the NET address in one of the routers.
- D. The authentication is set the same way, but the password does not match.

Answer: A

#### NEW QUESTION 105

Which of the following is a characteristic of dual-multihomed connectivity between an enterprise network and the service provider network or networks?

- A. An enterprise network that is connected to two or more different service providers with two or more links per service provider and using BGP to exchange routing updates with the service providers.
- B. Each service provider announces a default route on each of the links that connect to the customer with a different metric.
- C. An enterprise network announces a default route to each service provider.
- D. Load balancing can be achieved using the maximum-paths command.

Answer: A

#### NEW QUESTION 106

Refer to the exhibit.



Which configuration is required on XR2 to enable MD5 IS-IS Authentication between R1 and XR2 using the password CISCO?

- A. Router isis ABCinterface GigabitEthernet0/0/0/0 hello-password encrypted CISCO
- B. Router isis ABCinterface GigabitEthernet0/0/0/0 hello-password hmac-md5 CISCO
- C. Router isis ABCisp-password hmac-md5 CISCO
- D. Router isis ABCisp-password encrypted CISCO

Answer: B

#### NEW QUESTION 110

Refer to the exhibit.

```
Router A
router isis L2_isis
 net 47.0000.0000.0000.0001.00
 metric-style wide
!
interface Ethernet0/0
 ip address 172.16.0.1 255.255.255.252
 ip router isis L2_isis

Router B
router isis L1_isis
 net 47.0001.0000.0000.0001.00
 is-type level-1-2
 metric-style wide
!
interface Ethernet0/1
 ip address 172.16.0.2 255.255.255.252
 ip router isis L1_isis
!
interface Ethernet0/2
 ip address 172.16.0.10 255.255.255.252
 ip router isis L1_isis

Router C
router isis L1_isis
 net 47.0002.0000.0000.0001.00
 is-type level-1
 metric-style wide
!
interface Ethernet0/2
 ip address 172.16.0.9 255.255.255.252
 ip router isis L1_isis
```

A network engineer is asked to verify a multiarea IP IS-IS configuration before implementing it. Which statement is true?

- A. IS-type Level 1 must be configured on router B.
- B. Area addresses should be common.
- C. Wide metrics should be used only for router A.
- D. The system ID should be unique.

Answer: B

#### NEW QUESTION 115

Which two mandatory tasks must an IS-IS NSF-capable router perform for RP switchover? (Choose two.)

- A. Relearn the available IS-IS neighbors.
- B. Reacquire the contents of the LSD.
- C. Reset peering with the available IS-IS neighbors.
- D. Keep the existing contents of the LSD.
- E. Rediscover DIS for each link segment.

Answer: AB

#### NEW QUESTION 119

There are how many IS-IS area(s) defined in this network Scenario?

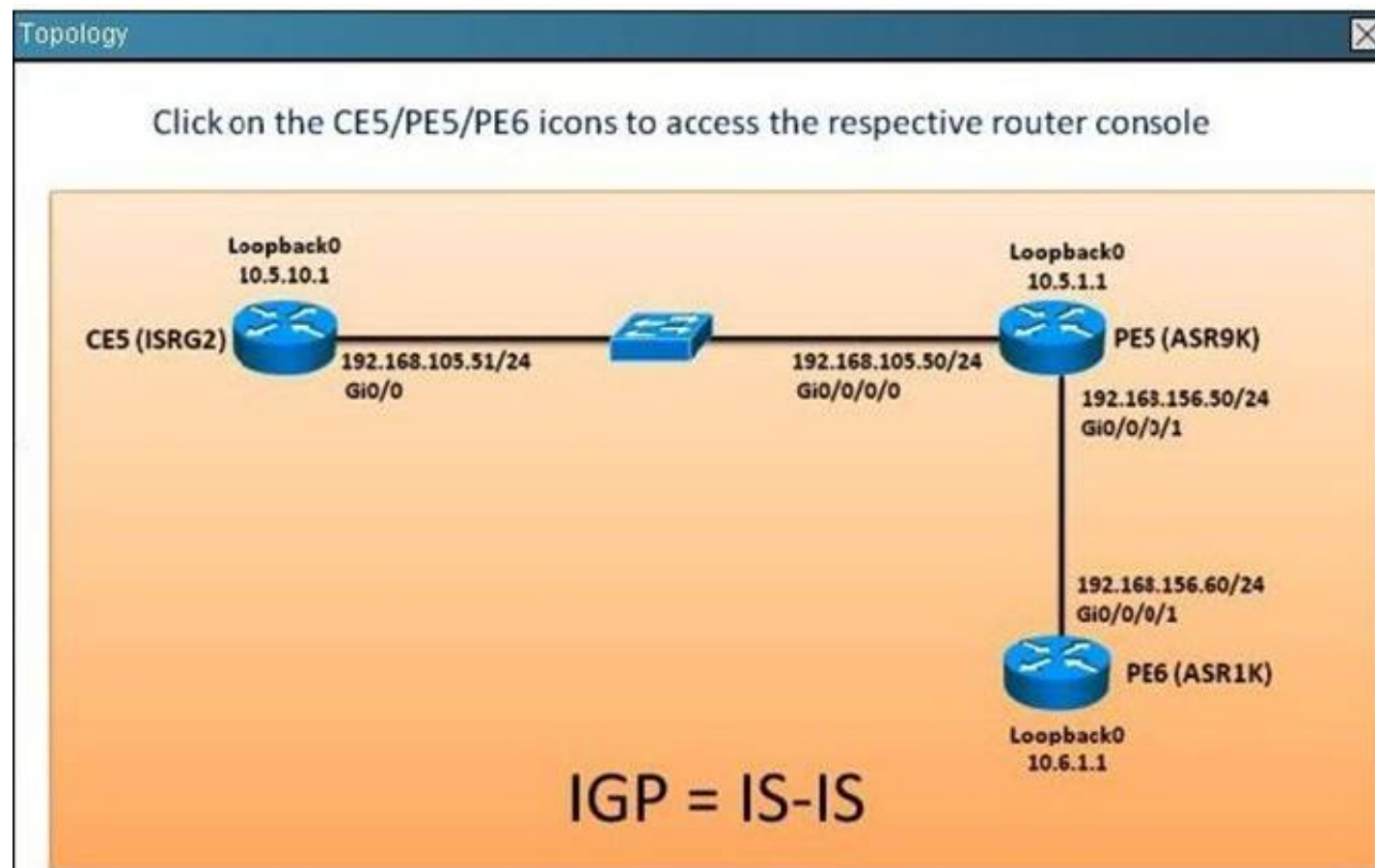
**Instructions**

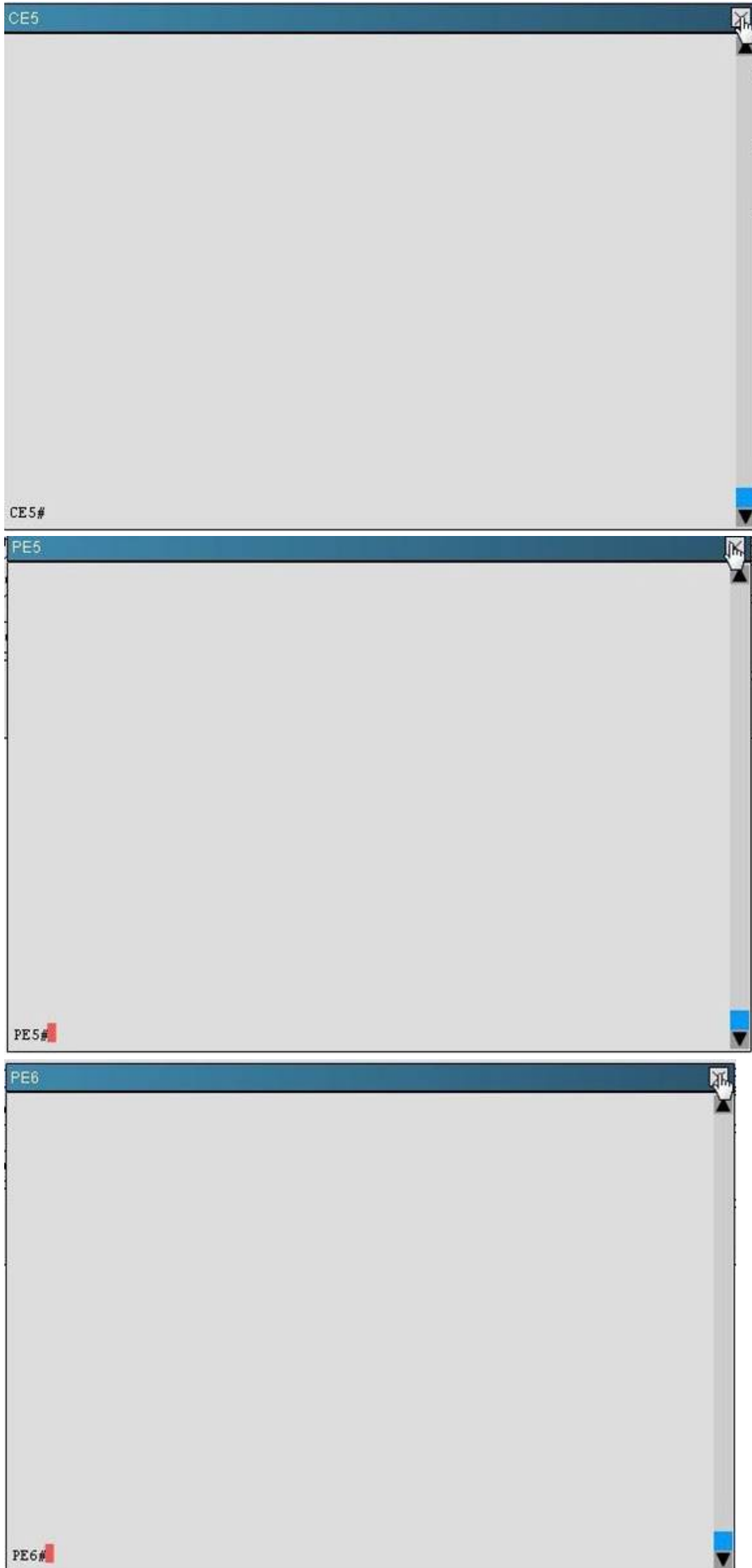
- Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.
- From the network topology diagram, click on each of the router icon to gain access to the console of each router.
- No console or enable passwords are required.
- There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.
- Not all the CLI commands or commands options are supported or required for this simulation.
- For example, the show running-config and the ping commands are **NOT** supported in this simulation.
- All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

**Scenario**

Referring to the network topology diagram shown in the exhibit, use the proper CLI commands on the CE5, PE5 and PE6 routers and interpret the supported CLI commands outputs to answer the four multiple choice questions.

Note: The CE5 router is an IOS router, the PE5 router is an IOS-XR router, and the PE6 router is an IOS-XE router.





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

**Answer: C**



NEW QUESTION 122

When configuring IPv4 and IPv6 IS-IS routing on Cisco IOS XR routers, which three statements are correct? (Choose three.)

- A. By default, a single SPF is used for both IPv4 and IPv6, so the IPv4 and IPv6 topology should be the same.
- B. By default, the IS-IS router type is Level 1 and Level 2.
- C. All IS-IS routers within the same IS-IS area must be configured with the same IS-IS routing process instance ID.
- D. By default, metric-style narrow is used.
- E. By default, the IS-IS interface circuit type is Level 1 and Level 2.
- F. The area IS-IS address-family configuration command is used to specify the IS-IS area address.

Answer: BDE

**Explanation:** `is-type {level-1 | level-1-2 | level-2-only}`

**Example:**  
RP/0/RP0/CPU0:router(config-isis)# is-type level-2-only

(Optional) Configures the system type (area or backbone router).

- By default, every IS-IS instance acts as a **level-1-2** router.
- The **level-1** keyword configures the software to perform **Level 1** (intra-area) routing only. Only **Level 1** adjacencies are established. The software learns about destinations inside its area only. Any packets containing destinations outside the area are sent to the nearest **level-1-2** router in the area.
- The **level-2-only** keyword configures the software to perform **Level 2** (backbone) routing only and the router establishes only **Level 2** adjacencies, either with other **Level 2-only** routers or with **level-1-2** routers.
- The **level-1-2** keyword configures the software to perform both **Level 1** and **Level 2** routing. Both **Level 1** and **Level 2** adjacencies are established. The router acts as a border router between the **Level 2** backbone and its **Level 1** area.

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The default metric style for single topology is narrow metrics. However, you can use either wide metrics or narrow metrics. How to configure them depends upon how single-topology is configured. If both IPv4 and IPv6 are enabled and single-topology is configured, the metric style is configured in the address-family ipv4 stanza. You may configure the metric style in the address-family ipv6 stanza, but it will be ignored in this case. If IPv6 only is enabled and single topology is configured, then the metric style is configured in the address-family ipv6 stanza.

`circuit-type {level-1 | level-2-only | level-1-2}`

**Example:**  
RP/0/RP0/CPU0:router(config-isis-if)# circuit-type level-1-2

(Optional) Configures the type of adjacency.

- The default **circuit** type is the configured system type (configured through the **is-type** command).
- Typically, **circuit** type needs to be configured when the router is configured only **level-1-2** and you want to constrain an interface to form only **level-1** or **level-2-only** adjacencies.

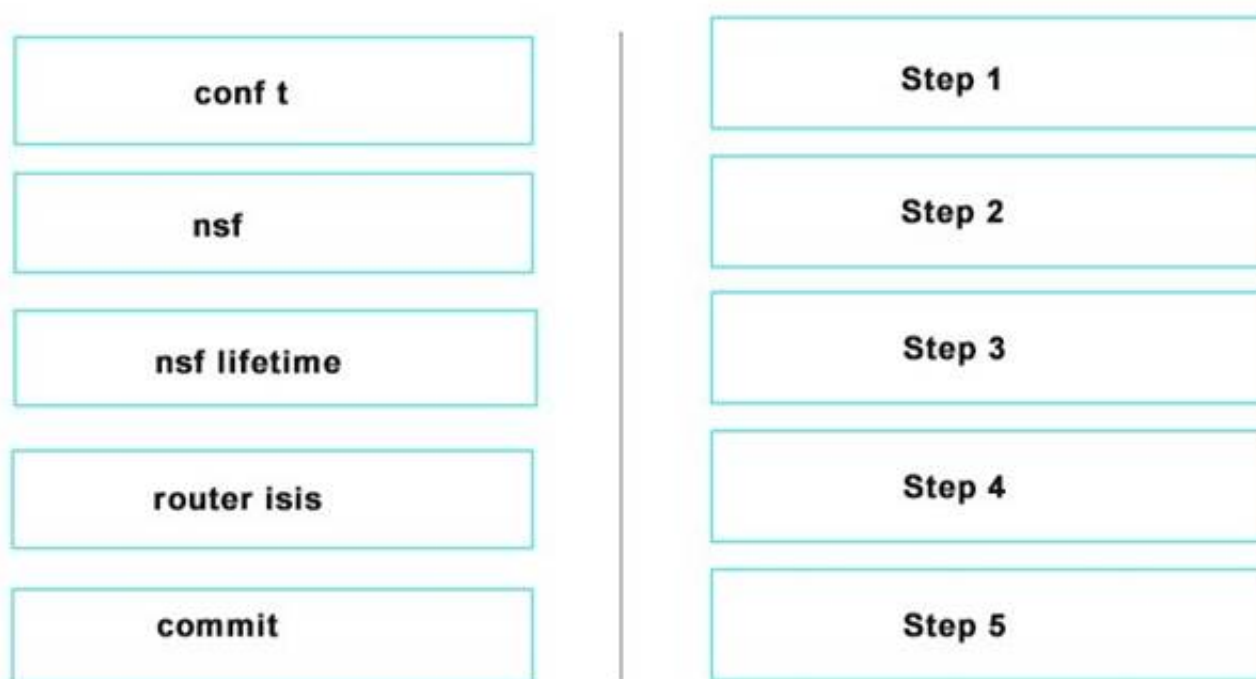
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NEW QUESTION 125

DRAG DROP

Drag and drop the configuration steps on the left into the correct order on the right for nonstop forwarding for IS-IS on Cisco IOS XR.





**Answer:**

**Explanation:** Step 1 – conf t Step 2 – router isis Step 3 - nsf  
 Step 4 – nsf lifetime Step 5 - commit

#### NEW QUESTION 129

What are three common problems that can cause a BGP neighbor state to toggle between the idle state and the active state? (Choose three.)

- A. BGP network command misconfiguration
- B. route policy misconfiguration
- C. AS number misconfiguration
- D. route map misconfiguration
- E. BGP neighbor peering to wrong IP address
- F. IGP routing problem: not able to reach the source IP address of the BGP open packet

**Answer:** CEF

#### NEW QUESTION 132

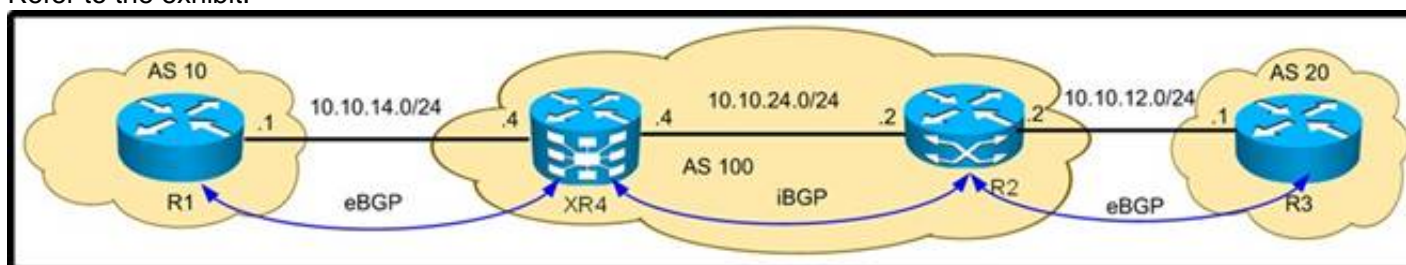
A static default route has been inserted into the configuration of a Cisco IOS XE router. Which option redistributes the route into the local OSPF process?

- A. router ospf 1 redistribute static subnets
- B. router ospf 1 redistribute static
- C. router ospf 1 redistribute static subnets default-information originate always
- D. router ospf 1 network 0.0.0.0 area 0 redistribute static subnets

**Answer:** C

#### NEW QUESTION 137

Refer to the exhibit.



XR4 must be configured to advertise only AS 100 local subnets to AS 10. Which configuration on XR4 achieves this goal?

- A. as-path-set LOCAL ios-regex ^\$route-policy ADVif as-path in LOCAL then pass endif
- B. as-path-set LOCAL ios-regex '^100\$' route-policy ADVif as-path in LOCAL then pass endif
- C. as-path-set LOCAL ios-regex '^\$'route-policy ADVif as-path in LOCAL then pass endif
- D. as-path-set LOCAL ios-regex ^100\$ route-policy ADVif as-path in LOCAL then pass endif

**Answer:** C

#### NEW QUESTION 142

Which option is a mechanism that can be implemented between two eBGP peers to communicate the routes each peer needs from the other?

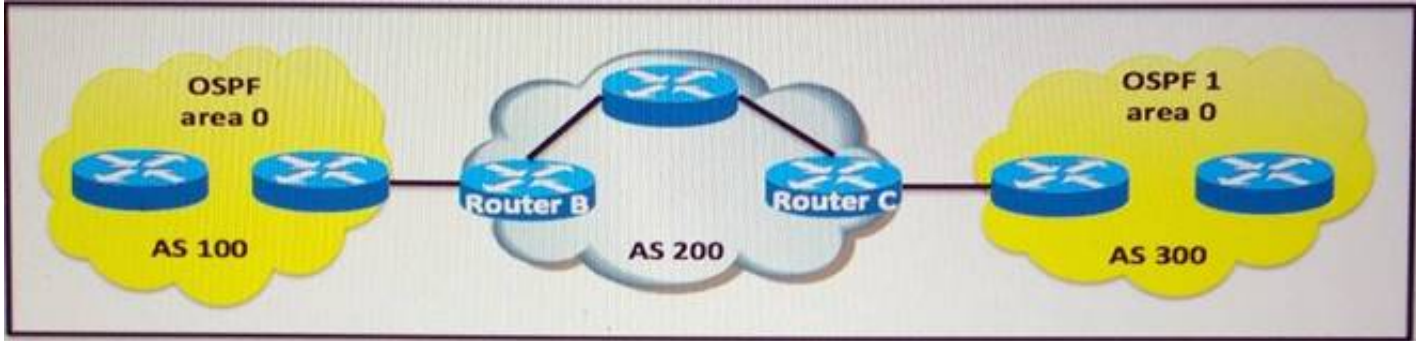
- A. ORF
- B. ACL

- C. prefix list
- D. route map

Answer: A

NEW QUESTION 146

Refer to the exhibit.



In AS 200, routers B and C are the exit points towards AS 100 and AS 300, respectively. Router B is running Cisco IOS XR and Router C is running Cisco IOS XE. OSPF is used as PE-CE routing protocol. In order to ensure proper reachability between AS 100 and AS 300, which two sets of configuration should an engineer apply? (Choose two.)

- A. Router B:router ospf 200redistribute bgp 200 subnets!router bgp 200address-family ipv4 unicastredistribute ospf 200
- B. Router B:router ospf 200redistribute bgp 200 subnets!router bgp 200address-family ipv4 vrf AS 100-AS300redistribute ospf 200
- C. Router B:router ospf 200 vrf AS 100-AS300redistribute bgp 200!router bgp 200vrf AS 100-AS300address-family ipv4 unicastredistribute ospf 200
- D. Router C:router ospf 200redistribute bgp 200!router bgp 200address-family ipv4redistribute ospf 200 subnet
- E. Router C:router ospf 200 vrf AS100-AS300redistribute bgp 200 subnets!router bgp 200vrf AS 100-AS300address-family ipv4unicastredistribute ospf 200
- F. Router C:router ospf 200 vrf AS100-AS300redistribute bgp 200 subnets!router bgp 200address-family ipv4 vrf AS 100-AS300redistribute ospf 200

Answer: AD

NEW QUESTION 148

Refer to the OSPF command exhibit.

```
RP/0/RSP0/CPU0:P1(config-ospf)#area 1 stub no-summary
```

Which effect does the no-summary command option have?

- A. It will cause area 1 to be able to receive non-summarized inter-area routes.
- B. It will cause area 1 to not receive any inter-area routes and will use a default route to reach networks in other areas.
- C. It will cause area 1 to not receive any external routes and will use a default route to reach the external networks.
- D. It will convert the NSSA area into a NSSA totally stubby area.
- E. It will convert the stubby area into a NSSA.
- F. It will disable OSPF auto-summary.

Answer: B

**Explanation:** To define an area as a stub area, use the **area stub** command in router configuration mode. To disable this function, use the **no** form of this command.

```
area area-id stub [no-summary]
no area area-id stub
no area area-id
```

Syntax Description

|            |   |
|------------|---|
| area-id    | Identifier for the stub area; either a decimal value or an IP address.                  |
| no-summary | (Optional) Prevents an ABR from sending summary link advertisements into the stub area. |

Defaults

No stub area is defined.

Command Modes

Router configuration

Command History

| Release | Modification                 |
|---------|------------------------------|
| 10.0    | This command was introduced. |

Usage Guidelines

You must configure the **area stub** command on all routers and access servers in the stub area. Use the **area router** configuration command with the **default-cost** option to specify the cost of a default internal router sent into a stub area by an area border router.

There are two stub area router configuration commands: the **stub** and **default-cost** options of the **area** router configuration command. In all routers attached to the stub area, the area should be configured as a stub area using the **stub** option of the **area** command. Use the **default-cost** option only on an ABR attached to the stub area. The **default-cost** option provides the metric for the summary default route generated by the area border router into the stub area.

To further reduce the number of link state advertisements (LSAs) sent into a stub area, you can configure **no-summary** on the ABR to prevent it from sending summary LSAs (LSA type 3) into the stub area.

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### NEW QUESTION 149

Which router has the su 10.5.10.0/24 [20/115] entry pointing to Null0 in its routing table and why? (Choose two.)

#### Instructions

- Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.
- From the network topology diagram, click on each of the router icon to gain access to the console of each router.
- No console or enable passwords are required.
- There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.
- Not all the CLI commands or commands options are supported or required for this simulation.
- For example, the show running-config and the ping commands are **NOT** supported in this simulation.
- All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

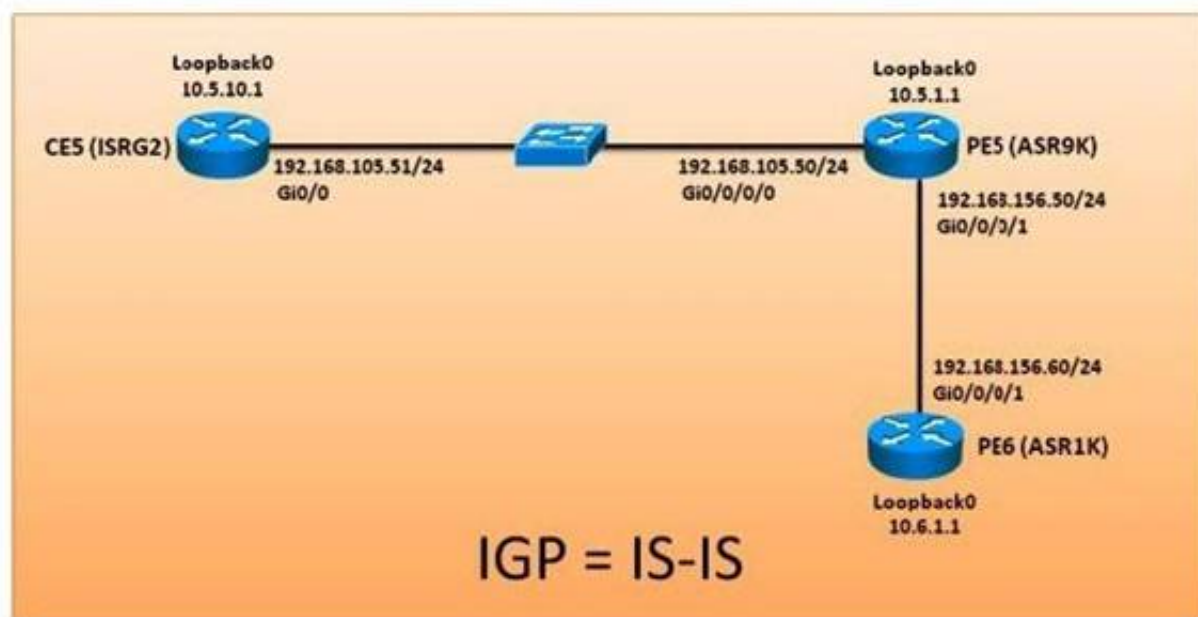
#### Scenario

Referring to the network topology diagram shown in the exhibit, use the proper CLI commands on the CE5, PE5 and PE6 routers and interpret the supported CLI commands outputs to answer the four multiple choice questions.

Note: The CE5 router is an IOS router, the PE5 router is an IOS-XR router, and the PE6 router is an IOS-XE router.

#### Topology

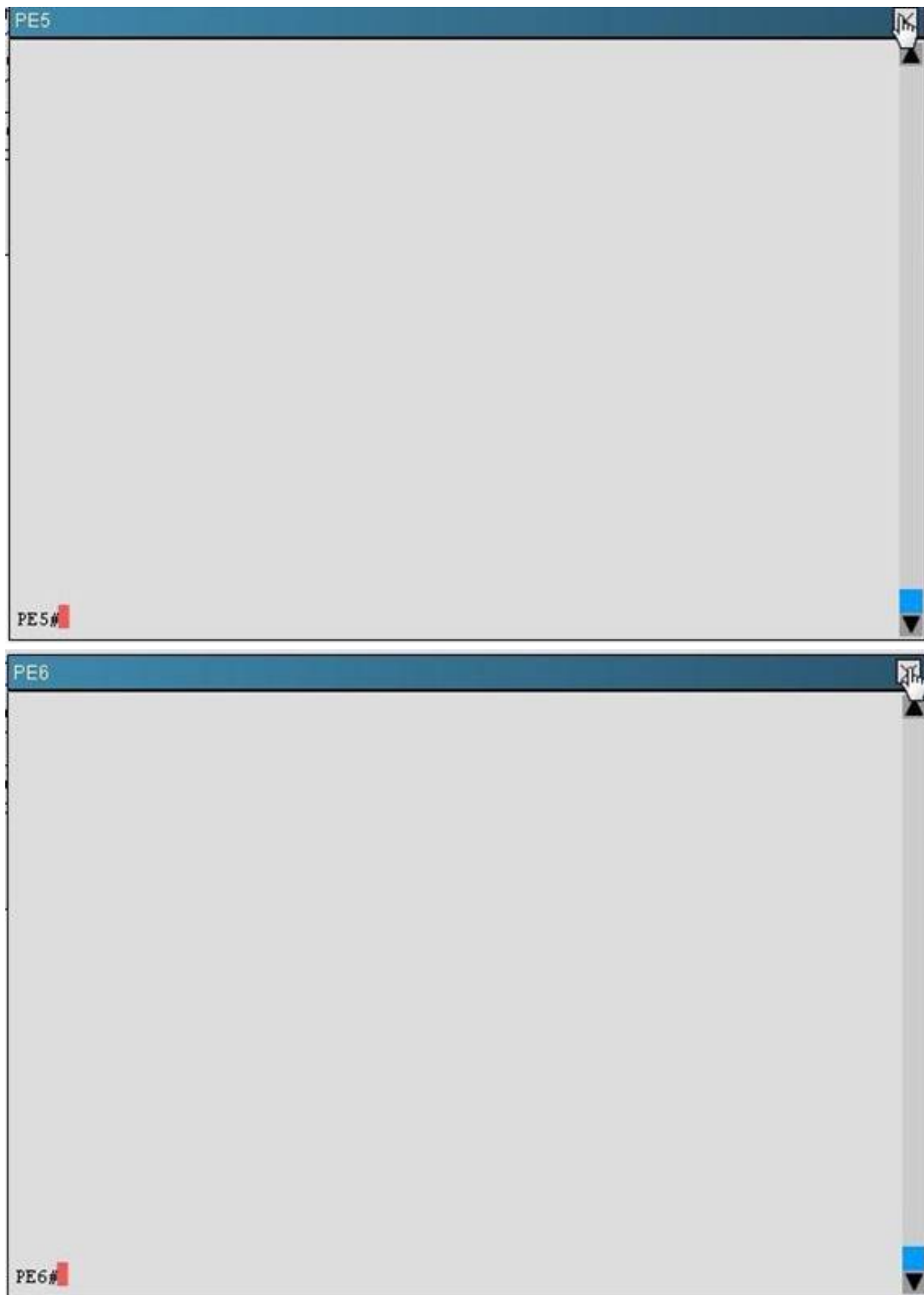
Click on the CE5/PE5/PE6 icons to access the respective router console



#### CE5

CE5#





- A. CE5
- B. PE5
- C. PE6
- D. The router is summarizing 10.5.10.1/32 into 10.5.10.0/24
- E. The router is suppressing the 10.5.10.0/24 route
- F. The L2/L1 IS-IS router is blocking the 10.5.10.0/24 interarea route to the L1-only router

**Answer:** DF

**Explanation:** # show clns route

#### NEW QUESTION 150

Refer to the route policies exhibit.



```
route-policy one
end-policy
!
route-policy two
pass
end-policy
!
route-policy three
drop
end-policy
!
route-policy four
set weight 100
end-policy
!
route-policy five
pass
drop
pass
end-policy
!
```

Which five route policies will cause the routes to be dropped or passed? (Choose five)

- A. route-policy one will cause the routes to be dropped.
- B. route-policy two will cause the routes to be dropped.
- C. route-policy three will cause the routes to be dropped.
- D. route-policy four will cause the routes to be dropped.
- E. route-policy five will cause the routes to be dropped.
- F. route-policy one will cause the routes to be passed.
- G. route-policy two will cause the routes to be passed.
- H. route-policy three will cause the routes to be passed.
- I. route-policy four will cause the routes to be passed.
- J. route-policy five will cause the routes to be passed.

**Answer:** ACEGI

#### NEW QUESTION 153

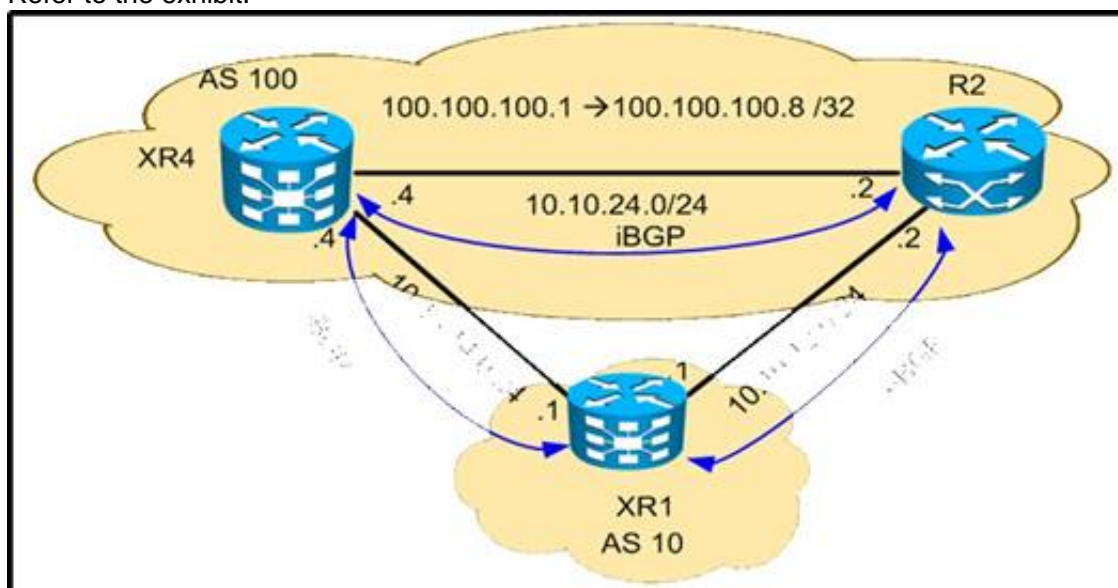
Which two OSPF network scenarios require OSPF virtual link configuration? (Choose two.)

- A. to connect an OSPF non-backbone area to area 0 through another non-backbone area
- B. to connect an NSSA area to an external routing domain
- C. to connect two parts of a partitioned backbone area through a non-backbone area
- D. to enable route leaking from Level 2 into Level 1
- E. to enable route leaking from Level 1 into Level 2
- F. to enable OSPF traffic engineering

**Answer:** AC

#### NEW QUESTION 157

Refer to the exhibit.



XR1 must have XR4 as the primary exit point for only the first three subnets received from AS 100 and may not impact the rest of the subnets. Which configuration on XR1 is correct?

- A. prefix-set PREFER 100.100.100.0/30 le 32 route-policy LPif destination in PREFER then set local-preference 200 endif
- B. route-policy LPif destination in (100.100.100.0/30 le 32) then set local- preference 200 else pass endif
- C. prefix-set PREFER 100.100.100.0/29 le 32 route-policy LPif destination in PREFER then set local-preference 200 else pass endif
- D. route-policy LPif destination in (100.100.100.0/29 le 32) then set local preference 200 else set local-preference 100 endif

**Answer:** B

#### NEW QUESTION 162

Which OSPF feature allows a router with redundant route processors to maintain its OSPF state and adjacencies across planned and unplanned RP switchovers and does this by checkpointing state information from OSPF on the active RP to the standby RP? This feature does not require the OSPF neighbor to support graceful restart.

- A. NSR
- B. NSF
- C. BFD
- D. MTR
- E. SDR

**Answer:** A

**Explanation:** Continuous Forwarding

An important aspect of high availability is maintenance of traffic forwarding, even in the case of control-plane switchovers. Cisco IOS XR Software has several built-in features that can provide continuous forwarding, including RSP stateful switchover (SSO), Nonstop Forwarding (NSF), Graceful Restart, and NSR.

NSF: Cisco IOS XR Software supports forwarding without traffic loss during a brief outage of the control plane through signaling and routing protocol implementations for Graceful Restart extensions as standardized by the IETF. In addition to standards compliance, this implementation has been compatibility tested with Cisco IOS Software and third-party operating systems.

Graceful Restart: This control-plane mechanism ensures high availability by allowing detection and recovery from failure conditions while preserving NSF services. Graceful Restart is a way to recover from signaling and control-plane failures without affecting the forwarding plane. Cisco IOS XR Software uses this feature and a combination of check pointing, mirroring, RSP redundancy, and other system resiliency features to recover prior to timeout and avoid service downtime as a result of network reconvergence.

NSR: This feature allows for the forwarding of data packets to continue along known routes while the routing protocol information is being refreshed following a processor switchover.

NSR maintains protocol sessions and state information across SSO functions for services such as Multiprotocol Label Switching (MPLS) VPN. TCP connections and the routing protocol sessions are migrated from the active RSP to the standby RSP after the RSP failover without letting the peers know about the failover.

The sessions terminate locally on the failed RSP, and the protocols running on the standby RSP reestablish the sessions after the standby RSP goes active, without the peer detecting the change. You can also use NSR with Graceful Restart to protect the routing control plane during switchovers. The Cisco IOS XR Operating System provides system resiliency through a comprehensive set of high-availability features including modularity, process restart, fault handling, continuous forwarding, and upgradability.

#### NEW QUESTION 166

What is recursive lookup in BGP and how does it work?

- A. The router looks up the EBGp route and the EBGp next hop to reach a destination in the remote A
- B. Then the router looks up the route to reach the EBGp next hop using the IBGP.
- C. The router looks up the IBGP route and the IBGP next hop to reach a destination in the remote A
- D. Then the router looks up the route to reach the IBGP next hop using the EBGp.
- E. The router looks up the BGP route and the BGP next hop to reach a destination in the remote A
- F. Then the router looks up the route to reach the BGP next hop using the IGP.
- G. The router looks up the route and the next hop to reach a destination in the remote AS using the IG
- H. Then the router looks up the route to reach the next hop using BGP.
- I. The router perform three routing lookups to determine the route to reach a destination in the remote A
- J. The first lookup is done using EBGp, the second lookup is done using IBGP, and the third lookup is done using the IGP.

**Answer:** C

**Explanation:** A few different approaches are available to deal with iBGP and synchronization. We may turn on the synchronization option on our routers and wait for the IGP to have a route for the destination before it's advertised to peers. Another option is to simply use a full mesh, so that iBGP convergence isn't an issue. Clearly that isn't going to happen when a network's core needs to scale: it will implement something like reflectors that cause iBGP's full mesh to be broken.

The real alternative, if you don't enable synchronization, is to use route recursion. A recursive route lookup uses the BGP next-hop attribute to actually make a different route lookup. The IGP can use the destination network instead of the AS-path to determine where it gets sent. Even if the iBGP hasn't converged, the routers will still know how to get to that network, since it will exist in the router it was advertised from, who will know the next-hop.

#### NEW QUESTION 167

A service provider is about to purchase more IPv4 address space. Which organization can facilitate this purchase?

- A. APNIC
- B. IETF
- C. USANOG
- D. IEEE
- E. NANOG

**Answer:** A

#### NEW QUESTION 171

DRAG DROP

| Drag the regular expression special character used in AS-Path access-list configuration on the left to match the correct description on the right. |   |
|--|---|
| ^  | Matches the end of the AS path string   |
| \$   | Matches the start of the AS path string |
| .  | Matches any single character            |
|  | Matches any delimiter                   |

**Answer:**

**Explanation:** Matches the end of the AS Path String ---\$ Matches the Start of the AS Path String ----^  
Matches any single character --- . Matched any delimiter ---- -

#### NEW QUESTION 175

Refer to the exhibit.

```
route-policy OSPFintoISIS
if tag eq xxx then
  drop
else
  set tag yyy
endif
end-policy
```

Based on the Cisco IOS XR route policy configuration, when redistributing OSPF routes into IS-IS, to which of the following does the "tag" value correspond?

- A. The tag value represents the OSPF metric.
- B. The tag value represents the IS-IS metric.
- C. The tag value identifies a route or set of routes.
- D. The tag value is used to match whether the IS-IS route is an external or internal IS-IS route.
- E. The tag value represents the administrative distance.

**Answer:** C

#### NEW QUESTION 178

When using the Cisco IOS XR route policy language to define a logical if-then-else condition, which logical operator has the highest precedence?

- A. AND
- B. OR
- C. NOT
- D. IS
- E. IN

**Answer:** C

**Explanation:** [http://www.cisco.com/en/US/docs/ios\\_xr\\_sw/iosxr\\_r3.0/routing/configuration/guide/rc3rpl.html](http://www.cisco.com/en/US/docs/ios_xr_sw/iosxr_r3.0/routing/configuration/guide/rc3rpl.html)

##### Boolean Operator Precedence

Boolean expressions are evaluated in order of operator precedence, from left to right. The highest precedence operator is not, followed by and, and then or. The following expression:

```
med eq 10 and not destination in (10.1.3.0/24) or community matches-any ([10..25]:35)
```

if fully parenthesized to display the order of evaluation would look like this:

```
(med eq 10 and (not destination in (10.1.3.0/24))) or community matches-any ([10..25]:35)
```

The inner not applies only to the destination test; the and combines the result of the not expression with the Multi Exit Discriminator (MED) test; and the or combines that result with the community test. If the order of operations are rearranged:

```
not med eq 10 and destination in (10.1.3.0/24) or community matches-any ([10..25]:35)
```

then the expression, fully parenthesized, would look like the following:

```
((not med eq 10) and destination in (10.1.3.0/24)) or community matches-any ([10..25]:35)
```

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#### NEW QUESTION 180

DRAG DROP

Drag and drop the terms on the left onto the appropriate definition on the right.



|            |  |
|------------|--|
| NSP        | Is a network that solely purchases transit from other networks to reach the Internet                         |
| Tier 1 ISP | peers with some networks, but purchases IP transit or pays settlements to reach some portion of the Internet |
| Tier 2 ISP | peers with other ISPs of the same Tier level to form the backbone of the Internet                            |
| Tier 3 ISP | provides or sells access and bandwidth into its backbone infrastructure and network access points            |
| NAP        | interconnects network service providers  |

**Answer:**

**Explanation:** Is a network that solely purchases transit from other networks to reach the Internet – Tier 3 ISP  
 Peers with some networks, but purchases IP transit or pays settlements to reach some portion of the Internet– Tier 2 ISP  
 Peers with other ISPs of the same Tier level to form the backbone of the Internet – Tier 1 ISP  
 Provides or sells access and bandwidth into its backbone infrastructure and network access points – NSP  
 Interconnects network service providers – NAP

#### NEW QUESTION 182

Refer to the exhibit.

| R2#show ip bgp |            |               |
|----------------|------------|---------------|
| Network        | Next Hop   | Path          |
| *> 1.1.1.1/32  | 10.10.12.1 | 100 i         |
| *> 2.2.2.2/32  | 0.0.0.0    | i             |
| *> 3.3.3.3/32  | 10.10.12.1 | 100 300 i     |
| *> 4.4.4.4/32  | 10.10.12.1 | 100 300 400 i |

R2 wants to filter out only routes originated from AS 300. Which AS path access list should be used?

- A. ip as-path access-list 1 deny \_300\$
- B. ip as-path access-list 1 deny ^300\_
- C. ip as-path access-list 1 deny ^300\$
- D. ip as-path access-list 1 deny \_300\_

**Answer: C**

#### NEW QUESTION 186

In comparing IS-IS with OSPF, a Level-1-2 IS-IS router is similar to which kind of OSPF router?

- A. ASBR on a normal OSPF area
- B. ASBR on NSSA
- C. ABR on totally stubby OSPF area
- D. ABR on stubby OSPF area
- E. ABR on a normal OSPF area

**Answer: C**

#### NEW QUESTION 191

A static default route has been inserted into the configuration of a Cisco IOS XE router. Which option advertises the route into the OSPF domain?

- A. router ospf 1 network 0.0.0.0 area 0 redistribute static subnets
- B. router ospf 1 redistribute static
- C. router ospf 1 redistribute static subnets
- D. router ospf 1 default-information originate

**Answer: D**

#### NEW QUESTION 193

Which statement best describes the function of a BGP af-group?

- A. Allows grouping and reuse of session-templates to simplify address-family configuration tasks.
- B. Allows common address family-specific configuration to be grouped together to simplify configuration tasks.
- C. Allows common address family-independant configuration to be grouped together to simplify configuration tasks.
- D. Allows grouping and reuse of neighbor-templates to simplify address-family configuration tasks.



**Answer:** B

#### NEW QUESTION 196

Which of the following is used by an IS-IS router to detect other IS-IS neighbor routers and to form adjacencies?

- A. ESH
- B. ISH
- C. IIH
- D. PSNP
- E. CSNP

**Answer:** C

**Explanation:** ISIS actually features three different hello types

An ES Hello (ESH) is sent by all End Systems, and all IS devices listen for this Hello

An IS Hello (ISH) announces the presence of an IS - An IS Hello is sent by all IS devices, and End Systems listen for these hellos Finally, an IS-to-IS Hello (IIH) is used by an IS to discover other ISes and to form adjacencies with them A router will send an IIH to another router on the link to form or maintain an adjacency, but it will still send an ISH as well in case there are end systems located on that segment

#### NEW QUESTION 201

Which BGP attribute is a set of generic tags that can be used to signal various routing policies between BGP routers?

- A. AS path
- B. MED
- C. weight
- D. communities
- E. route tags

**Answer:** D

**Explanation:** [http://www.cisco.com/en/US/tech/tk365/technologies\\_configuration\\_example09186a00801\\_475b2.shtml](http://www.cisco.com/en/US/tech/tk365/technologies_configuration_example09186a00801_475b2.shtml)

#### NEW QUESTION 204

Which configuration is used when matching a prefix-list <name> in a route map?

- A. match ip address prefix-list mylist
- B. match ip address mylist
- C. match ip next-hop mylist
- D. ip local-policy route-map mylist
- E. ip-policy route-map mylist

**Answer:** A

#### NEW QUESTION 209

A network engineer wants to test a path between any two points in the network for multicast traffic to identify congestion points in the network. Which command in a Cisco IOS XE router shows multicast traffic drops?

- A. mstat
- B. mtrace
- C. mrinfo
- D. ping

**Answer:** A

#### NEW QUESTION 213

An engineer checks the logs in a PE with several customers and sees this output.

\*Nov 3 21:44:54:219: %TCP-6-BADAUTH: No MD5 digest from 192.168.1.2(179) to 192.168.1.1(15926) (RST) tableid -0.

Which routing protocol is reporting the issue?

- A. RIPvng
- B. BGP
- C. OSPF
- D. EIGRP

**Answer:** B

#### NEW QUESTION 216

What are two purposes of the BGP scan-time command? (Choose two.)

- A. to tune the BGP process which walks the BGP table and confirms the reachability of next hops
- B. to allow faster detection of downed BGP peers
- C. to improve BGP convergence time
- D. to tune the BGP update interval
- E. to decrease the effects of unstable routes by increasing the route suppression time

**Answer:** AC

**Explanation:** <http://www.networkers-online.com/blog/2008/12/bgp-performance-tunning-convergence-stability-scalabilityand-nsf-part-2/>

Background BGP scanner

It is responsible for BGP housekeeping by scanning both the BGP RIB and the IP RIB and cleaning and sorting things out.

BGP monitors the next hop of the installed routes to verify next-hop reachability and to select, install, and validate the BGP best path. By default, the BGP scanner polls the RIB for this information every 60 seconds.

During the 60 second time period between scan cycles, IGP instabilities or other network failures can cause temporarily black holes and routing loops.

NOTE With Cisco IOS the default timer is 60 seconds for the IPv4 address family and 15 seconds for the

VPNv4 address family in order to optimize the VPNs routing table convergence. This timer can be controlled via the following command:

Router(config-router)#bgp scan-time <5-60>

#### NEW QUESTION 217

An engineer is deciding what BFD implementation would be most appropriate for a legacy and unstable Packet Over SONET link. Which solution should be suggested?

- A. aggressive timers with the lowest possible multiplier
- B. slow timers with the lowest possible multiplier
- C. aggressive timers with a very high multiplier
- D. averages of a sequence of ping test response times to the remote peer

**Answer:** A

#### NEW QUESTION 219

A Network Operation Center requires support to understand OSPFv3 neighborship operations. During a migration, two OSPFv3 routers became adjacent even though no common subnets were configured on the link interfaces. Which statement explains this problem?

- A. This problem is a bug in Cisco IOS XE, which requires a case to be open with Cisco TAC and an immediate Cisco IOS upgrade to avoid security breaches and rerouting attacks.
- B. IPv6 needs only the link-local address to form an OSPFv3 neighborship.
- C. The Network Operation Center Engineers did not notice a supernet configured on one end of the IPv6 link.
- D. The Network Operation Center Engineers did not add the secondary keyword after the IPv6 address, which causes the router to overwrite the main address.

**Answer:** B

#### NEW QUESTION 221

What are two characteristics of the multihomed customers to service providers connection option? (Choose two.)

- A. Multihomed customers must use a private AS number.
- B. The traffic load can be shared for different destination networks between service providers.
- C. Multihomed customers must receive a full routing table from the service providers.
- D. The routing methodology must be capable of reacting to dynamic change
- E. BGP is used to achieve this flexibility.
- F. Multihomed customers must use a provider-assigned address space.

**Answer:** BD

#### NEW QUESTION 222

What are two ways to advertise networks into BGP? (Choose two.)

- A. using the neighbor router BGP command
- B. using a route policy in Cisco IOS XR Software or using a route map in Cisco IOS Software or Cisco IOS XE Software
- C. using route redistribution into BGP
- D. using the network router BGP command
- E. enabling an interface to run BGP using the interface router BGP command

**Answer:** CD

#### NEW QUESTION 224

Nonstop Forwarding works with the Stateful Switchover feature in Cisco IOS and IOS XR software. Which three restrictions for OSPF are true? (Choose three.)

- A. OSPF NSF for virtual links is not supported.
- B. OSPF NSF for virtual links is supported.
- C. OSPF NSF for sham links is not supported.
- D. OSPF NSF for sham links is supported.
- E. OSPF NSF supports NSF/SSO for IPv6 traffic only.
- F. OSPF NSF supports NSF/SSO for IPv4 traffic only.

**Answer:** ACF

#### NEW QUESTION 229

What is defined by using the Cisco IOS XR policy-global configuration command?

- A. the default BGP route policy
- B. global variables that can be referenced by any route policy
- C. the global default route policy

- D. hierarchical route policy
- E. nested route policy

**Answer:** B

**Explanation:** Global Configuration Mode Prompt: (config)

Enter global configuration mode from executive (EXEC) mode by using the configure command. Global configuration commands generally apply to the whole system rather than just one protocol or interface. You can enter all other configuration submodes listed in this section from global configuration mode.

RP/0/RP0/CPU0:router# configure RP/0/RP0/CPU0:router(config)#

Global Parameter Configuration Mode Prompt: (config-rpl-gl)

Enter global parameter configuration mode by using the policy-global command in global configuration mode.

In global parameter configuration mode, you can create or modify a global policy by entering successive commands and then terminating the configuration by entering the end- global command.

For example, to configure global parameters: RP/0/RP0/CPU0:router(config)# policy-global RP/0/RP0/CPU0:router(config-rp-gl)# glbpathtype ebgp

RP/0/RP0/CPU0:router(config-rp-gl)# glbtag 100 RP/0/RP0/CPU0:router(config-rp-gl)# end-global

#### NEW QUESTION 234

An EIGRP domain is redistributed into an OSPF NSSA area. On which router would this redistribution occur?

- A. stub border router
- B. summary router
- C. autonomous system boundary router
- D. backbone router

**Answer:** C

#### NEW QUESTION 239

Which option is a characteristic of intermediate systems on multiarea IS-IS?

- A. Level 2 contains routing information only for the local area.
- B. Level 2 contains routing information only for stub areas.
- C. Level 1 contains routing information only for the backbone area.
- D. Level 1 contains routing information onlyfor the local area.

**Answer:** D

#### NEW QUESTION 240

Which three statements are correct regarding the OSPF operations? line (Choose three.)

Instructions

Enter the proper CLI commands and analysis the outputs on the Cisco routers to answer the multiple-choice questions.

From the network topology diagram, click on each of the router icon to gain access to the console of each router.

No console or enable passwords are required.

There are four multiple-choice questions with this task. Be sure to answer all four questions before selecting the Next button.

Not all the CLI commands or commands options are supported or required for this simulation.

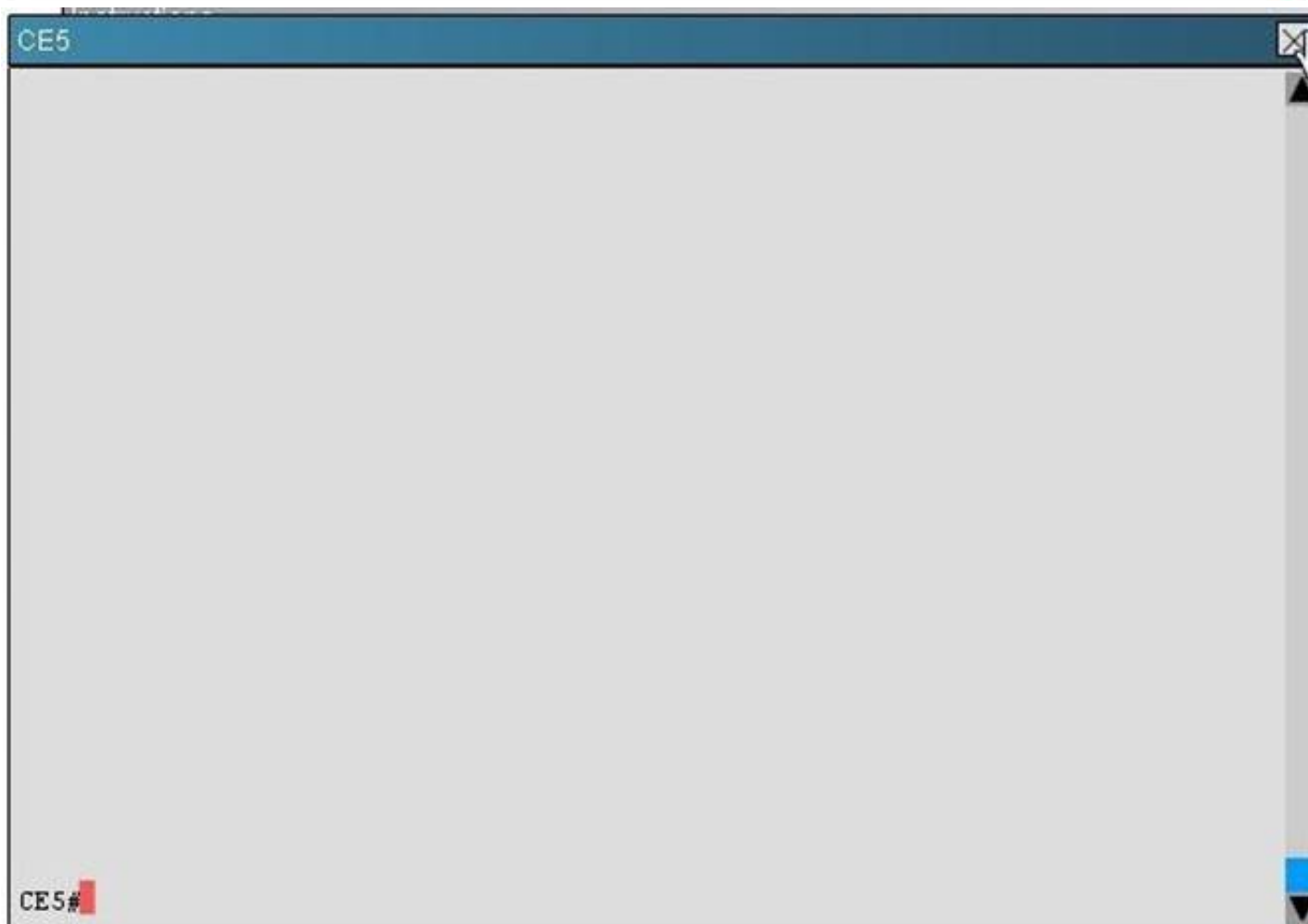
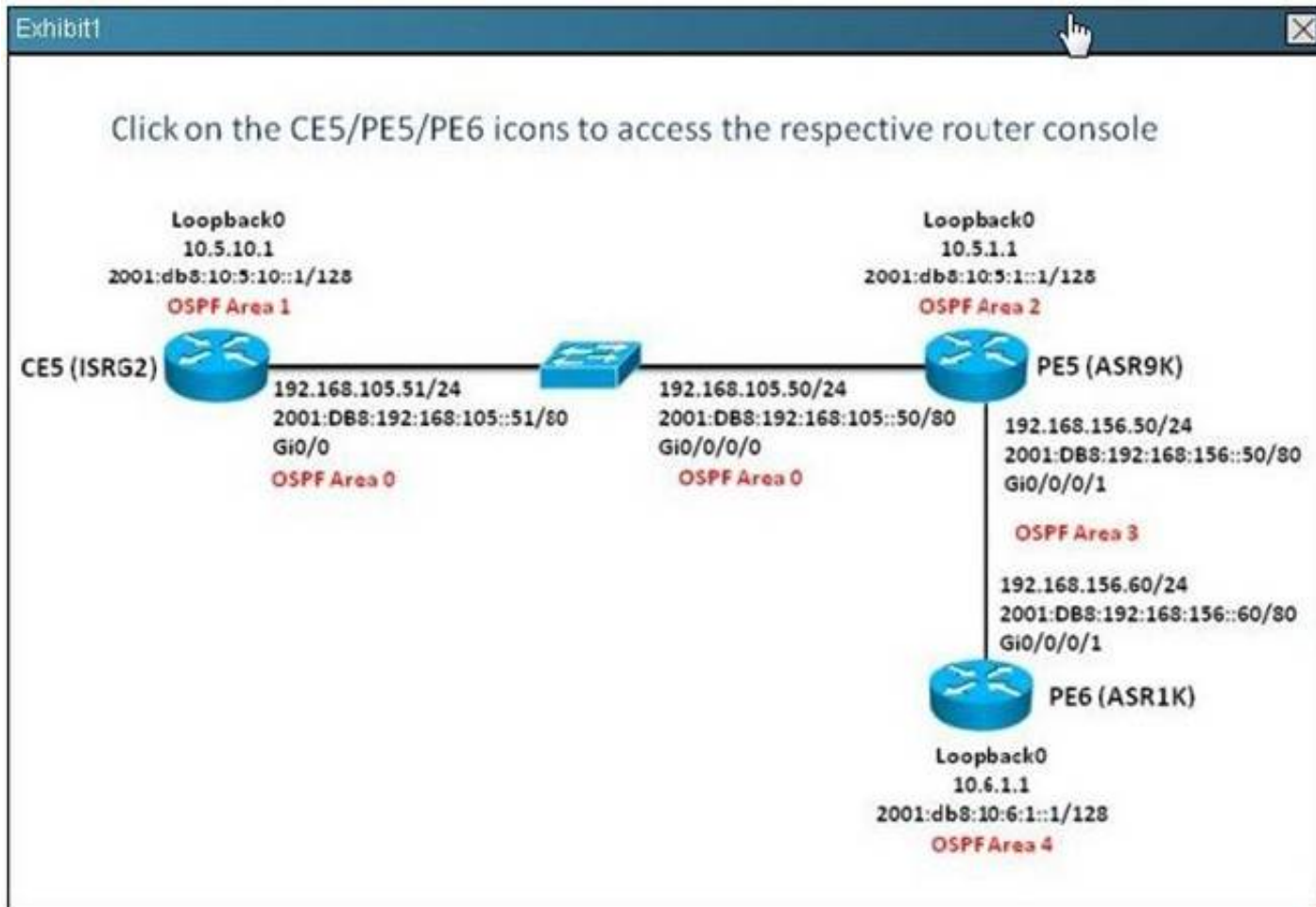
For example, the show running-config and the ping commands are **NOT** supported in this simulation.

All the devices in this simulation have been pre-configured and you are not required to enter in any configurations.

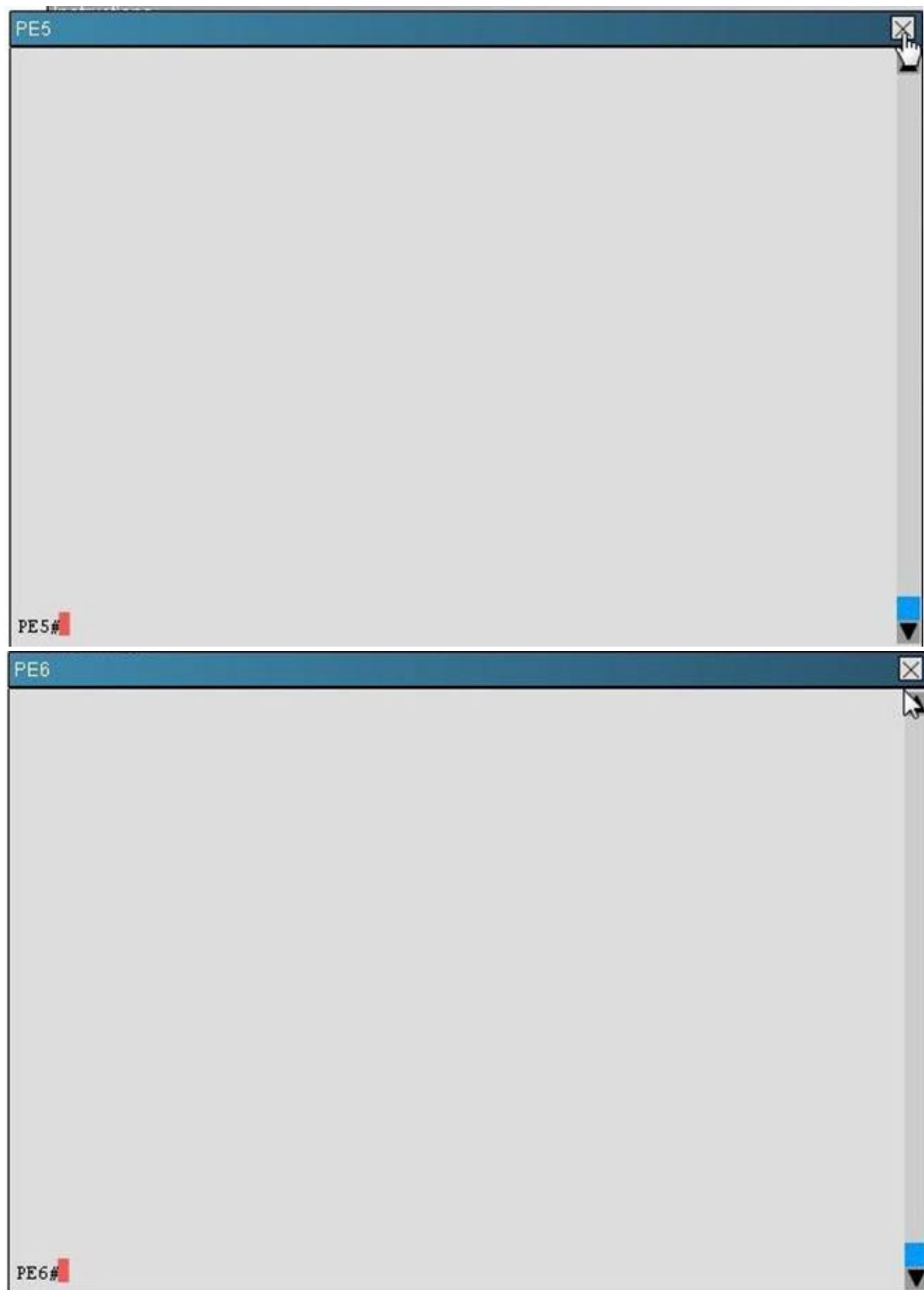
Scenario

Referring to the multiarea IPv4 and IPv6 OSPF network topology diagram shown in the exhibit, use the proper CLI commands on the CE5, PE5 and PE6 routers and interpret the supported CLI commands outputs to answer the four multiple choice questions.

Note: The CE5 router is an IOS router, the PE5 router is an IOS-XR router, and the PE6 router is an IOS-XE router.







- A. PE5 OSPFv2 and OSPFv3 router id is 10.5.1.1
- B. The OSPF virtual-link cost is 1
- C. Area 3 is a transit area
- D. Area 4 is using MD5 authentication
- E. Area 1 IPv4 and IPv6 networks are not reachable from PE6

**Answer:** CDE

**Explanation:** #show ip protocols

#show ip route ospf

#show ip ospf interfaces

#show ip ospf neighbors

#show ip ospf database

#show ip ospf border-routers

#show ip ospf

#show ip route

#show ip protocols

#### NEW QUESTION 242

Which two statements are true about an EBGp session or an IBGP session? (Choose two.)

- A. IBGP uses AS-Path to detect routing information loops within the AS.

- B. EBGp routes have a default Admin Distance of 20 and IBGP routes have a default Admin Distance of 200.
- C. No BGP attributes are changed in EBGp updates except for the next-hop attribute if next-hop-self is configured.
- D. Routes learned from an EBGp peer not advertised to another EBGp peer to prevent routing information loops.
- E. IBGP uses split horizon to prevent routing information loops; routes learned from an IBGP peer are not advertised to another IBGP peer.

**Answer:** BE

#### NEW QUESTION 243

What are two consequences of having constant link flaps, resulting in the OSPF neighbor adjacencies going up and down repeatedly? (Choose two.)

- A. routes getting into the "Stuck In Active" state
- B. constant flooding of LSAs
- C. OSPF route dampening to occur
- D. many SPF recalculations
- E. routing loops may temporarily be introduced into the network

**Answer:** BD

#### NEW QUESTION 248

Which high-availability routing feature requires the neighbor router to support the graceful restart capability?

- A. BFD
- B. NSR
- C. NSF
- D. MTR

**Answer:** C

**Explanation:** On Cisco IOS XR software, NSF minimizes the amount of time a network is unavailable to its users following a route processor (RP) failover. The main objective of NSF is to continue forwarding IP packets and perform a graceful restart following an RP failover.

When a router restarts, all routing peers of that device usually detect that the device went down and then came back up. This transition results in what is called a routing flap, which could spread across multiple routing domains. Routing flaps caused by routing restarts create routing instabilities, which are detrimental to the overall network performance. NSF helps to suppress routing flaps in NSF-aware devices, thus reducing network instability.

NSF allows for the forwarding of data packets to continue along known routes while the routing protocol information is being restored following an RP failover.

When the NSF feature is configured, peer networking devices do not experience routing flaps. Data traffic is forwarded through intelligent line cards while the standby RP assumes control from the failed active RP during a failover. The ability of line cards to remain up through a failover and to be kept current with the Forwarding Information Base (FIB) on the active RP is key to NSF operation.

When the Cisco IOS XR router running IS-IS routing performs an RP failover, the router must perform two tasks to resynchronize its link-state database with its IS-IS neighbors. First, it must relearn the available IS-IS neighbors on the network without causing a reset of the neighbor relationship. Second, it must reacquire the contents of the link-state database for the network.

The IS-IS NSF feature offers two options when configuring NSF:

- IETF NSF
- Cisco NSF

If neighbor routers on a network segment are NSF aware, meaning that neighbor routers are running a software version that supports the IETF Internet draft for router restartability, they assist an IETF NSF router that is restarting. With IETF NSF, neighbor routers provide adjacency and link-state information to help rebuild the routing information following a failover.

In Cisco IOS XR software, Cisco NSF checkpoints (stores persistently) all the state necessary to recover from a restart without requiring any special cooperation from neighboring routers. The state is recovered from the neighboring routers, but only using the standard features of the IS-IS routing protocol. This capability makes Cisco NSF suitable for use in networks in which other routers have not used the IETF standard implementation of NSF

#### NEW QUESTION 250

The Cisco IOS XE Software summary-address router IS-IS configuration command can be used to send a summarized route into which IS-IS hierarchy?

- A. Level 1 only
- B. Level 2 only
- C. Level-1-2 only
- D. Level 1 or Level 2 or Level-1-2

**Answer:** D

**Explanation:**

### summary-address (IS-IS)

To create aggregate addresses for IS-IS, use the **summary-address** command in router configuration mode. To restore the default, use the **no** form of this command.

**summary-address** *address mask* {**level-1** | **level-1-2** | **level-2**}  
**no summary-address** *address mask* {**level-1** | **level-1-2** | **level-2**}

### Syntax Description

|                  |   |
|------------------|---|
| <i>address</i>   | Summary address designated for a range of addresses.  |
| <i>mask</i>      | IP subnet mask used for the summary route.  |
| <b>level-1</b>   | Only routes redistributed into Level 1 are summarized with the configured address and mask value.   |
| <b>level-1-2</b> | Summary routes are applied when redistributing routes into Level 1 and Level 2 IS-IS, and when Level 2 IS-IS advertises Level 1 routes as reachable in its area.                        |
| <b>level-2</b>   | Routes learned by Level 1 routing are summarized into the Level 2 backbone with the configured address and mask value. Redistributed routes into Level 2 IS-IS will be summarized also. |

C:\Documents and Settings\user-nwz\Desktop\1.JPG

### NEW QUESTION 252

When implementing OSPF, which type of networks require DR/BDR election?

- A. point-to-point networks
- B. mutli-access broadcast networks
- C. non-broadcast multi-access networks (Hub and Spoke Frame Relay) using point-to- multipoint OSPF network type
- D. All networks type

**Answer:** B

### NEW QUESTION 254

In which network environment is IS-IS adjacency check important?

- A. in a multitopology environment where there are different instances of IS-IS running on the same router
- B. in an IPv4/IPv6 environment and running single-topology IS-IS
- C. when a level L1/L2 IS-IS router is neighboring with a Level 1 only or Level 2 only router
- D. when IS-IS neighbors are in an NBMA environment like over Frame Relay
- E. when IS-IS neighbors are in a broadcast environment like an Ethernet LAN

**Answer:** B

### Explanation: Disabling IPv6 Protocol-Support Consistency Checks

Perform this task to disable protocol-support consistency checks in IPv6 single-topology mode.  
 For single-topology IS-IS IPv6, routers must be configured to run the same set of address families. IS-IS performs consistency checks on hello packets and will reject hello packets that do not have the same set of configured address families. For example, a router running IS-IS for both IPv4 and IPv6 will not form an **adjacency** with a router running IS-IS for IPv4 or IPv6 only. In order to allow **adjacency** to be formed in mismatched address-families network, the **adjacency-check** command in IPv6 address family configuration mode must be disabled.

Entering the **no adjacency-check** command can adversely affect your network configuration. Enter the **no adjacency-check** command only when you are running IPv4 IS-IS on all your routers and you want to add IPv6 IS-IS to your network but you need to maintain all your **adjacencies** during the transition. When the IPv6 IS-IS configuration is complete, remove the **no adjacency-check** command from the configuration.

C:\Documents and Settings\user-nwz\Desktop\1.JPG

### NEW QUESTION 256

DRAG DROP

Drag the prefix list configuration on the left to match the correct description on the right. Not all options on the left are used.

|  |                               |
|--|-------------------------------|
| ipv4 prefix-list one permit 255.255.255.255/32 | Match the default route       |
| ipv4 prefix-list one permit 0.0.0.0/0          | Match any /25 to /32 prefixes |
| ipv4 prefix-list one permit 0.0.0.0/32         | Match all routes              |
| ipv4 prefix-list one permit 0.0.0.0/0 le 32    | Match any host routes         |
| ipv4 prefix-list one permit 0.0.0.0/0 ge 25    |                               |
| ipv4 prefix-list one permit 0.0.0.255/24       |                               |
| ipv4 prefix-list one permit 0.0.0.128/25 le 32 |                               |

**Answer:**

**Explanation:** Match the default Route – ipv4 prefix-list one permit 0.0.0.0/0  
Match all routes – ipv4 prefix-list permit 0.0.0.0/0 le 32  
Match any host routes - ipv4 prefix-list permit 0.0.0.0/32  
Match any /25 to /32 prefixes - ipv4 prefix-list permit 0.0.0.0/0 ge 25

#### NEW QUESTION 260

Which option describes how an engineer must configure route summarization on a Cisco IOS XE OSPF-enabled network of routers?

- A. area range command under the router OSPF process of the ABR
- B. area range command under the router OSPF process of the router wanting to originate the summary route from
- C. summary-address command under the OSPF process of the ABR
- D. summary-address command under the OSPF process of the router wanting to originate the summary route from
- E. network statement for the aggregate address under the router OSPF process on the ABR
- F. network statement for the aggregate address under the router OSPF process of the router wanting to originate the summary route from

**Answer:** A

#### NEW QUESTION 264

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