

➤ **Vendor: Cisco**

➤ **Exam Code: 300-515**

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

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➤ **(Updated in [November/2022](#))**

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QUESTION 31

An engineer is investigating an EVPN traffic flow issue. Which type of traffic should the engineer allow in an EVPN Tree Service in order to fix this issue?

- A. known unicast from a leaf to another leaf
- B. unknown unicast from a leaf to another leaf
- C. multicast from a leaf to another leaf
- D. known unicast from a root to another root

Answer: D

QUESTION 32

An engineer is investigating an issue. Which command should an engineer use on a Cisco IOS XE device to display the contents of the LFIB?

- A. show mpls forwarding-table
- B. show mpls ldp neighbors
- C. show mpls ldp labels
- D. show mpls ldp bindings

Answer: A

QUESTION 33

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

```
Router# show mpls forwarding-table
```

Local label	Outgoing label or VC	Prefix or Tunnel Id	Bytes switched	Outgoing interface	Next Hop
29	Pop tag	10.22.22.22/32	0	Gi1/1/0	172.32.0.1
32	0	10.24.24.24/32	0	Gi1/0/0	192.168.1.2
33	0	172.24.24.24/32	0	Gi1/0/0	192.168.1.2
34	0	192.168.0.0/8	0	Gi1/0/0	192.168.1.2
35	0	10.25.25.25/32	0	Gi1/0/0	192.168.1.2
36	0	172.16.0.0/8	0	Gi1/0/0	192.168.1.2
37	25	10.26.26.26/32	0	Gi1/0/0	192.168.1.22
38	0	10.34.34.34/32	0	Gi1/0/0	192.168.1.2

- A. The router IP 192.168.1.2 sent an implicit null, and the output is from the penultimate LSR.
- B. The adjacent router is the egress LSR and has mpls ldp explicit-null configured.
- C. The adjacent LSR router configured mpls label range 0.
- D. The zero in the second column is the normal behavior of an egress router LSR.

Answer: B

QUESTION 34

An engineer is troubleshooting an ongoing network outage. Which command should he use that can display the live log files for a process or service running on a network device?

- A. traceroute
- B. show run
- C. ping
- D. debug

Answer: D

QUESTION 35

Which tool identifies the point of failure in a P2MP LSP from the ingress LSR?

- A. Jitter TLV
- B. SPAN
- C. P2MP traceroute
- D. P2MP ping

Answer: C

QUESTION 36

In a typical service provider environment, which two tools are used to help scale PE router connectivity requirements? (Choose two.)

- A. route reflectors
- B. VPNv4 address family
- C. originator ID
- D. cluster ID
- E. confederations

Answer: AE

QUESTION 37

An ISP provides a major client MPLS VPN for managed services. The MPLS engineering team needs to use the advanced VPN feature of selective VRF import so that only specific prefixes are present in the required VPNs. Which aspect of this feature must the team consider?

- A. A route must pass the import route map first and then the route target import filter.
- B. The routers that are imported in the VRF can be BGP and IGP routes, so other match conditions in the route map, besides communities, can be used.
- C. The import-map command is applied under the PE interface that connects to the CE router.
- D. A route is imported into the VRF only when at least one RT that is attached to the route matches one RT that is configured in the VRF and the route is permitted by the import route map.

Answer: D

QUESTION 38

While configuring the VRF Selection feature, you get an error message after typing the below statement:

```
Router(config)#no vrf selection source 172.16.0.0 255.255.0.0 vrf VRF1
```

Which action caused this message?

- A. the entry of an inconsistent IP address and mask for VRF Selection
- B. an attempt to configure a VRF instance on an interface that already has VRF Selection configured
- C. an attempt to remove a VRF Selection entry that does not exist
- D. an attempt to configure a VRF Selection table that does not exist

Answer: C

QUESTION 39

When verifying Layer 3 MPLS VPN operations, which Cisco IOS XR show command is best used to verify that the PE router is receiving the routes from the CE router?

- A. show route
- B. show route vrf vrf-name
- C. show bgp vpnv4 vrf vrf-name
- D. show bgp vpnv4 unicast ip-prefix

Answer: B

QUESTION 40

When implementing Layer 3 MPLS VPNs on Cisco IOS/IOS XE PE routers, which PE-to-CE routing protocol requires a separate routing process to be created for each VRF?

- A. EIGRP
- B. RIPv2
- C. OSPF
- D. BGP

Answer: C

QUESTION 41

Which three functions are performed by the PE router in an MPLS Layer 3 VPN? (Choose three.)

- A. exchanges routing updates with the CE router
- B. translates the CE routing information into VPNv4 routes
- C. exchanges VPNv4 routes with other PE routers over MP-BGP
- D. imports and exports RTs that are received from the P routers

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- E. exchanges RDs with the P routers
- F. exchanges VPN labels with the CE routers

Answer: ABC

QUESTION 42

Which two BGP attributes prevent loops in a route reflector environment? (Choose two.)

- A. cluster ID
- B. local preference
- C. origin
- D. originator ID
- E. AS_PATH

Answer: AD

QUESTION 43

An engineer needs to improve MPLS network management by implementing a set of tools to support the NOC engineers in troubleshooting network failures. Which feature should the engineer implement to check the connectivity of the MPLS LSP between the ingress and egress PE routers?

- A. MPLS OAM
- B. MPLS-TP
- C. LDP autodiscovery
- D. extended ping

Answer: A

QUESTION 44

Refer to the exhibit. A network operator is implementing EVPN IRB on PE1. Which two command placements enable the advertisement of Type 2 routes and what information do Type 2 routes contain? (Choose two.)

```
RP/0/0/CPU0:PE1#show run
evpn
no evi 100
no advertise-mac
!
!
vrf EVPN
address-family ipv4 unicast
import route-target
133:100
export route-target
133:100
!
!
interface BVI651
vrf EVPN
ipv4 address 192.168.100.1 255.255.255.0
mac-address 1337.1337.1337
```

- A. The operator adds in "host-routing" under the VRF EVPN.
- B. Type 2 routes contain MAC/IP information.
- C. Type 2 routes contain Ethernet Auto-Discovery information.
- D. The operator adds in "host-routing" under the BVI651 interface.
- E. Type 2 routes contain inclusive source-specific multicast route information.

Answer: BD

QUESTION 45

You try to configure MPLS VPN VRF Selection based on a source IP address on an interface that has VRF configured, but you receive an error.

Which action must you take to correct the problem?

- A. Change the source IP address.
- B. Add the IP address to the VRF table.
- C. Remove the VRF from the interface.
- D. Configure static routes for the VRF.

Answer: C

QUESTION 46

The CTO of a company requires the support of a network consultant to deliver an MPLS solution without resigning to a certain degree of redundancy and scalability. Which solution effectively scales to hundreds or thousands of sites?

- A. L2VPN with the broadcast traffic processed at the ingress PE.
- B. L3VPN with direct LSP connectivity between all PEs.
- C. L2VPN by encapsulating multiple frame formats with interworking.
- D. L3VPN using a hierarchical topology of N-PEs and U-PEs.

Answer: D

QUESTION 47

You are troubleshooting ARP connectivity issues for an Ethernet interface on an IOS XR network that runs IS-IS. You verify that the IGP protocol is running, but an ARP entry has not yet been created.

Which action should you take?

- A. debug ping packets
- B. debug ARP
- C. ping the connected neighbor
- D. verify the RIB table routes

Answer: C

QUESTION 48

Which two are characteristics of using a non-MPLS peer-to-peer model over a traditional overlay model? (Choose two.)

- A. The model is suited for nonredundant configurations.
- B. The configuration on a newly added site PE is updated automatically.
- C. Provider routers know the customer network topology.
- D. The customer specifies the exact site-to-site traffic profile.
- E. Routing information is exchanged between the customer router and one or a few PEs.

Answer: CE

QUESTION 49

In which configuration mode is a route distinguisher configured in a Cisco IOS XR router?

- A. config-vrf
- B. config-vrf-af
- C. config-bgp
- D. config-bgp-af
- E. config-bgp-vrf

Answer: E

QUESTION 50

Which Layer 2 VPN technology is implemented over an IP core network without the need for MPLS?

- A. VPLS
- B. VPWS
- C. AToM
- D. L2TPv3

Answer: D

QUESTION 51

Which two Layer 2 VPN methods support interworking between customer sites with different Layer 2 encapsulation at each end (for example, Frame Relay to Ethernet interworking)? (Choose two.)

- A. AToM
- B. VPLS
- C. GET VPN
- D. L2TPv3

Answer: AD

QUESTION 52

While troubleshooting an AToM L2VPN service, a network consultant notices that the AC Layer 2 encapsulations are different. Which action should the consultant take in order to make the MPLS L2VPN work?

- A. tag-rewrite on the ingress and egress PE router
- B. interworking IP configuration on the last PE router before label disposition
- C. nonrouted interworking setup to properly translate only the Layer 2 information from the AC
- D. interworking IP configuration on both the AC terminations on the PEs

Answer: D

QUESTION 53

Which mechanism reduces the network flooding caused by host ARP learning behavior?

- A. ARP suppression
- B. storm control
- C. root guard
- D. BPDU guard

Answer: A

QUESTION 54

What do EVPN single-active and all-active have in common?

- A. They are default gateway redundancy options.
- B. They are multihoming mechanisms used for CE devices.
- C. They are used to provide single connection from a CE device to a service provider.
- D. They are both roles that a designated router can take when MPLS is used with EVPN.

Answer: D

QUESTION 55

Refer to the exhibit. An engineer is trying to configure an EVPN VWPS. What is the issue with this configuration?

```
interface Loopback0
 ip address 1.1.1.1 255.255.255.255
 ip ospf 1 area 0
 !
interface GigabitEthernet0/1/0
 ip address 10.0.2.1 255.255.255.252
 !
service instance 101 ethernet
 encapsulation dot1q 101
 rewrite ingress tag pop 1 symmetric

 12vpn evpn instance 100 point-to-point
 !
vpws context vc100
 service target 2 source 1
 member GigabitEthernet0/1/0 service-instance 101
 !
interface GigabitEthernet0/1/1
 ip address 10.0.1.1 255.255.255.0
 ip ospf 1 area 0
 mpls ip
 !
router bgp 65500
 bgp router-id 1.1.1.1
 neighbor 2.2.2.2 remote-as 65501
 neighbor 2.2.2.2 update-source Loopback0
 !
 address-family ipv4
  neighbor 2.2.2.2 activate
 exit-address-family
 !
 address-family 12vpn evpn
  neighbor 2.2.2.2 activate
 exit-address-family
 !
12vpn evpn instance 100 point-to-point
 !
vpws context vc100
 service target 2 source 1
 member GigabitEthernet0/0/0
 !
```

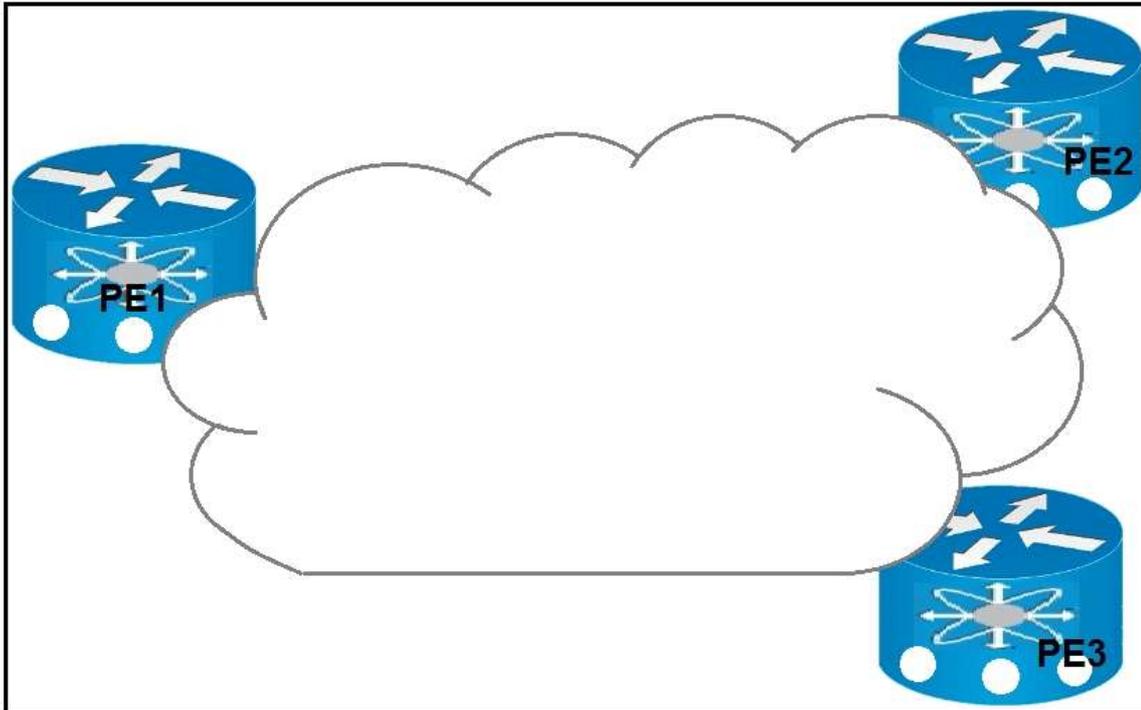
A. The member in the VPWS context should be the PE-facing interface.

- B. The 12vpn evpn command should be instance 101.
- C. Interface GigabitEthernet0/1/0 should not have any IP address.
- D. The service instance and the EVPN instance are different.

Answer: C

QUESTION 56

Refer to the exhibit. Which result occurs when PE1 learns a new MAC address and all three PEs are enabled with EVPN native?



- A. A system notification is sent to the network administrator that triggers the manual configuration of the new MAC address on PE2 and PE3.
- B. The new MAC address is sent by BGP to PE2 and PE3 as a Type 2 BGP route.
- C. The MAC address is entered into the CAM table and is classified for use on the native VLAN
- D. The MAC address is entered into the CAM table only if it is learned on the native VLAN.

Answer: B

QUESTION 57

While troubleshooting EoMPLS configuration problems, which three parameters should an engineer match between the two ends of the pseudowire configurations? (Choose three.)

- A. VLAN name
- B. Xconnect group name
- C. EFP subinterface number
- D. pseudowire ID
- E. MTU size
- F. control word usage

Answer: DEF

QUESTION 58

A network architect is troubleshooting the L2TPv3 tunneling security due to the untrusted nature of the underlying

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network. Which two L2TPv3 features does the architect deploy to address the ongoing issues? (Choose two.)

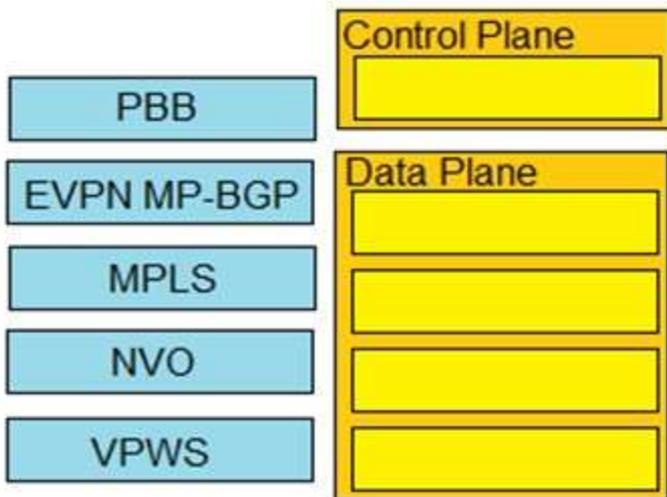
- A. TCP MD5 authentication
- B. control message hashing
- C. CHAP authentication
- D. control message rate limiting
- E. asymmetric mutual authentication with PSK

Answer: BC

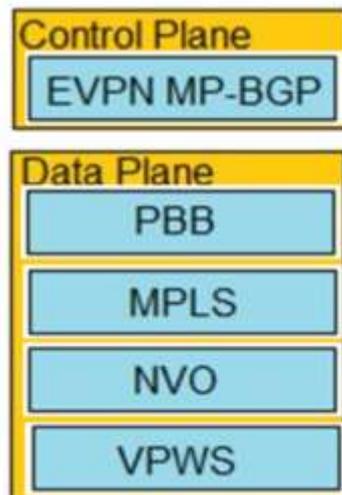
QUESTION 59

Drag and Drop Question

Drag and drop the EVPN components from the left onto the correct planes on the right.



Answer:



QUESTION 60

What must match in the EVPN and L2VPN configuration mode when configuring EVPN native in a router?

- A. interface
- B. address family
- C. bridge domain
- D. EVI

Answer: D

QUESTION 61

A customer has two sites over an MPLS cloud with Ethernet connections and requires one STP domain to be transparent over the MPLS provider. Which label-switching technology can the provider use without getting involved in learning the customer MAC addresses?

- A. L2TPV3
- B. EoMPLS
- C. VPLS
- D. H-VPLS

Answer: B