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Implementing Cisco Service Provider Advanced Routing Solutions (SPRI)

Cisco 300-510

Version Demo

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Topic Break Down

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Topic 1, New Update	78
Topic 2, Unicast Routing	56
Topic 3, Multicast Routing	18
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QUESTION NO: 1

```
RP/0/0/CPU/0:P1#
!
key chain BGP
key 1
accept-lifetime 13:14:06 february 14 1993 infinitive
send-lifetime 13:14:06 february 14 1993 infinitive
key-string password cisco123
cryptographic-algorithm MD5
!
!
router bgp 1
address-family ipv4 unicast
!
neighbor 192.168.13.3
   remote-as 1
   keychain BGP
   address-family ipv4 unicast


RP/0/0/CPU/0:PE3#
!
key chain BGP
key 1
accept-lifetime 13:14:06 february 14 1993 infinitive
send-lifetime 13:14:06 february 14 1993 infinitive
key-string password cisco123
cryptographic-algorithm MD5
!
!
router bgp 1
address-family ipv4 unicast
!
neighbor 192.168.13.1
   remote-as 1
   keychain BGP
   address-family ipv4 unicast
```

Refer to the exhibit. P1 and PE3 Cisco IOS XR routers are directly connected and have this configuration applied. The BGP session is not coming up. Assume that there is no IP reachability problem and both routers can open tcp port 179 to each other. Which two actions fix the issue? (Choose two.)

A. Change MD5 to HMAC-SHA1-12

B. Change MD5 to HMAC-ESP

C. Change MD5 to SHA-1

D. Change MD5 to HMAC-MD5

E. Remove the send and accept lifetime under key 1

ANSWER: A D

Explanation:

Reference: https://www.cisco.com/c/en/us/td/docs/routers/crs/software/crs_r4-0/security/configuration/guide/sc40crsbook_chapter5.html

QUESTION NO: 2

Which two characteristics unique to SSM when compared to ASM are true? (Choose two.)

A. It uses SPT switchover

B. It uses (*,G) exclusively

C. It uses IGMPv3

D. It uses RP

E. It uses (S,G) exclusively

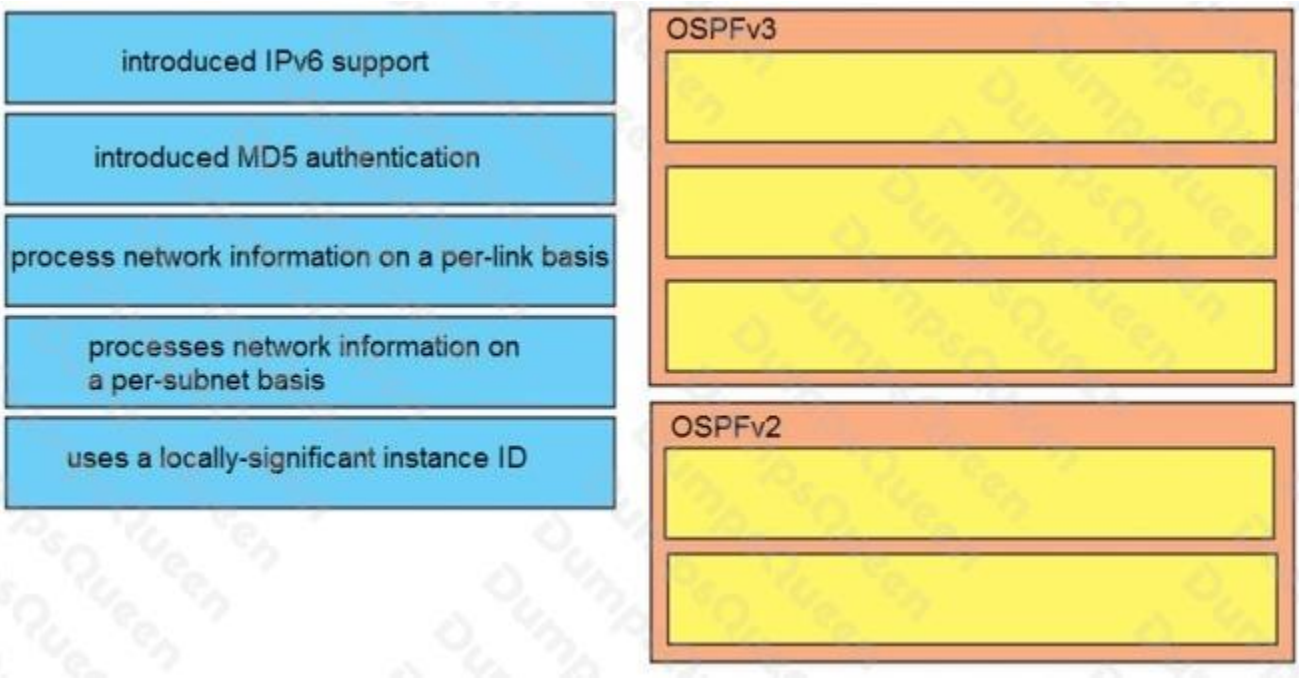
ANSWER: C E

QUESTION NO: 3 - (DRAG DROP)

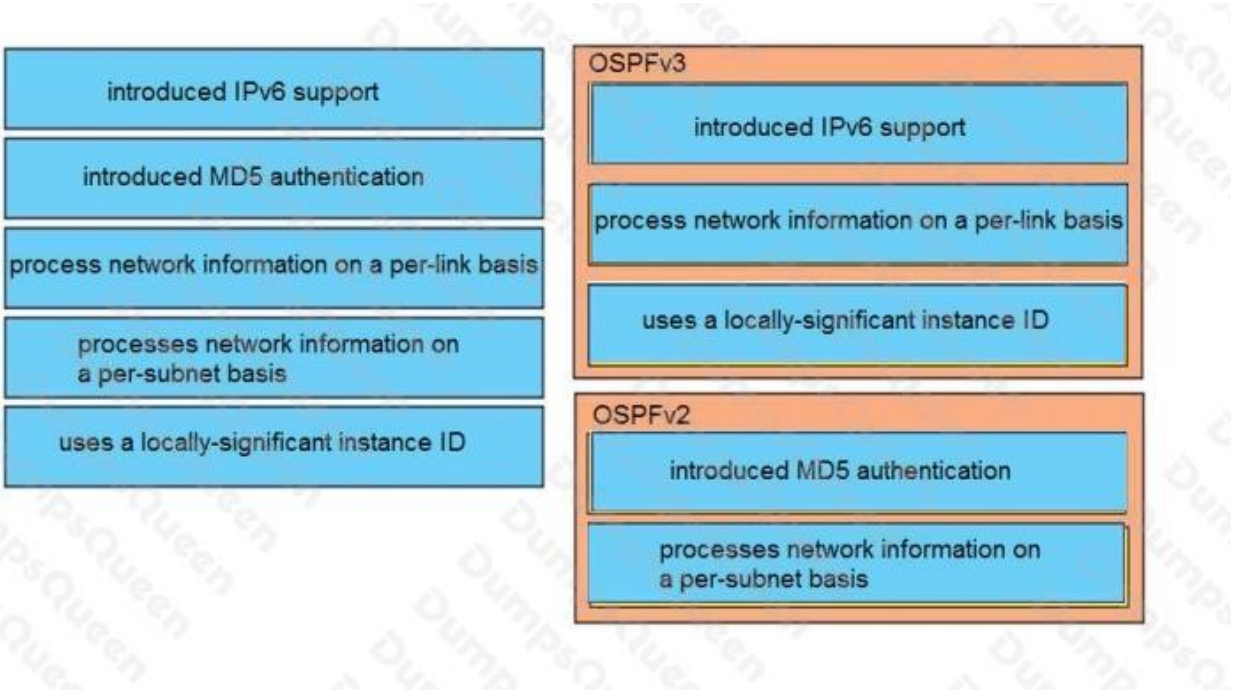
DRAG DROP

Compare different features between OSPFv2 and OSPFv3. Drag and drop the descriptions of OSPF from the left onto the correct OSPF versions on the right.

Select and Place:



ANSWER:



Explanation:

QUESTION NO: 4

Which two statements about mapping multicast IP addresses to MAC addresses are true? (Choose two.)

A. All mapped multicast MAC addresses begin with 0x0100.5E

B. The router performs the mapping before it hands the packet off to a switch

C. All multicast MAC addresses end with 0x0100.5E

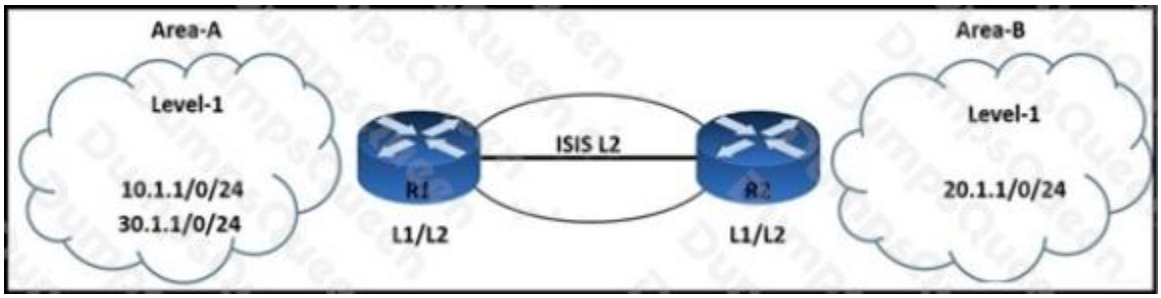
D. The mapping process may generate overlapping addresses, which can cause receivers to receive unwanted packets

E. All destination MAC addresses begin with an octet of binary 1s

ANSWER: A D

QUESTION NO: 5

Refer to the exhibit.



An engineer is troubleshooting IS-IS configuration between two areas. IS-IS Area-A network 30.1.1.0/24 is leaked into IS-IS Area-B. R2 is failing to filter the route updates from network 10.1.1.0/24. Which configuration must the engineer apply to resolve the issue?

A. R2(config)# ip prefix-list List2 seq 5 deny 10.1.1.0/24
R2(config)# interface fastethernet 0/0
R2(config-if)# ip router isis 100
R2(config-if)# router isis 100
R2(config-router)# distribute-list gateway List2 in

B. R2(config)# ip prefix-list List1 seq 3 deny 10.1.1.0/24
R2(config)# ip prefix-list List1 seq 5 permit 30.1.1.0/24 ge 25 1e
R2(config)# ip prefix-list List1 seq 10 permit 0.0.0.0/le 32
R2(config)# interface fastethernet 0/0
R2(config-if)# ip router isis 122
R2(config-if)# router isis 122
R2(config-router)# distribute-list prefix List1 in

C. R1(config)# ip prefix-list List2 seq 5 deny 10.1.1.0/24
R1(config)# interface fastethernet 0/0
R1(config-if)# ip router isis 100
R1(config-if)# router isis 100
R1(config-router)# distribute-list gateway List2 in
R (config-if)# router isis 150
R1(config-router)# distribute-list route-map Map1 in

D. R2(config)# access-list 101 deny ip any 10.1.1.0 0.0.0.127
R2(config)# access-list 101 permit ip any 30.1.1.0 0.0.0.63
R2(config)# access-list 101 deny ip any 0.0.0.0 0.0.0.0
R2(config)# interface fastethernet 0/0
R2(config-if)# ip router isis 121
R2(config-if)# router isis 121
R2(config-router)# distribute-list 101 in

ANSWER: C

Explanation:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/iproute_isis/configuration/15-mt/irs-15-mt-book/isis-inbound-filtering.html

QUESTION NO: 6

What are the two characteristics of route reflectors? (Choose two.)

A. If a router received an iBGP route with the originator-ID attribute set to its owm router ID, the route is discarded.

B. Routes received from nonclient peers are reflected to route reflector clients as well as nonclient peers.

C. Routes received from nonclient peers are reflected to route renector cluster as well as OSPF peers.

D. If a route reflector receives a route with a cluster-list attribute containing a different cluster ID, the route is discarded.

E. Routes received from a route reflector Client are reflected to other clients and nonclient peers.

ANSWER: A E

QUESTION NO: 7

You have configured routing policies on a Cisco IOS XR device with routing policy language. Which two statements about the routing policies are true? (Choose two.)

A. The routing policies affect BGP-related routes only.

B. If you make edits to an existing routing policy without pasting the full policy into the CLI, the previous policy is overwritten.

C. You can change an existing routing policy by editing individual statements.

D. The routing policies are implemented in a sequential manner.

E. The routing policies are implemented using route maps.

ANSWER: C D

QUESTION NO: 8

Refer to the exhibit.


```
PE1# show mpls forwarding-table
Local  Outgoing  Prefix          Bytes Label  Outgoing    Next  Hop
Label  Label       or Tunnel Id  Switched      interface
16     No Label    172.16.1.1/32     0          drop
17     No Label    192.168.12.12/32  0          drop
20     No Label    192.168.2.2/32    0          drop
21     No Label    10.1.212.0/24     0          drop
22     No Label    10.1.211.0/24     0          drop
23     No Label    192.168.11.11/32  0          drop
24     No Label    172.16.11.0/24    0          drop
25     No Label    172.16.14.0/24    0          drop

PE2#show ip route 192.168.1.1
Routing entry for 192.168.1.0/24
Known via "bgp 100", distance 200, metric 0
Tag 1, type internal
Last update from 192.168.1.12 20:10:38 ago
Routing Descriptor Blocks:
* 192.168.1.12, from 192.168.12.12, 20:10:38
ago
Route metric is 0, traffic share count is 1
AS Hops 5

PE1#show ip route 192.168.11.11
Routing entry for 192.168.11.11/32
Known via "ospf 100", distance 110, metric 2, type
intra area
Last update from 10.1.111.11 on Gi0/1 00:04:34 ago
Routing Descriptor Blocks:
* 10.1.111.11, from 192.168.11.11, 00:04:34 ago
via GugabitEthernet0/1
Route metric is 2, traffic share count is 1
```

VPN users that are connected to PE routers are facing network issues. Traffic that originates from CE1 drops before reaching CE2. An engineer finds no outgoing traffic statistics on PE1 and PE2 routers toward CE devices and finds that the PE1 router is running the older software image. Which action must be implemented to resolve the issues?

A. Enable LDP protocol on PE1 and PE2 routers.

B. Advertise P1 router loopback on PE1 in OSPF.

C. Enable CEF-based forwarding on PE1 router.

D. Advertise PE2 router loopback on PE1 in OSPF.

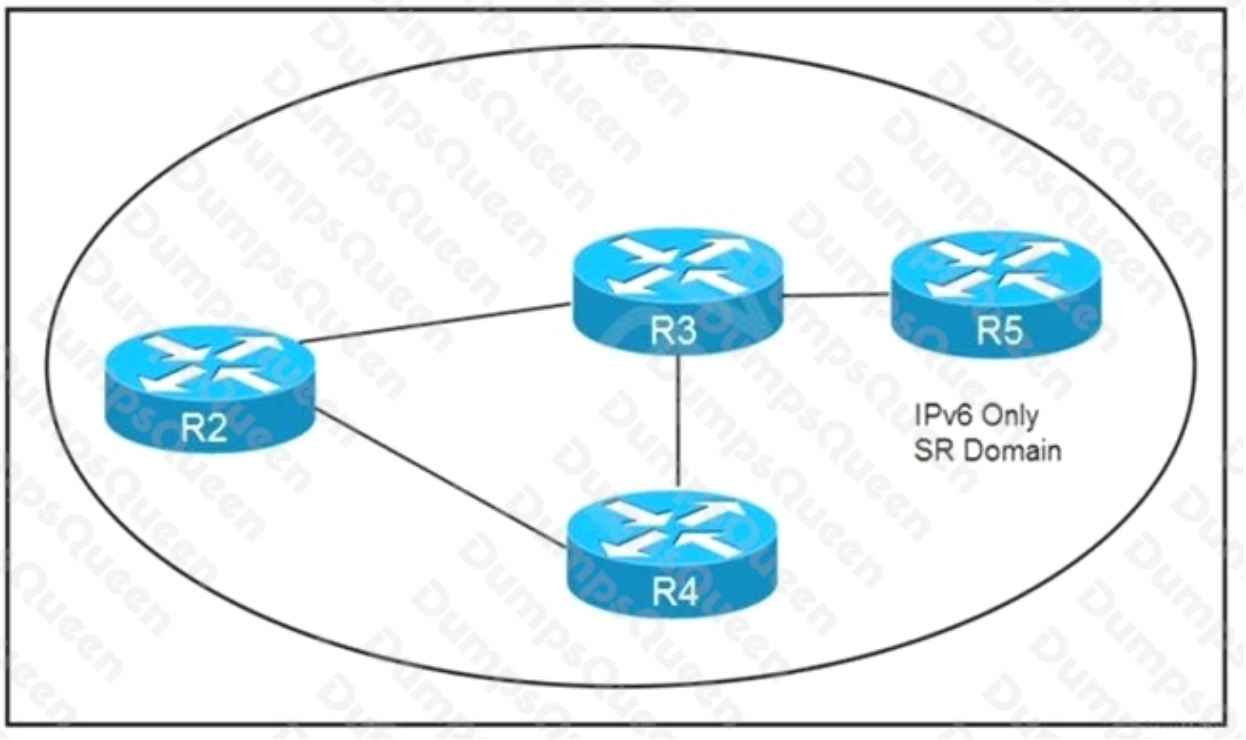
ANSWER: C

Explanation:

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp_basic/configuration/xe-3s/mp-basic-xe-3s-book/mp-mpls-cisco-rtrs.html

QUESTION NO: 9

Refer to the exhibit. How are packets directed through the data plane when SRv6 is implemented?



A. An ordered list of segments is encoded in a routing extension header

B. The MPLS data plane is used to push labels onto IGP routes

C. A stack of labels represents an ordered list of segments

D. The packet is encapsulated with a header and trailer encoding the ordered list of segments

ANSWER: A

Explanation:

Reference: https://www.ciscolive.com/c/dam/r/ciscolive/emea/docs/2019/pdf/BRKIPM-2249.pdf

QUESTION NO: 10

Which two routing protocols have extensions capable of running SRv6? (Choose two.)

A. OSPF

B. BGP

C. RIP

D. IGRP

E. EIGRP

ANSWER: A B

QUESTION NO: 11 - (SIMULATION)

Guidelines

This is a lab item in which tasks will be performed on virtual devices.

Refer to the Tasks tab to view the tasks for this lab item.

Refer to the Topology tab to access the device console(s) and perform the tasks.

Console access is available for all required devices by clicking the device icon or using the tab(s) above the console window.

All necessary preconfigurations have been applied.

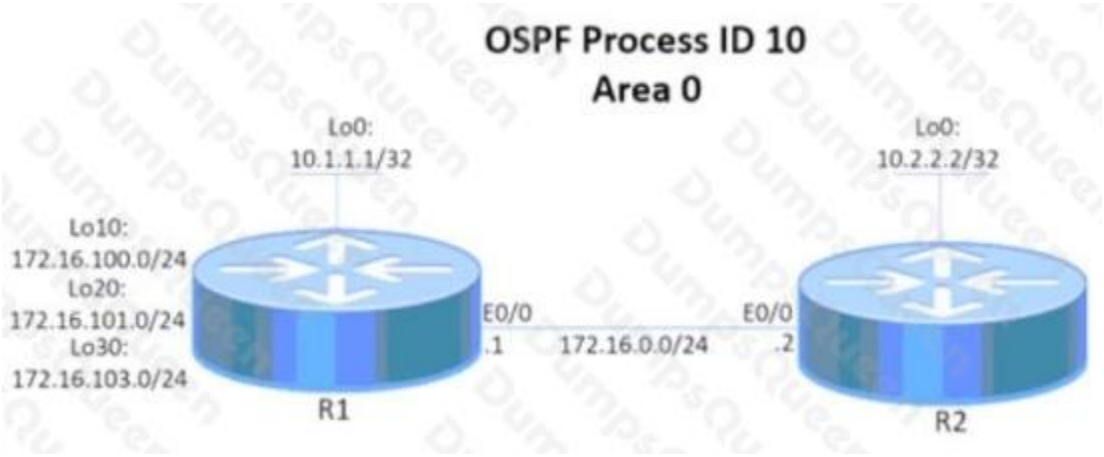
Do not change the enable password or hostname for any device.

Save your configurations to NVRAM before moving to the next item.

Click Next at the bottom of the screen to submit this lab and move to the next question.

When Next is clicked, the lab doses and cannot be reopened.

Topology



Tasks

Configure and verify an OSPF neighbor adjacency between R1 and R2 in OSPF area 0 according to the topology to achieve these goals:

1. R1 pings the Loopback0 interface of R2. Use interface-level configuration to complete this task.

2. R2 pings the Loopback0 interface of R1. Use interface-level configuration to complete this task.

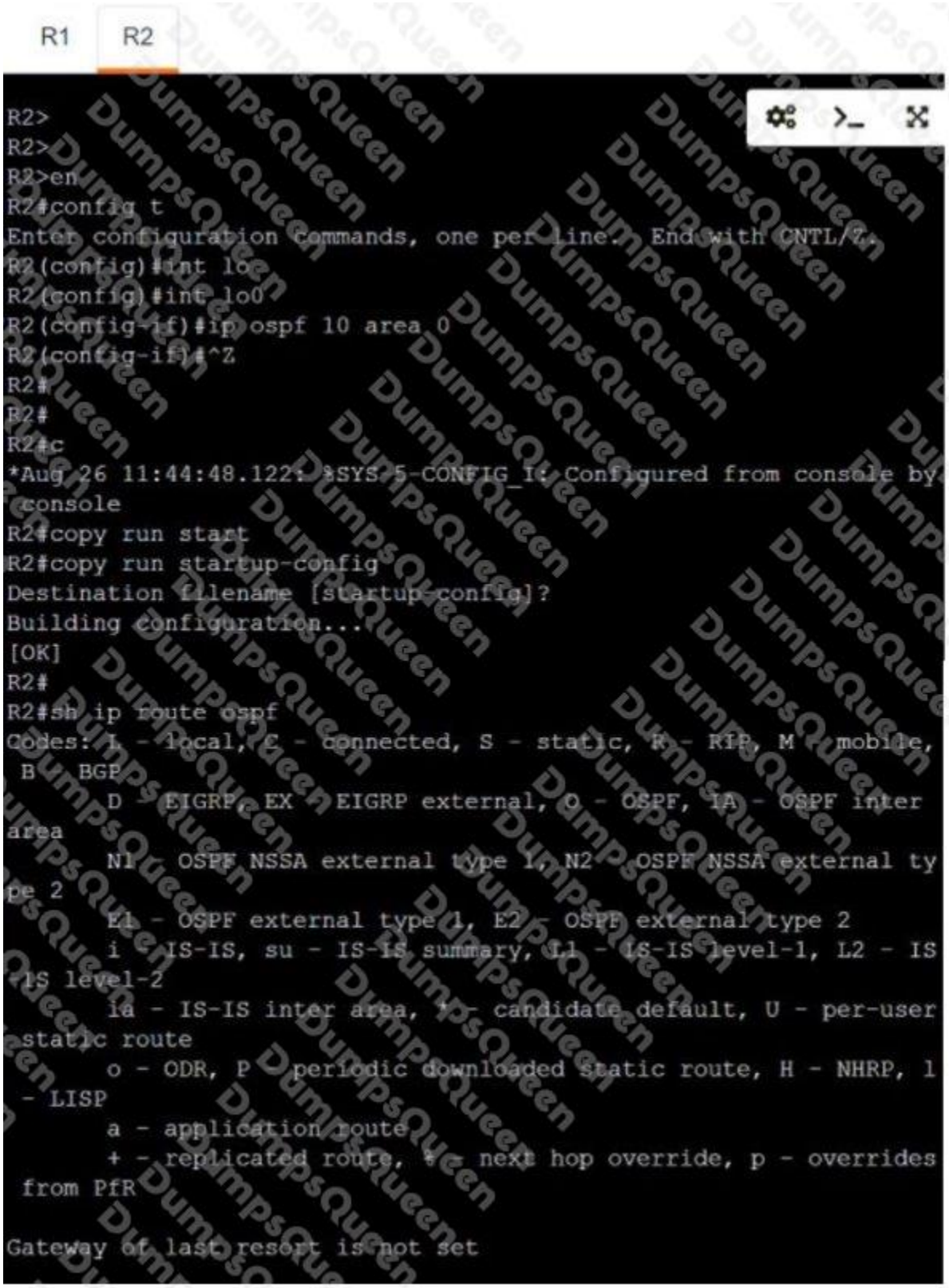
3. R2 receives a single summary route 172.16.100.0/22 for networks 172.16.100.0/24, 172.16.101.0/24, and 172.16.103.0/24.

ANSWER: Seeexplanationbelow.

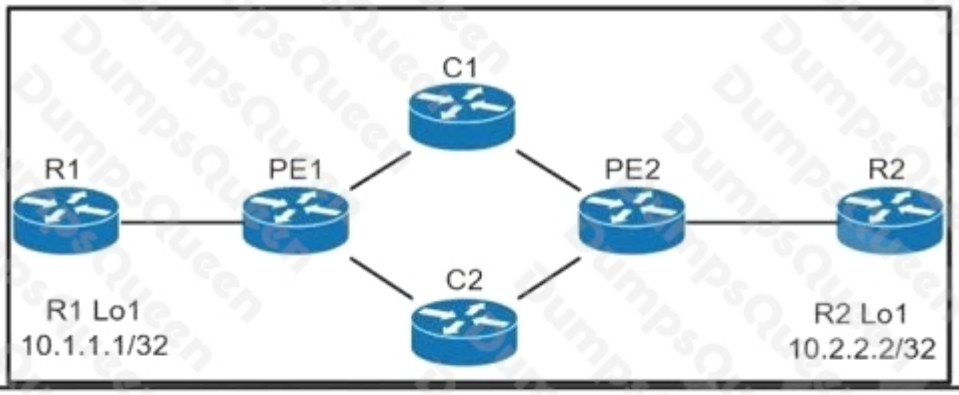
Explanation:

R1 R2

```
R1>en
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int lo
R1(config)#int lo0
R1(config-if)#ip ospf 10 area 0
R1(config-if)#exit
R1(config)#int lo 10
R1(config-if)#ip ospf nei
R1(config-if)#ip ospf net
R1(config-if)#ip ospf network point-to-po
R1(config-if)#ip ospf network point-to-point
R1(config-if)#int lo 20
R1(config-if)#ip ospf net po
R1(config-if)#ip ospf net point-to-po
R1(config-if)#ip ospf net point-to-point
R1(config-if)#exit
R1(config)#int lo
R1(config)#int lo30
R1(config-if)#ip ospf netwo poi
R1(config-if)#ip ospf netwo point-to-po
R1(config-if)#ip ospf netwo point-to-point
R1(config-if)#
R1(config-if)#exit
R1(config)#int et
R1(config)#int ethernet 0/0
R1(config-if)#ip ospf 10 area 0
R1(config-if)#exit
R1(config)#router ospf 10
R1(config-router)#area 1 rang 172.16.100.0 255.255.252.0
R1(config-router)#exit
R1(config)#
R1(config)#^Z
R1#
R1#
R1#copy r
*Aug 26 11:44:29.078: %SYS-5-CONFIG_I: Configured from console by
 console
R1#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R1#
R1#
```



QUESTION NO: 12




```
RP/0/0/CPU0:PE1#show ip route 10.2.2.2
Fri Jun 28 01:03:49.698 UTC

Routing entry for 10.2.2.2/32
  Known via "bgp 1", distance 200, metric 0, type internal
  Installed Jun 27 23:27:12.395 for 01:36:37
  Routing Descriptor Blocks
    10.0.0.33, from 192.168.0.7
      Route metric is 0
  No advertising protos.
RP/0/0/CPU0:PE1#
```

```
RP/0/0/CPU0:PE1#show mpls forwarding
Fri Jun 28 01:04:44.885 UTC
Local  Outgoing    Prefix            Outgoing     Next Hop        Bytes
Label  Label       or ID             Interface                    Switched
------ ----------- ----------------- ------------ --------------- ------------
24000  Pop         192.168.0.2/32    Gi0/0/0/3    10.0.0.5        1644
24001  24000       192.168.0.4/32    Gi0/0/0/2    10.0.0.30       24647
       24000       192.168.0.4/32    Gi0/0/0/3    10.0.0.5        0
24002  Pop         192.168.0.6/32    Gi0/0/0/2    10.0.0.30       12412
24003  24001       192.168.0.7/32    Gi0/0/0/2    10.0.0.30       22359
       24001       192.168.0.7/32    Gi0/0/0/3    10.0.0.5        1473
24004  Pop         10.0.0.20/30      Gi0/0/0/3    10.0.0.5        0
24005  Pop         10.0.0.16/30      Gi0/0/0/2    10.0.0.30       0
       Pop         10.0.0.16/30      Gi0/0/0/3    10.0.0.5        0
24006  Pop         10.0.0.40/30      Gi0/0/0/2    10.0.0.30       0
24007  24002       10.0.0.32/30      Gi0/0/0/2    10.0.0.30       0
       24002       10.0.0.32/30      Gi0/0/0/3    10.0.0.5        7045024
24009  Unlabelled  10.1.1.1/32       Gi0/0/0/0    10.0.0.9        7037648
RP/0/0/CPU0:PE1#
```

Refer to the exhibits. A network operator is troubleshooting packet loss seen from the R1 loopback interface to the R2 loopback interface over the core network. The operator is attempting to identify the next leg in the path from PE1. Which interface and label path should the operator investigate next?

A. PE1 – Gi0/0/0/2 – forwarding label 24001

B. PE1 – Gi0/0/0/3 – forwarding label 24002

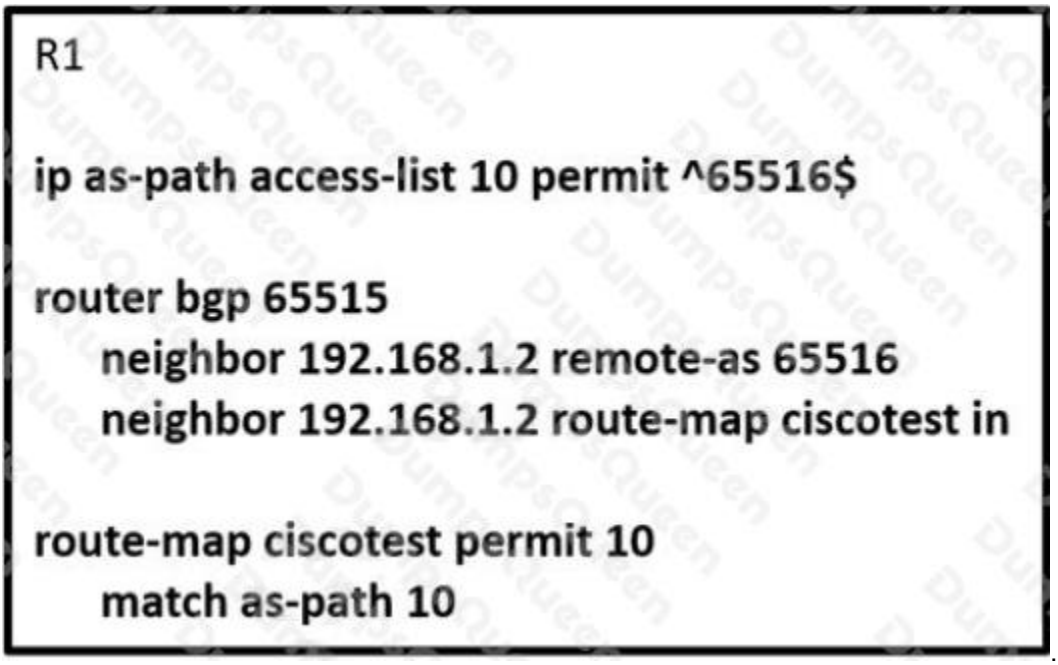
C. PE1 – Gi0/0/0/2 – forwarding label 24002

D. PE1 – Gi0/0/0/3 – forwarding label 24001

ANSWER: D

QUESTION NO: 13

Refer to the exhibit.



R1 is expected to receive routes originating from AS 65516 and from any ASs that are directly attached to it. However, R1 is receiving routes only from AS 65516. Which action corrects the configuration?

A. Change the regular expression in the AS-path permit filter to .*.

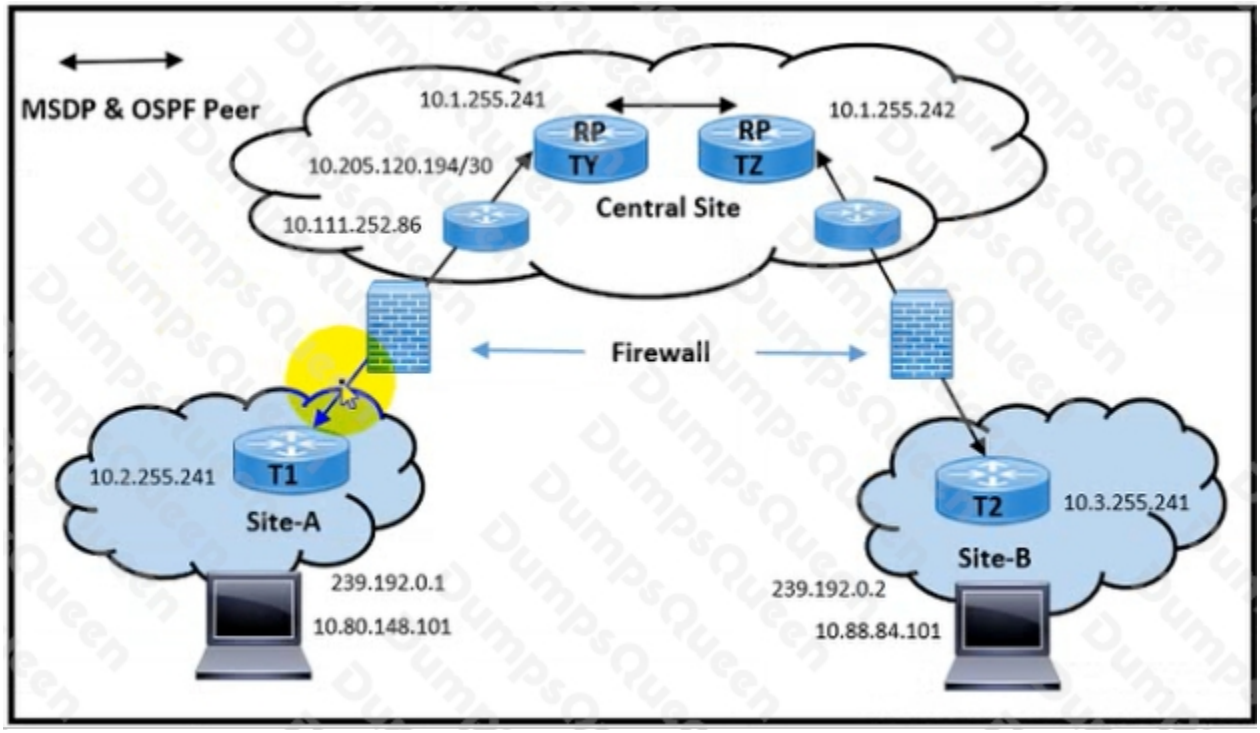
B. Change the regular expression in the AS-path permit filter to ^65516_[0-9]*$.

C. Add the regular expression ^$. in the AS-path filter to permit the traffic from R2.

D. Change the regular expression in the AS-path permit filter to _65516_.

ANSWER: B

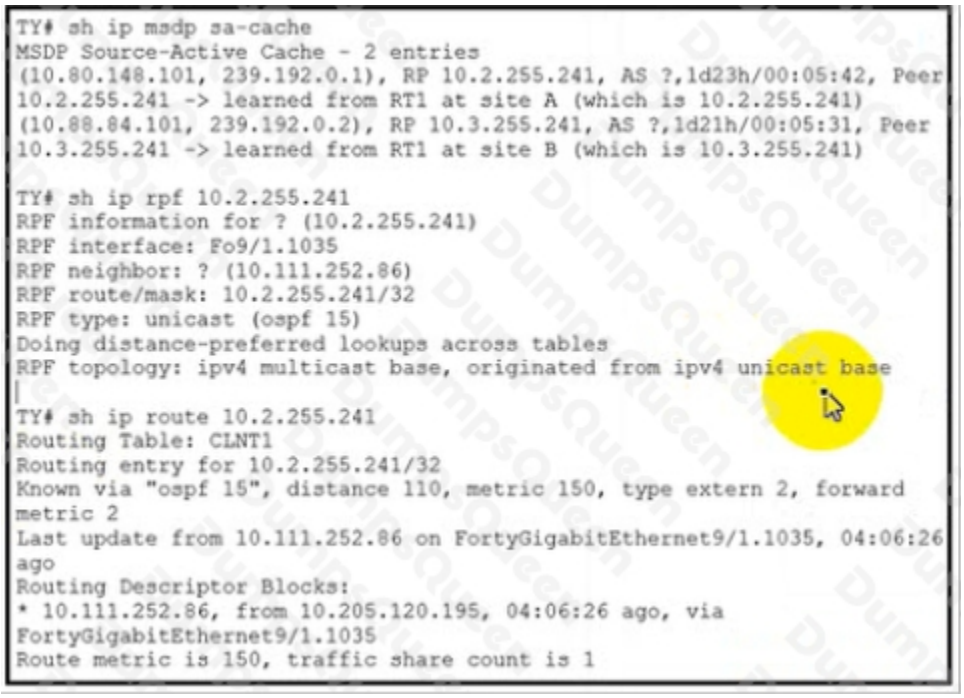
QUESTION NO: 14




```
TZ# show ip msdp sa-cache rejected-SA det read-only <snip>
86854209.328, (10.80.148.101, 239.192.0.1), RP: 10.2.255.241, Peer:
10.1.255.241, Reason: rpf-fail -> learned from central site RT1 but not
accepted (originated from site A RT1)
86854209.328, (10.88.84.101, 239.192.0.2), RP: 10.3.255.241, Peer:
10.1.255.241, Reason: rpf-fail -> learned from central site RT1 but not
accepted (originated from site B RT1)

TZ# show ip rpf 10.1.255.241
RPF information for ? (10.1.255.241)
RPF interface: Vlan10
RPF neighbor: ? (10.111.254.9)
RPF route/mask: 10.1.255.241/32
RPF type: unicast (ospf 15)
Doing distance-preferred lookups across tables
RPF topology: ipv4 multicast base, originated from ipv4 unicast base

TZ# show ip route 10.1.255.241
Routing Table: CENT1
Routing entry for 10.1.255.241/32
Known via "ospf 15", distance 110, metric 3, type intra area
Last update from 10.111.254.9 on Vlan10, 1d22h ago
Routing Descriptor Blocks:
* 10.111.254.9, from 10.205.0.197, 1d22h ago, via Vlan10
Route metric is 3, traffic share count is 1
```



Refer to the exhibit. Multicast traffic destined from T1 and T2 routers to RP routers works well. A network engineer observes problems with multicast traffic flows between Site-A and Site-B. Site-A users fail to receive multicast stream on Site-B via RPTY site, while Site-B users fail to receive multicast stream on Site-Avia RPTZ site. Which action must be implemented to resolve the issues?

A. Establish MDSP peering with interface IP subnet.

B. Configure Site-A and Site-B in 10.80.14804

C. Allow the OSPF and MSDP packets on the firewall.

D. Configure direct OSPF peering between Site-A and Ste-B

ANSWER: C

QUESTION NO: 15

What can be used to determine a path from the head-end to a tail-end router when implementing SR-TE with a head-end, with little information on the network topology?

A. traffic controller

B. path computation engine

C. tail-end router

D. SNMP server

ANSWER: B