

➤ **Vendor: Cisco**

➤ **Exam Code: 300-515**

➤ **Exam Name: Implementing Cisco Service Provider VPN Services (SPVI)**

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**QUESTION 1**

Refer to the exhibit. The CE router has established a BGP peering with the PE router, and the CE will use the core infrastructure of the PE as a backbone carrier to support CSC.

Which additional task can you perform to complete the configuration?

**CE Router**

```
router bgp 65001
  address-family ipv4 unicast
    redistribute ospf 1
    allocate-label all
  neighbor 192.168.1.25
    remote-as 65012
```

**PE Router**

```
router bgp 65012
  vrf custrouter
    rd 65001:65012
    address-family ipv4 unicast
      allocate-label all
      redistribute static
    neighbor 192.168.1.24
      remote-as 65001
    address-family ipv4 labeled-unicast
```

- A. Configure static routing on the CE router.
- B. Configure the address-family ipv4 labeled-unicast command under the neighbor configuration of the CE router for the PE.
- C. Change the rd value to 65001:65001 under the VRF section of the PE router.
- D. Configure OSPF on the PE router.

**Answer: D**

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**QUESTION 2**

Refer to the exhibit. Which statement describes the result of this configuration?

**R1**

```
router ospf 1 vrf custabc
network 192.168.1.0 0.0.0.255 area 1
redistribute bgp 65001 metric-type 1 subnets
```

- A. R1 redistributes BGP routes into the OSPF process of VRF custabc as E1 routes.
- B. R1 redistributes BGP routes into the OSPF process of VRF custabc as E2 routes.
- C. R1 mutually redistributes routes between BGP 65001 and the OSPF process of VRF custabc.
- D. R1 redistributes BGP routes into the OSPF process of VRF custabc as OIA routes.

**Answer: A**

**QUESTION 3**

You are writing the requirements for an MPLS L3VPN environment that uses MP-BGP between PE routers. In this environment, route targets and route distinguishers need to be advertised between the PE routers. Which three operations meet these requirements? (Choose three.)

- A. mandatory creation of PE-to-PE BGP sessions between the outgoing interface IP addresses
- B. advertisement of standard communities, enabled on the PE-to-PE BGP neighbors
- C. creation of PE-to-PE BGP sessions between loopback IP addresses
- D. full mesh of IBGP sessions
- E. full mesh of EBGP sessions and partial mesh of IBGP sessions
- F. advertisement of extended communities, enabled on the PE-to-PE BGP neighbors

**Answer: CDF**

**QUESTION 4**

Which is the primary function of a MPLS L3 VPN route target?

- A. It imports and exports identified routes into selected VRFs.
- B. It uniquely identifies NLRIs that have the same numeric value.
- C. It imports the external routes it identifies into VRFs that support Internet traffic
- D. It supports QoS by classifying traffic by file type when it applies MPLS EXP bits to each packet.

**Answer: A**

**QUESTION 5**

Which two statements about MPLS L3 VPN RDs are true? (Choose two.)

- A. They enable EIGRP to use address families to separate traffic between IPv4 and VPNv4.
- B. They are represented as 32-bit values
- C. They are represented as 64-bit values.
- D. They enable OSPF to import and export routes into the global routing table of a router.
- E. They allow BGP to uniquely identify duplicate routes.

**Answer: CE**

**QUESTION 6**

Which statement describes the no bgp default route-target filter command?

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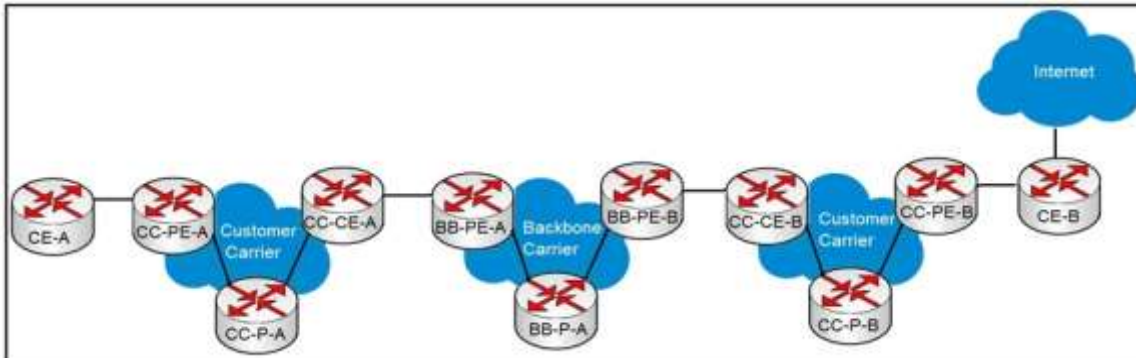
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- A. Prefixes that are received with route targets and distinguisher are accepted.
- B. Prefixes that are received with route targets and distinguisher are not accepted.
- C. Prefixes that are received with route targets that are not imported at the PE are not accepted.
- D. Prefixes that are received with route targets that are not imported at the PE are accepted.

**Answer: D**

**QUESTION 7**

Refer to the exhibit. A customer carrier running MPLS VPN wants to utilize a backbone carrier to forward traffic and exchange VPNv4 prefixes between the two customer carrier networks depicted. Which two sets of routers must establish MP-iBGP sessions? (Choose two.)



- A. BB-PE-A and CC-PE-B
- B. CC-PE-A and CC-PE-B
- C. BB-PE-A and BB-PE-B
- D. CC-PE-A and BB-PE-A
- E. BB-PE-A and BB-P-A
- F. CC-PE-A and CC-P-A

**Answer: BC**

**QUESTION 8**

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

```
ip vrf mvpn-extranet
rd 12:1
vpn id 12:1
route-target import 12:2
route-target export 12:3
mdt default mpls mldp 192.168.1.2
exit
ip multicast-routing vrf mvpn-extranet
```

- A. The mroute table is cleared.
- B. Router 1 accepts multicast routes with a tag of 12:1
- C. A Cisco MPLS TE tunnel is generated with 192.168.1.2 as the source IP address of router 1.
- D. An LSP virtual interface tunnel is created.

**Answer: B**

**QUESTION 9**

Refer to the exhibit. Which statement about this command is true?

```
mdt default mpls mldp 2.2.2.2
```

- A. It must be configured on each PE router to enable the PE routers to receive multicast traffic for this particular MVRF.
- B. It is used to set the designated router on a link using PIM-SM.
- C. It must be configured on the PE and CE router to enable MP-BGP to send labels for CSC.
- D. It is used to set the router that will server as the root bridge for STP.

**Answer: A**

**QUESTION 10**

Refer to the exhibit. Which statement describes the result of this BGP configuration?

```
R1

router bgp 65010
no bgp default ipv4-unicast
neighbor 192.168.1.1 remote-as 65010
address-family ipv4
neighbor 192.168.1.1 activate
```

- A. R1 operates using IPv4 and VPNv4 address families.
- B. R1 operates on IPv6 only because the bgp default ipv4-unicast command is missing.
- C. R1 establishes a VPNv4 eBGP relationship with neighbor 192.168.1.1.
- D. R1 establishes an iBGP relationship with peer 192.168.1.1.

**Answer: D**

**QUESTION 11**

Refer to the exhibit. While provisioning a new BGP session between the PE and CE router, you issue the as-override command. Which statement describes modification of the prefix before being sent to the CE router (10.10.10.1)?

```
PE(config-router-af)#neighbor 10.10.10.1 local-as 100
PE(config-router-af)#neighbor 10.10.10.1 remote-as 65000
PE(config-router-af)#neighbor 10.10.10.1 as-override

PE#show ip bgp vpnv4 vrf BLUE 10.10.10.10/32
BGP routing table entry for 111:1234:10.10.10.10/32, version 624
Paths: (1 available, best #2, table BLUE)
  Advertised to update-groups:
    38          39
 65000 65100 65222 65000
 192.168.40.1 (metric 31410) from 192.168.10.1 (192.168.10.1)
  Origin incomplete, localpref 100, valid, internal, best
  Extended Community:  RT:111:1234
  Originator: 192.168.20.1, Cluster list: 192.168.30.1
  mpls labels in/out nolabel/1146
```

- A. The fourth AS changes, but no other autonomous systems change.

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- B. The first and fourth autonomous systems change.
- C. The second and third autonomous systems change.
- D. The first AS changes, but no other autonomous systems change.

**Answer: D**

**QUESTION 12**

Refer to the exhibit. A technician is troubleshooting a connectivity issue and notices that there is no IS-IS adjacency between R1 and R2. What can the technician change to bring the IS-IS adjacency up?

```
R1#sho run sec router isis
ip router isis
router isis
net 49.0002.1010.2021.00
is-type level-1
spf-interval 110
```

```
R2#sho run sec router isis
ip router isis
router isis
net 49.0001.1010.2020.00
is-type level-2-only
set-overload-bit
spf-interval 100
redistribute static ip
```

- A. Change R2's net address to be in the same area as R1.
- B. Change R1's is-type to level-2-only
- C. Change R1's net address to be in the same area as R2.
- D. Change R2's configuration to no longer set the overload bit.

**Answer: B**

**QUESTION 13**

Which BGP feature causes to replace the AS number of originating router with the AS number of the sending router?

- A. route reflectors
- B. route dampening
- C. confederations
- D. AS override

**Answer: D**

**QUESTION 14**

Refer to the exhibit. PE1 and PE2 are exchanging VPNv4 routes for CE1 and CE2, and PE3 contains the default route to the internet. If the three devices are operating normally, which two conclusions describe this configuration? (Choose two.)



<b>PE1</b> ip vrf CE1 rd 111:1 route-target export 100:1 route-target import 200:2	<b>PE2</b> ip vrf CE2 rd 112 :2 route-target export 200:2 route-target import 100:1 route-target import 300:3
<b>PE3</b> ip vrf Internet rd 333:3 route-target export 300:3 route-target import 100:1 route-target import 200:2	

- A. The CE1 and CE2 VRFs can exchange routes only between their respective VRFs on PE1 and PE2.
- B. All three routers must be running a distance-vector routing protocol.
- C. All three routers must be running MP-BGP.
- D. The CE1 and CE2 VRFs can access the default route provided by the Internet VRF.
- E. Only the CE2 VRF can access the default route provided by the Internet VRF.

**Answer:** AC

#### **QUESTION 15**

The network engineering group of a large ISP needs to harden the management plane of its Cisco 9000 Series ASRs. While addressing IPv6 ICMP issues, they realized they have to limit the rate at which IPv6 ICMP error messages are sent out on the network. Which command do they need to apply?

- A. icmp ipv6 rate-limit unreachable 1000
- B. ipv6 rate-limit 1000
- C. icmp ipv4 rate-limit unreachable 1000
- D. ipv6 icmp error-interval 50 20

**Answer:** D

#### **QUESTION 16**

Which optional information can be included with an IPv6 ping to support the troubleshooting process?

- A. IPv4 IP address
- B. source MAC address
- C. destination MAC address
- D. IPv6 hostname

**Answer:** D

#### **QUESTION 17**

Which two statements about implementing a separate MPLS VPN to provide customers Internet access are correct? (Choose two.)

- A. The Internet gateway router will act as a CE router.
- B. Customers will use separate interfaces for VPN and Internet access.
- C. Customers are assigned to the Internet VPN.

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D. Internet routes will be leaked from the PE global routing table to the customer VRF.

**Answer:** AC

**QUESTION 18**

Which flavor of MPLS Layer 3 VPN has MPLS enabled on PE-CE links?

- A. basic
- B. CSC
- C. inter-AS
- D. AToM
- E. VPLS

**Answer:** B

**QUESTION 19**

In MPLS Layer 3 VPN implementations, what is used on the PE router to isolate potential overlapping routing information between different customers?

- A. route targets
- B. VRFs
- C. VC IDs
- D. pseudowire IDs
- E. pseudowire classes

**Answer:** B

**QUESTION 20**

Which utility can you use to validate an LSP in an MPLS environment?

- A. uRPF
- B. MPLS LSP ping
- C. logging
- D. RSVP

**Answer:** B

**QUESTION 21**

What is the primary function of a VRF on a router?

- A. It enables the router to support multiple separate routing tables, which allows the device to handle overlapping IP addresses.
- B. It enables a router to run BGP and a distance vector routing protocol at the same time, which allows it to serve as a VPN endpoint between remote sites.
- C. It enables a router to configure VLANs locally, which provides segregation between networks.
- D. It enables the router to provide faster switching through the network by using labels to identify the input and output interfaces for neighbor routers.

**Answer:** A

**QUESTION 22**

Which two statements describe primary differences between MPLS Layer 2 and Layer 3 VPNs? (Choose two.)

- A. Layer 2 VPNs use IPsec tunneling, but Layer 3 VPNs use L2TPv3 tunneling.
- B. Layer 2 VPNs use AToM, but Layer 3 VPNs use MPLS/BGP.

- C. Layer 2 VPNs use BGP, but Layer 3 VPNs use VPLS.
- D. Layer 2 VPNs use L2TPv3 tunneling, but Layer 3 VPNs use GRE tunneling.
- E. Layer 2 VPNs use IPsec tunneling, but Layer 3 VPNs use pseudowires to provide tunneling.

**Answer:** BD

**QUESTION 23**

Refer to the exhibit. A network engineer has been called to configure the four PE devices in order to enable full communication among the four CE devices connected to them. While starting to configure, he experienced a connectivity issue.

Which two tasks should the engineer perform in order to begin the process correctly? (Choose two.)

<b>PE1</b> ip vrf CE1 rd 101:1 route-target export 100:1 route-target import 200:2	<b>PE2</b> ip vrf CE2 rd 202:2 route-target export 200:2 route-target import 100:1
<b>PE3</b> ip vrf CE3 rd 303:3 route-target export 300:3 route-target import 400:4	<b>PE4</b> ip vrf CE4 rd 404:4 route-target export 400:4 route-target import 300:3

- A. Configure PE3 to export route-targets 100:1 and 200:2.
- B. Configure PE3 to import route-targets 100:1 and 200:2.
- C. Configure PE4 to import route-targets 101:1 and 202:2.
- D. Configure PE2 to export route-targets 300:3 and 400:4.
- E. Configure PE1 to import route-targets 300:3 and 400:4.

**Answer:** AB

**QUESTION 24**

Refer to the exhibit. If the two devices are operating normally, which two conclusions can you draw from this configuration? (Choose two.)

<b>PE1</b> ip vrf celvpn rd 111:1 route-target export 111:1 route-target import 222:2  interface FastEthernet0/0/0 ip vrf forwarding celvpn ip address 192.168.0.1 255.255.255.0  router ospf 1 vrf celvpn network 192.168.0.0 0.0.0.255 area 1	<b>CE1</b> interface FastEthernet0/0/0 ip address 192.168.0.2 255.255.255.0  interface FastEthernet0/0/1 ip address 192.168.1.2 255.255.255.252  router ospf 100 network 192.168.0.0 0.0.0.255 area1  router bgp 65600 neighbor 192.168.1.1 remote-as 65600
--	---

- A. CE1 must use OSPF to establish a neighbor relationship with PE1.
- B. PE1 labels the routes it learns from CE1 with the route-target 222:2 and shares them with its VPNv4 peers.



- C. PE1 labels the routes it learns from CE1 with the route-target 111:1 and shares them with its VPNv4 peers.
- D. The PE-CE routes between the devices are being exchanged by OSPF
- E. CE1 is supporting CSC.

**Answer:** AD

**QUESTION 25**

Which two frames can be configured on an Ethernet flow point? (Choose two.)

- A. of a specific VLAN
- B. with different type of service values
- C. with identical type of service value
- D. with different class of service values
- E. with no tags

**Answer:** AE

**QUESTION 26**

In an Ethernet Virtual Circuit environment, which restriction do bridge domains have when STP is running?

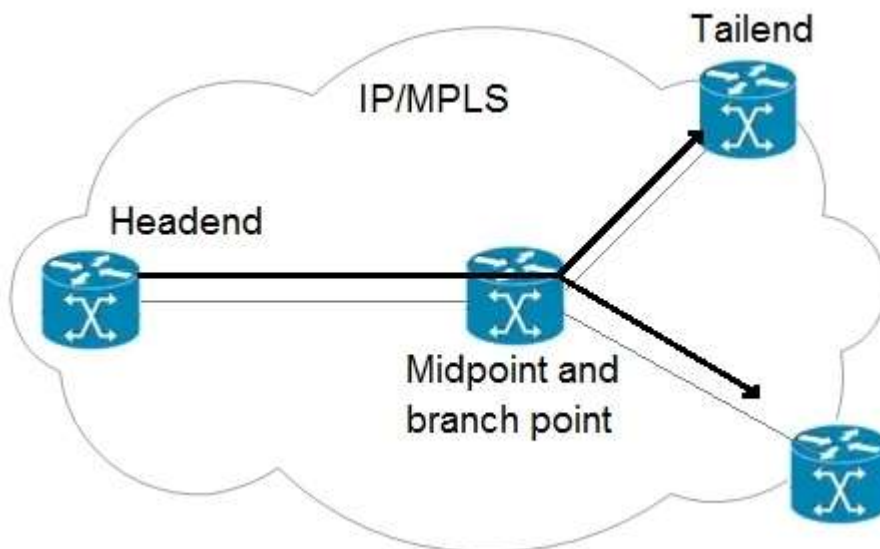
- A. The STP mode must be RSTP or PVST+
- B. Bridge domains must be mapped to a different VLAN.
- C. The STP mode must be MSTP
- D. Bridge domains must belong to different MST instances.

**Answer:** C

**QUESTION 27**

Refer to the exhibit. An engineer is implementing an MPLS P2MP TE solution.

Which type of router can serve as the midpoint router and the tailend router in this P2MP TE network implementation?



- A. headend
- B. source
- C. transit
- D. bud

**Answer: D**

**QUESTION 28**

In MPLS Layer 3 VPN implementations, which mechanism is used to control which routes are imported to a VRF?

- A. RT
- B. RD
- C. VC ID
- D. PW ID
- E. VRF ID

**Answer: A**

**QUESTION 29**

Which option is used as a loop prevention mechanism to support MPLS VPN customers with multihomed sites?

- A. BGP down bit
- B. sham links
- C. AS override
- D. SOO extended BGP community
- E. allowas-in

**Answer: D**

**QUESTION 30**

When implementing VPLS on Cisco IOS XR routers, the VPLS PW neighbors can be statically defined under which configuration mode?

- A. bridge group
- B. bridge-domain
- C. vfi
- D. mpls ldp
- E. l2transport

**Answer: C**