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Implementing Cisco Enterprise Advanced Routing and Services (300-410 ENARSI)

Cisco 300-410

Version Demo

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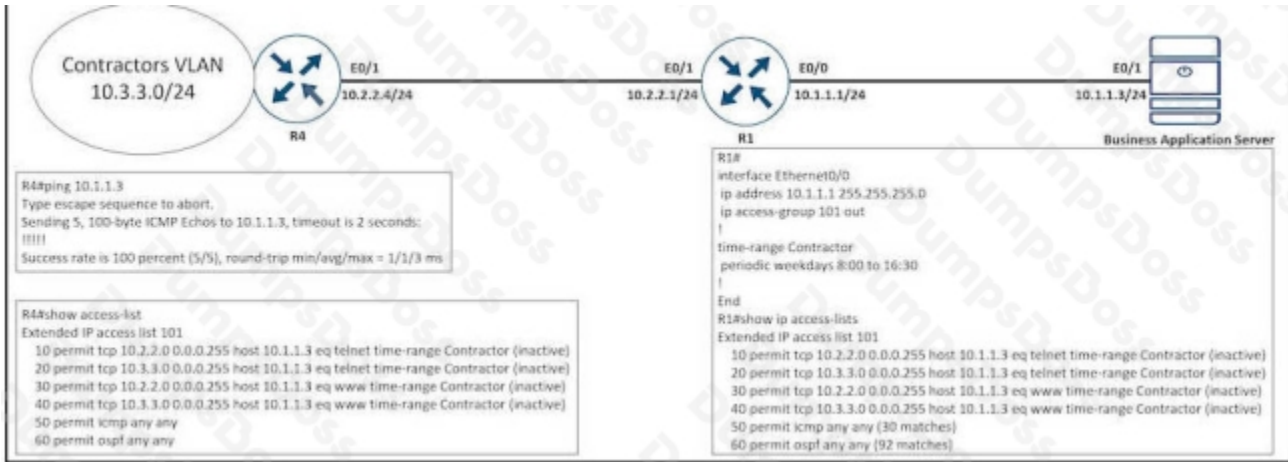
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Topic Break Down

Topic	No. of Questions
Topic 1, New Update	292
Topic 2, Layer 3 Technologies	83
Topic 3, VPN Technologies	40
Topic 4, Infrastructure Security	42
Topic 5, Infrastructure Services	53
Total	510

QUESTION NO: 1

Refer to the exhibit.



An engineer is troubleshooting failed access by contractors to the business application server via Telnet or HTTP during the weekend. Which configuration resolves the issue?

A)

```

R1
time-range Contractor
no periodic weekdays 8:00 to 16:30
periodic daily 8:00 to 16:30
    
```

B)

```

R4
time-range Contractor
no periodic weekdays 17:00 to 23:59
periodic daily 8:00 to 16:30
    
```

C)

```

R4
no access-list 101 permit tcp 10.3.3.0 0.0.0.255 host 10.1.1.3 eq telnet time-range Contractor
    
```

D)

```

R1
no access-list 101 permit tcp 10.3.3.0 0.0.0.255 host 10.1.1.3 eq telnet time-range Contractor
    
```

A. Option

B. Option

C. Option

D. Option

ANSWER: A

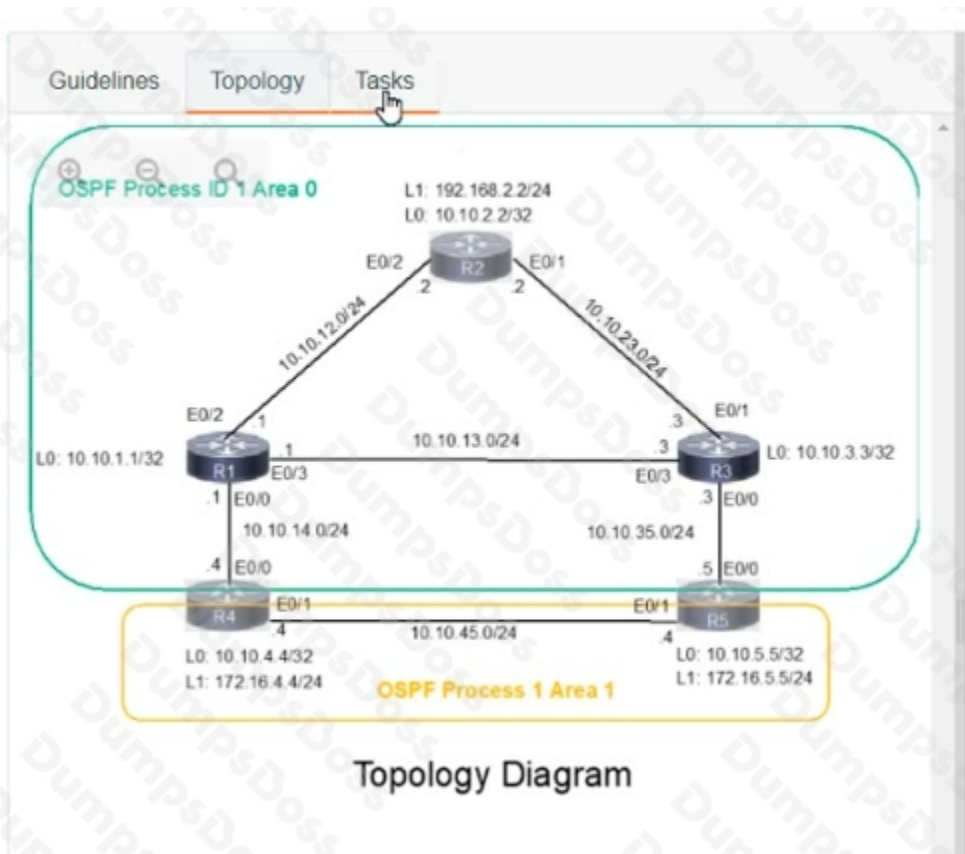
QUESTION NO: 2

Which two components are needed for a service provider to utilize the LVPN MPLS application? (Choose two.)

- A. The P routers must be configured for MP-iBGP toward the PE routers
- B. The P routers must be configured with RSVP.
- C. The PE routers must be configured for MP-iBGP with other PE routers
- D. The PE routers must be configured for MP-eBGP to connect to CEs
- E. The P and PE routers must be configured with LDP or RSVP

ANSWER: C E

QUESTION NO: 3 - (SIMULATION)



Guidelines

Topology

Tasks

A network is configured with IP connectivity, and the routing protocol between devices started having problems right after the maintenance window to implement network changes.

Troubleshoot and resolve to a fully functional network to ensure that:

1. Inter-area links have link authentication (not area authentication) using MD5 with the key 1 string CCNP.
2. R3 is a DR regardless of R2 status while R1 and R2 establish a DR/BDR relationship.
3. OSPF uses the default cost on all interfaces. Network reachability must follow OSPF default behavior for traffic within an area over intra-area VS inter-area links.
4. The OSPF external route generated on R4 adds link cost when traversing through the network to reach R2. A network command to advertise routes is not allowed.

```
R2 R4 R5
R2>en
R2#
R2#
R2#
R2#
R2#
R2#
R2#sh run
Building configuration...

Current configuration : 1279 bytes
!
version 15.8
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R2
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
!
!
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
```

```
R2  R4  R5
interface Loopback0
ip address 10.10.2.2 255.255.255.255
ip ospf 1 area 0
!
interface Loopback1
ip address 192.168.2.2 255.255.255.0
ip ospf 1 area 0
!
interface Ethernet0/0
no ip address
shutdown
duplex auto
!
interface Ethernet0/1
ip address 10.10.23.2 255.255.255.0
ip ospf 1 area 0
duplex auto
!
interface Ethernet0/2
ip address 10.10.12.2 255.255.255.0
ip ospf 1 area 0
duplex auto
!
interface Ethernet0/3
no ip address
shutdown
duplex auto
!
router ospf 1
passive-interface default
no passive-interface Ethernet0/1
no passive-interface Ethernet0/2
```



```
R2 R4 R5
R4>
R4>
R4>
R4>
R4>en
R4#sh run
Building configuration...

Current configuration: 1479 bytes
!
version 15.8
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R4
!
boot-start-marker
boot-end-marker
!
no aaa new-model
!
!
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
--More--
```

```
R2 R4 R5
key chain CCNP
key 1
  key-string ccnp
  cryptographic-algorithm md5
!
!
!
!
!
!
ip address 172.16.4.4 255.255.255.0
!
interface Ethernet0/0
ip address 10.10.14.4 255.255.255.0
ip ospf authentication key-chain CCNP
ip ospf 1 area 0
duplex auto
!
interface Ethernet0/1
ip address 172.16.45.4 255.255.255.0
ip ospf 1 area 1
duplex auto
!
interface Ethernet0/2
no ip address
shutdown
duplex auto
!
interface Ethernet0/3
no ip address
shutdown
duplex auto
```

```
R2 R4 R5
router ospf 1
 redistribute connected subnets route-map to-ospf
 passive-interface default
 no passive-interface Ethernet0/0
 no passive-interface Ethernet0/1
 !
 ip forward-protocol nd
 !
 !
 no ip http server
 no ip http secure-server
 !
 ipv6 ioam timestamp
 !
 route-map to-ospf permit 10
 match interface Loopback1
 !
 control-plane
 !
 !
 !
 line con 0
 logging synchronous
 line aux 0
```

R5

```
R2  R4  R5
R5>
R5>
R5>en
R5#
R5#
R5#sh run
Building configuration...

Current configuration : 1496 bytes
!
version 15.8
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R5
boot-start-marker
boot-end-marker
!
!
no aaa new-model
!
!
clock timezone PST -8 0
mmi polling-interval 60
no mmi auto-configure
no mmi pvc
--More--
```

```
R2 R4 R5
no ip domain lookup
ip cef
no ipv6 cef
!
multilink bundle-name authenticated
!
!
key chain CCNP
  key 1
    key-string CCNP
    cryptographic-algorithm md5
!
!
!
```

```
R2  R4  R5
!
!
!
interface Loopback0
 ip address 10.10.5.5 255.255.255.255
 ip ospf 1 area 1
!
interface Loopback1
 ip address 172.16.5.5 255.255.255.0
!
interface Ethernet0/0
 ip address 10.10.35.5 255.255.255.0
 ip ospf authentication key-chain CCNP
 ip ospf 1 area 0
 duplex auto
!
interface Ethernet0/1
 ip address 172.16.45.5 255.255.255.0
 ip ospf 1 area 1
 ip ospf cost 60
 duplex auto
!
interface Ethernet0/2
 no ip address
 shutdown
 duplex auto
!
interface Ethernet0/3
 no ip address
```

```
R2  R4  R5
router ospf 1
 redistribute connected subnets route-map to-ospf
 passive-interface default
 no passive-interface Ethernet0/0
 no passive-interface Ethernet0/1
 !
 ip forward-protocol nd
 !
 !
 no ip http server
 no ip http secure-server
 !
 ipv6 ioam timestamp
 !
 route-map to-ospf permit 10
  match interface Loopback1
 !
 control-plane
 !
 !
 line con 0
 logging synchronous
 line aux 0
```

ANSWER: SeethesolutionbelowinExplanation.

Explanation:

R4

Int range et0/0 – 1

Ip ospf authentication message-digest

Ip ospf message-digest-key 1 md5 CCNP

Router ospf 1

Redistribute connected subnets route-map to-ospf metric-type 1

Copy run start

R5

Int range et0/0 – 1

Ip ospf authentication message-digest

Ip ospf message-digest-key 1 md5 CCNP

Interface eth 0/1

Ip ospf cost 10

Copy run start

VERIFICATION:-

```
R2#show ip ospf nei
R2#show ip ospf neighbor

Neighbor ID     Pri   State           Dead Time   Address      Interface
10.10.1.1       1     FULL/BDR        00:00:38   10.10.12.1   Ethernet0/2
10.10.3.3       1     FULL/BDR        00:00:30   10.10.23.3   Ethernet0/1
```

QUESTION NO: 4

```
LA
router ospf 1
 network 192.168.12.0 0.0.0.255 area 0
 network 172.16.1.0 0.0.0.255 area 0

NY
router ospf 1
 network 192.168.12.0 0.0.0.255 area 0
 network 172.16.2.0 0.0.0.255 area 0
!
interface E 0/0
 ip ospf authentication message-digest
 ip ospf message-digest-key 1 md5 Cisco123
```

Refer to the exhibit. The neighbor relationship is not coming up.

Which two configurations bring the adjacency up? (Choose two.)

- A. LA**
interface E 0/0
ip ospf authentication-key Cisco123
- B. NY**
interface E 0/0 no ip ospf message-digest-key 1 md5 Cisco123 ip ospf authentication-key Cisco123
- C. LA**
interface E 0/0 ip ospf message-digest-key 1 md5 Cisco123
- D. LA**
router ospf 1
area 0 authentication message-digest
- E. NY**
router ospf 1
area 0 authentication message-digest

ANSWER: C D

QUESTION NO: 5

An engineer must configure a Cisco router to initiate secure connections from the router to other devices in the network but kept failing. Which two actions resolve the issue? (Choose two.)

- A.** Configure transport input ssh command on the console.
- B.** Configure a domain name.
- C.** Configure a crypto key to be generated.
- D.** Configure a source port for the SSH connection to initiate.
- E.** Configure a TACACS+ server and enable it.

ANSWER: B C

QUESTION NO: 6

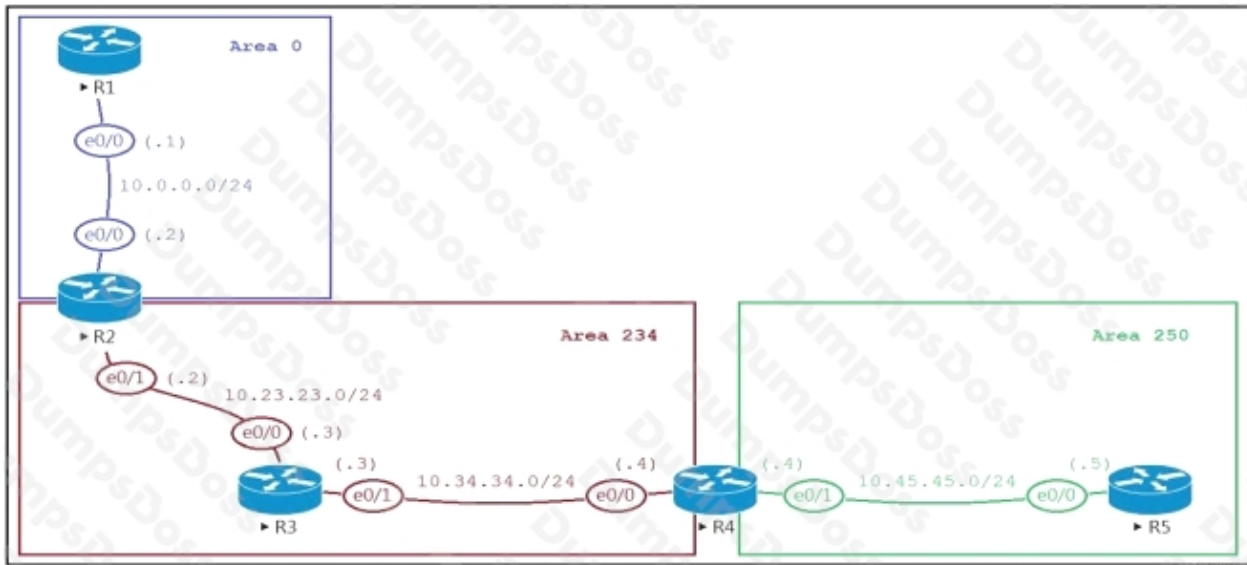
What are two MPLS label characteristics? (Choose two.)

- A.** The label edge router swaps labels on the received packets.
- B.** Labels are imposed in packets after the Layer 3 header.
- C.** LDP uses TCP for reliable delivery of information.
- D.** An MPLS label is a short identifier that identifies a forwarding equivalence class.

E. A maximum of two labels can be imposed on an MPLS packet.

ANSWER: C D

QUESTION NO: 7



ABR Configurations

R2

```
router ospf 1
router-id 0.0.0.22
area 234 virtual-link 10.34.34.4
network 10.0.0.0 0.0.0.255 area 0
network 10.2.2.0 0.0.0.255 area 0
network 10.22.22.0 0.0.0.255 area 234
network 10.23.23.0 0.0.0.255 area 234
```

R4

```
router ospf 1
router-id 0.0.0.44
area 234 virtual-link 10.23.23.2
network 10.34.34.0 0.0.0.255 area 234
network 10.44.44.0 0.0.0.255 area 234
network 10.45.45.0 0.0.0.255 area 250
```

Virtual Link Status

```
R4#sh ip ospf virtual-links
Virtual Link OSPF_VL0 to router 10.23.23.2 is down
Run as demand circuit
DoNotAge LSA allowed.
Transit area 234
Topology-MTID Cost Disabled Shutdown Topology Name
  0      65535 no    no    Base
Transmit Delay is 1 sec, State DOWN,
```

Refer to the exhibit. The network administrator configured the network to connect two disjoint networks and all the connectivity is up except the virtual link, which causes area 234 to be unreachable. Which two configurations resolve this issue? (Choose two.)

- A. R2**
router ospf 1
no area 234 virtual-link 10.34.34.4 area 234 virtual-link 0.0.0.44
- B. R2**
router ospf 1
no area 234 virtual-link 10.34.34.4
area 0 virtual-link 0.0.0.44
- C. R4**
router ospf 1
no area 234 virtual-link 10.23.23.2 area 0 virtual-link 0.0.0.22
- D. R2**
router ospf 1 router-id 10.23.23.2
- E. R4**
router ospf 1
no area 234 virtual-link 10.23.23.2 area 234 virtual-link 0.0.0.22

ANSWER: A E

Explanation:

Reference: <https://www.cisco.com/c/en/us/support/docs/ip/open-shortest-path-first-ospf/13703-8.html>

QUESTION NO: 8 - (DRAG DROP)

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

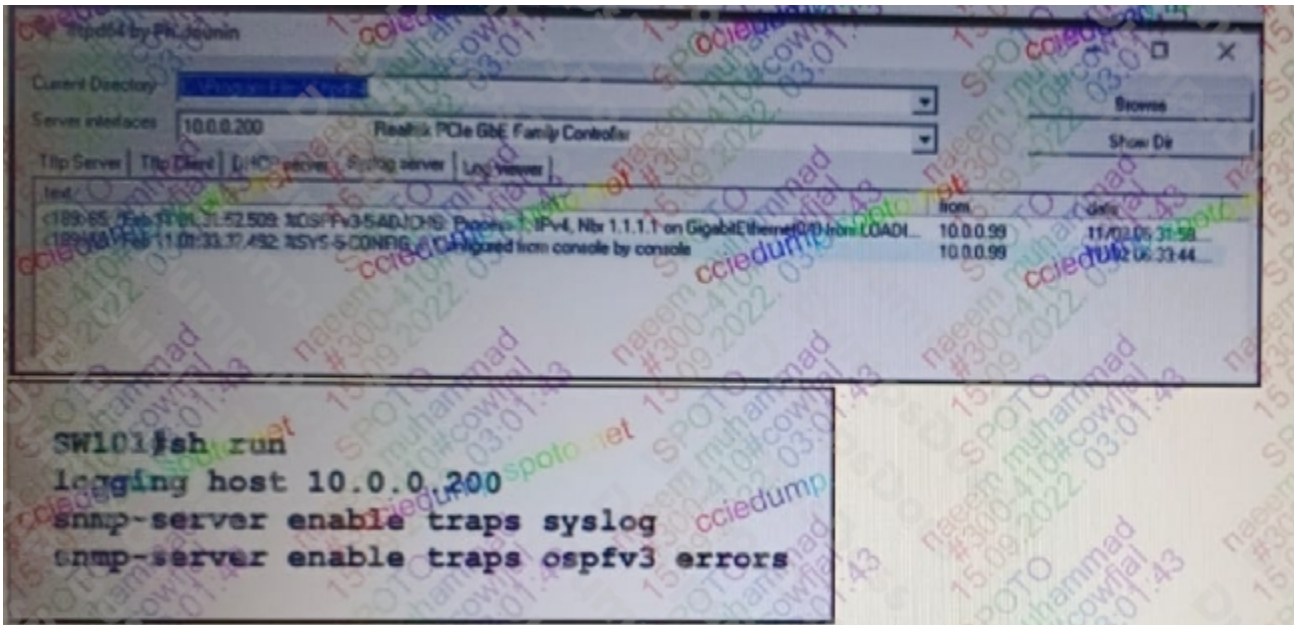
FEC	routers in the core of the provider network known as P routers
LSP	all traffic to be forwarded using the same path and same label
LER	routers that connect to the customer routers known as PE routers
LSR	used for exchanging label mapping information between MPLS enabled routers
LDP	path along which the traffic flows across an MPLS network

ANSWER:



QUESTION NO: 9

Refer to the exhibit.



An engineer configures SW101 to send OSPFv3 interfaces state change messages to the server. However, only some OSPFv3 errors are being recorded. which organization resolves the ..?

- A. snmp-server enable traps ospfv3 state-change if-state-change
- B. snmp-server-enable traps ospfv3 state-change restart-status-change
- C. snmp-server-enable traps ospfv3 state-change neighbor-state-change.
- D. snmp-server-enable traps ospfv3 state-change if-state-change neighbor-state-change

ANSWER: D

QUESTION NO: 10 - (DRAG DROP)

DRAG DROP

Drag and drop the addresses from the left onto the correct IPv6 filter purposes on the right.

Select and Place:

permit ip 2001:d8b:800:200c::/117 2001:0DBB:800:2010::/64 eq 443	Permit NTP from this source 2001:0D8B:0800:200c::1f
permit ip 2001:D88:800:200C::e/126 2001:0DBB:800:2010::/64 eq 514	Permit syslog from this source 2001:0D88:0800:200c::1c
permit ip 2001:d8b:800:200c::800 /117 2001:0DBB:800:2010::/64 eq 80	Permit HTTP from this source 2001:0D8B:0800:200c::0ff
permit ip 2001:D8B:800:200C::c/126 2001:0DBB:800:2010::/64 eq 123	Permit HTTPS from this source 2001:0D8B:0800:200c::07ff

ANSWER:

permit ip 2001:d8b:800:200c::/117 2001:0DBB:800:2010::/64 eq 443	permit ip 2001:D8B:800:200C::c/126 2001:0DBB:800:2010::/64 eq 123
permit ip 2001:D88:800:200C::e/126 2001:0DBB:800:2010::/64 eq 514	permit ip 2001:D88:800:200C::e/126 2001:0DBB:800:2010::/64 eq 514
permit ip 2001:d8b:800:200c::800 /117 2001:0DBB:800:2010::/64 eq 80	permit ip 2001:d8b:800:200c::800 /117 2001:0DBB:800:2010::/64 eq 80
permit ip 2001:D8B:800:200C::c/126 2001:0DBB:800:2010::/64 eq 123	permit ip 2001:d8b:800:200c::/117 2001:0DBB:800:2010::/64 eq 443

Explanation:

QUESTION NO: 11

What are two functions of IPv6 Source Guard? (Choose two.)

- A. It works independent from IPv6 neighbor discovery.
- B. It denies traffic from unknown sources or unallocated addresses.

- C. It uses the populated binding table to allow legitimate traffic.
- D. It denies traffic by inspecting neighbor discovery packets for specific patterns.
- E. It blocks certain traffic by inspecting DHCP packets for specific sources.

ANSWER: B C

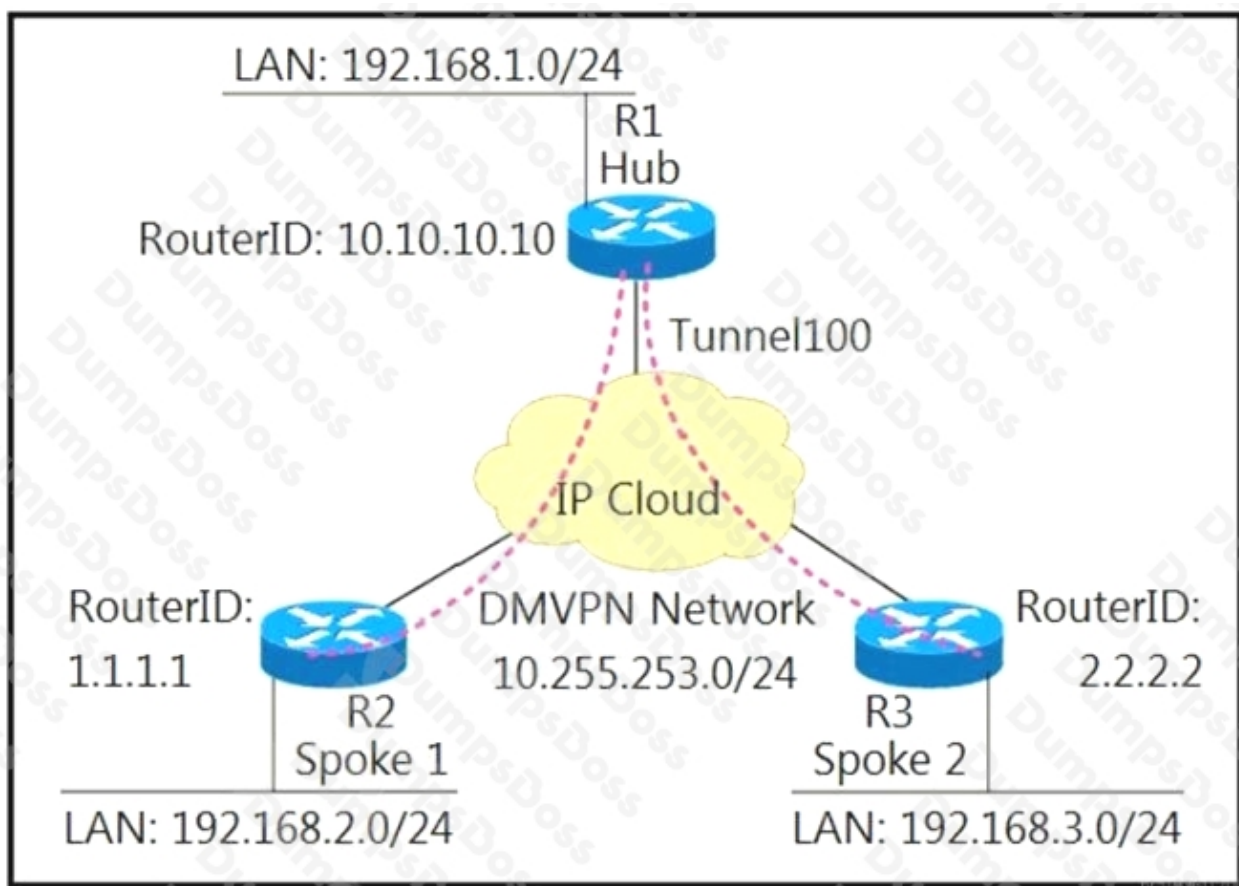
QUESTION NO: 12

An engineer failed to run diagnostic commands on devices using Cisco DNA Center. Which action in Cisco DNA Center resolves the issue?

- A. Enable Command Runner
- B. Enable APIs
- C. Enable CDP
- D. Enable Secure Shell

ANSWER: A

QUESTION NO: 13



```

*Mar 1 17:19:04.051: %OSPF-5-ADJCHG: Process 100, Nbr 1.1.1.1 on Tunnel100 from LOADING to FULL, Loading Done
*Mar 1 17:19:06.375: %OSPF-5-ADJCHG: Process 100, Nbr 1.1.1.1 on Tunnel100 from FULL to DOWN, Neighbor Down: Adjacency forced to reset
*Mar 1 17:19:06.627: %OSPF-5-ADJCHG: Process 100, Nbr 2.2.2.2 on Tunnel100 from LOADING to FULL, Loading Done
*Mar 1 17:19:10.123: %OSPF-5-ADJCHG: Process 100, Nbr 2.2.2.2 on Tunnel100 from FULL to DOWN, Neighbor Down: Adjacency forced to reset
*Mar 1 17:19:14.499: %OSPF-5-ADJCHG: Process 100, Nbr 10.10.10.10 on Tunnel100 from LOADING to FULL, Loading Done
*Mar 1 17:19:19.139: %OSPF-5-ADJCHG: Process 100, Nbr 10.10.10.10 on Tunnel100 from EXSTART to DOWN, Neighbor Down: Interface down or detached
*Mar 1 17:01:51.975: %OSPF-4-NONEIGHBOR: Received database description from unknown neighbor 192.168.1.1
*Mar 1 17:01:57.783: OSPF: Rcv LS UPD from 192.168.1.1 on Tunnel100 length 88 LSA count 1
*Mar 1 17:01:57.155: OSPF: Send UPD to 10.255.253.1 on Tunnel100 length 100 LSA count 2

```

Refer to the exhibit. A network administrator sets up an OSPF routing protocol for a DMVPN network on the hub router.

Which configuration command is required to establish a DMVPN tunnel with multiple spokes?

- A. ip ospf network point-to-point on the hub router
- B. ip ospf network point-to-multipoint on one spoke router
- C. ip ospf network point-to-multipoint on both spoke routers
- D. ip ospf network point-to-point on both spoke routers

ANSWER: C

QUESTION NO: 14

Refer to the exhibit.

```
ip address 4.4.4.4 255.255.255.0
|
interface FastEthernet1/0
Description **** WAN link ****
ip address 10.0.0.1 255.255.255.0
|
interface FastEthernet1/1
Description **** LAN Network ****
ip address 192.168.1.1 255.255.255.0
|
|
|
router ospf 1
router-id 4.4.4.4
log-adjacency-changes
network 4.4.4.4 0.0.0.0 area 0
network 10.0.0.1 0.0.0.0 area 0
network 192.168.1.1 0.0.0.0 area 10
|
```

A)

```
interface loopback0
ip address 4.4.4.4 255.255.255.0
ip ospf network broadcast
```

B)

```
interface loopback0
ip address 4.4.4.4 255.255.255.0
ip ospf interface type network
```

C)

```
interface loopback0
ip address 4.4.4.4 255.255.255.0
ip ospf network point-to-point
```

D)

```
interface loopback0
ip address 4.4.4.4 255.255.255.0
ip ospf interface area 10
```

A. Option

B. Option

C. Option

D. Option

ANSWER: A

QUESTION NO: 15

An engineer configured access list NON-CISCO in a policy to influence routes.

```
route-map PBR, deny, sequence 5
Match clauses:
ip address (access-list): NON-CISCO
Set clauses:
Policy routing matches: 0 packets, 0 bytes
route-map PBR, permit, sequence 10
Match clauses:
Set clauses:
ip next-hop 192.168.1.5
Policy routing matches: 389362063 packets, 222009685077 bytes
```

What are the two effects of this route map configuration? (Choose two.)

- A. Packets are forwarded using normal route lookup.
- B. Packets are forwarded to the default gateway.
- C. Packets are dropped by the access list.
- D. Packets are evaluated by sequence 10.
- E. Packets are not evaluated by sequence 10.

ANSWER: B D

QUESTION NO: 16

IPv6 is enabled in the infrastructure to support customers with an IPv6 network over WAN and to connect the head office to branch offices in the local network. One of the customers is already running IPv6 and wants to enable IPv6 over the DMVPN

network infrastructure between the headend and branch sites. Which configuration command must be applied to establish an mGRE IPv6 tunnel neighborhood?

- A. tunnel protection mode ipv6
- B. ipv6 unicast-routing
- C. ipv6 nhrp holdtime 30
- D. tunnel mode gre multipoint ipv6

ANSWER: D

QUESTION NO: 17

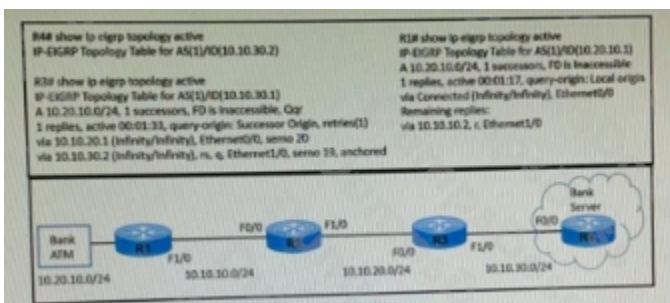
When configuring Control Plane Policing on a router to protect it from malicious traffic, an engineer observes that the configured routing protocols start flapping on that device. Which action in the Control Plane Policy prevents this problem in a production environment while achieving the security objective?

- A. Set the conform-action and exceed-action to transmit initially to test the ACLs and transmit rates and apply the Control Plane Policy in the output direction
- B. Set the conform-action and exceed-action to transmit initially to test the ACLs and transmit rates and apply the Control Plane Policy in the input direction
- C. Set the conform-action to transmit and exceed-action to drop to test the ACLs and transmit rates and apply the Control Plane Policy in the input direction
- D. Set the conform-action to transmit and exceed-action to drop to test the ACLs and transmit rates and apply the Control Plane Policy in the output direction

ANSWER: B

QUESTION NO: 18

Refer to the exhibit.



A bank ATM site has difficulty connecting with the bank server. A network engineer troubleshoots the issue and finds that R4 has no active route to the bank ATM site. Which action resolves the issue?

- A. Advertise 10.10.30.0/24 subnet in R1 EIGRP AS.

- B. EIGRP peering between R3 and R4 to be fixed.
- C. EIGRP peering between R1 and R2 to be fixed.
- D. Advertise 10.10.30.0/24 subnet in R3 EIGRP AS.

ANSWER: D

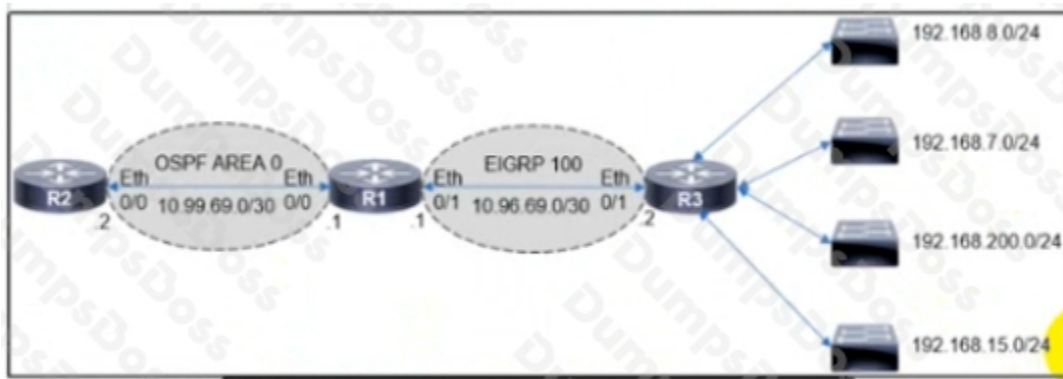
QUESTION NO: 19

What are two MPLS label characteristics? (Choose two.)

- A. The label edge router swaps labels on the received packets.
- B. Labels are imposed in packets after the Layer 3 header.
- C. LDP uses TCP for reliable delivery of information.
- D. An MPLS label is a short identifier that identifies a forwarding equivalence class.
- E. A maximum of two labels can be imposed on an MPLS packet.

ANSWER: C D

QUESTION NO: 20



```
R1#show route-map
route-map FROM->EIGRP, permit, sequence 10
  Match clauses:
    ip address (access-lists): 10
  Set clauses:
    Policy routing matches: 0 packets, 0 bytes
R1#show run | sec router
router eigrp 100
  network 10.96.69.0 0.0.0.3
  no auto-summary
  eigrp router-id 1.1.1.1
router ospf 100
  router-id 1.1.1.1
  log-adjacency-changes
  redistribute eigrp 100 subnets route-map FROM->EIGRP
  network 10.99.69.0 0.0.0.3 area 0
R1#show ip access-list
Standard IP access list 10
  10 permit 192.168.16.0, wildcard bits 0.0.3.255
  11 permit 192.168.0.0, wildcard bits 0.0.7.255
  20 deny any
```

Refer to the exhibit The engineer configured route redistribution in the network but soon received reports that R2 cannot access 192.168.7.0/24 and 192.168.15.0/24 subnets Which configuration resolves the issue?

```
● R1(config)#ip access-list standard 10
R1(config-std-nacl)#no 10 permit
R1(config-std-nacl)#no 11 permit
R1(config-std-nacl)#10 permit 192.168.0.0 0.0.3.255
R1(config-std-nacl)#11 permit 192.168.8.0 0.0.3.255
```

```
● R1(config)#ip access-list standard 10
R1(config-std-nacl)#no 10 permit
R1(config-std-nacl)#no 11 permit
R1(config-std-nacl)#10 permit 192.168.0.0 0.0.7.255
R1(config-std-nacl)#11 permit 192.168.8.0 0.0.3.255
```

```
● R1(config)#ip access-list standard 10
R1(config-std-nacl)#no 10 permit
R1(config-std-nacl)#no 11 permit
R1(config-std-nacl)#10 permit 192.168.0.0 0.0.3.255
R1(config-std-nacl)#11 permit 192.168.8.0 0.0.7.255
```

```
● R1(config)#ip access-list standard 10
R1(config-std-nacl)#no 10 permit
R1(config-std-nacl)#no 11 permit
R1(config-std-nacl)#10 permit 192.168.4.0 0.0.3.255
R1(config-std-nacl)#11 permit 192.168.12.0 0.0.3.255
```

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

ANSWER: D