

EXAM PREPARATION MATERIAL

Practice files designed to help you understand exam patterns, question styles and the overall assessment format.

IMPORTANT NOTE



Please note that these files may not be up to date. However, the questions will help you understand the exam format and typical question patterns.



Stay connected with our support team for the latest file updates and exam-related information.

Question: 1

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: 2

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: 3

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: 4

Refer to the exhibit.

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

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.)

- 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: 5

Refer to the exhibit.

PE1 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	CE1 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 area 1 router bgp 65600 neighbor 192.168.1.1 remote-as 65600
---	---

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

- 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: 6

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

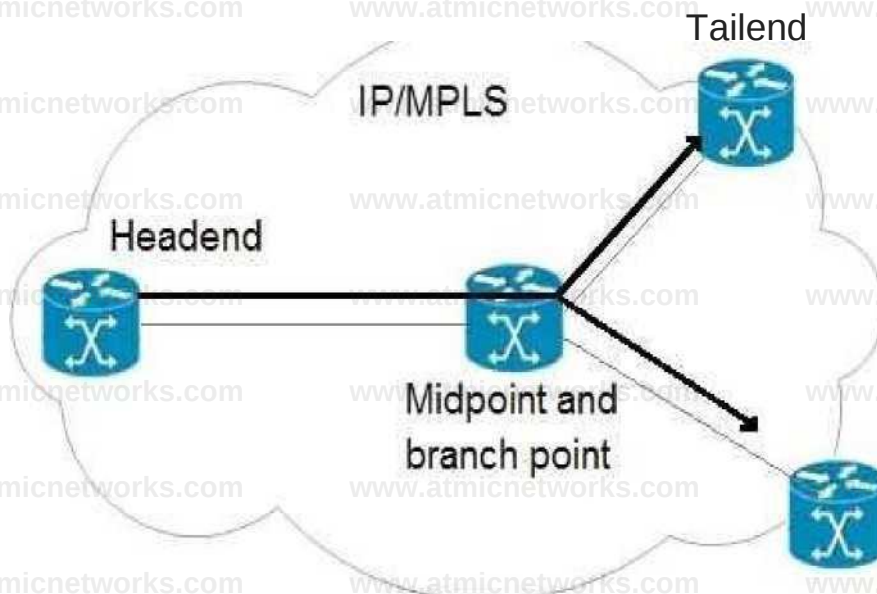
Answer: AE

Explanation: Reference:

<https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/cether/configuration/xe-3s/asr903/16-5-1/b-ce-xe-16-5-asr900/trunk-efp-support.html>

Question: 8

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

Explanation:

Question: 9

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

Reference:

<https://tools.ietf.org/html/draft-ietf-bess-evpn-etree-14>

Question: 10

An engineer is investigating an MPLS LDP 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

Explanation:

Reference:

<https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mpls/command/mp-cr-book/mp-s2.html>

Question: 11

Refer to the exhibit.

Router# show mpls forwarding-table					
Local label	Outgoing label or VC	Prefix or Tunnel Id	Bytes label 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

Which statement about this output is true?

- 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: 12

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: 13

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k_r5-3/mpls/configuration/guide/b-mpls-cg53x-asr9k/b-mpls-cg53x-asr9k_chapter_01000.html

Question: 14

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: 15

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

Explanation:

Reference:

<https://www.ccexpert.us/mps/configuring-selective-vrf-import.html>

Question: 16

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/ios/12_2/12_2sz/feature/guide/122szvrf.html

Question: 17

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

Explanation:

Reference:

<https://www.ciscopress.com/articles/article.asp?p=2756480&seqNum=10>

Question: 18

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k_r5-3/mpls/configuration/guide/b-mpls-cg53x-asr9k/b-mpls-cg53x-asr9k_chapter_01000.html

Question: 19

Refer to the exhibit.

RP/0/0/CPU0:PE1#show run

evpn no evi 100

no advertise-mac

!

!

vrfEVPN

address-family ipv4 unicast

import route-target

133:100

export route-target

133:100

interface BVI651

vrfEVPN

ipv4 address 192.168.100.1 255.255.255.0

mac-address 1337.1337.1337

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.)

- 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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/iosxr/ncs5500/vpn/61x/b-ncs5500-l2vpn-configuration-guide-61x/b-ncs5500-l2vpn-configuration-guide-61x_chapter_01010.html

Question: 20

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/ios/12_0s/feature/guide/vrfselec.html

Question: 21

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: 22

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: 23

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

Explanation:

Reference:

<http://etutorials.org/Networking/MPLS+VPN+Architectures/Part+2+MPLS-based+Virtual+Private+Networks/Chapter+7.+Virtual+Private+Network+VPN+Implementation+Options/Overlay+and+Peer-to-peer+VPN+Model/>
Topic 2, Layer 2 VPNs

Question: 24

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp_l2_vpns/configuration/xr-16-11/mp-l2-vpns-xr-16-11-book/l2vpn-interworking.html

Question: 25

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

Explanation:

Reference:

<https://www.cisco.com/c/en/us/products/collateral/switches/nexus-7000-series-switches/white-paper-c11-735015.html>

Question: 26

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k-r6-2/lxvpn/configuration/guide/b-l2vpn-cg-asr9000-62x/b-l2vpn-cg-asr9000-62x_chapter_01011.html

Question: 27

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

12vpn evpn instance 100 point-to-point 1
 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
1
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
```

```

1
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
1
vpws context vc100
service target 2 source 1
member GigabitEthernet0/0/0

```

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

- 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.

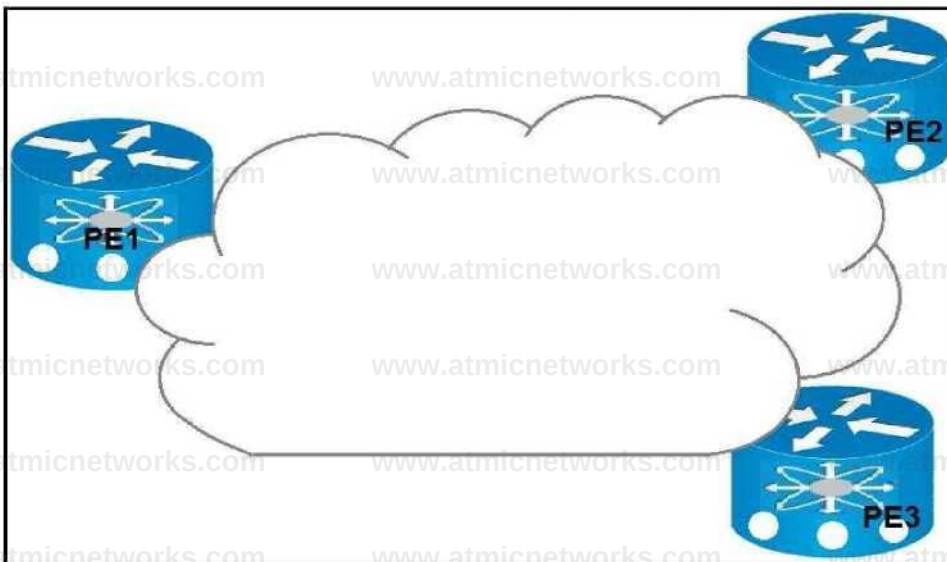
Answer: C

Explanation: Reference:

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp_l2_vpns/configuration/xr-3s/asr903/16-7-1/b-mpls-l2-vpns-xr-16-7-asr900/epvn_vpws_single_homed.pdf

Question: 28

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k-r6-4/lxvpn/configuration/guide/b-l2vpn-cg-asr9000-64x/b-l2vpn-cg-asr9000-64x_chapter_01011.html

Question: 29

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

Explanation:

Reference:

<https://www.cisco.com/c/en/us/support/docs/multi-protocol-label-switching-mpls/mpls/213238-mpls-l2vpn-pseudowire.html>

Question: 30

A network architect is troubleshooting the L2TPv3 tunneling security due to the untrusted nature of the underlying network. Which two L2TPv3 features does the architect deploy to address the ongoing issues? (Choose two.)

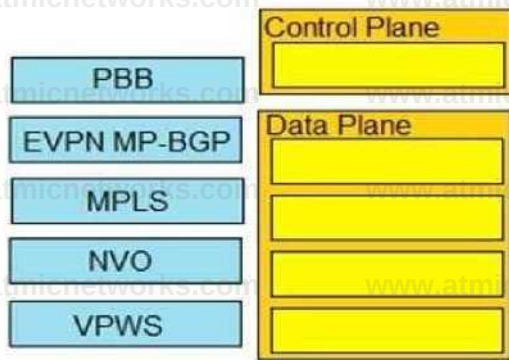
- A. TCP MD5 authentication
- B. control message hashing
- C. CHAP authentication
- D. control message rate limiting
- E. asymmetric mutual authentication with PSK

Answer: BC

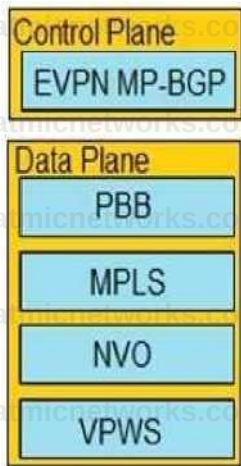
Question: 31

DRAG DROP

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



Answer:



Reference:

https://www.cisco.com/c/dam/m/en_us/network-intelligence/service-provider/digital-transformation/knowledge-network-webinars/pdfs/0420-epn-ckn.pdf slide 8

Question: 32

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/routers/asr9000/software/asr9k-r6-2/lxvpn/configuration/guide/b-l2vpn-cg-asr9000-62x/b-l2vpn-cg-asr9000-62x_chapter_01011.html

Question: 33

An engineer is troubleshooting AToM on an IOS XE router and receives an error when creating the xconnect. Which command does he need to complete to create the xconnect in AToM?

- A. encapsulation mpls
- B. encapsulation l2tpv3
- C. protocol l2tpv3
- D. protocol none

Answer: A

Question: 34

```
configure
router bgp 64520
  address-family l2vpn evpn
    neighbor 192.168.1.1
```

```
configure
l2vpn
  xconnect group evpn-test
  p2p evpn12
  interface TenGigE0/1/0/1
    neighbor evpn evi 12 target 10 source 11
```

Which effect of this configuration is true?

- A. It configures VPWS multihomed.
- B. It configures VPWS single homed.
- C. It configures an IPv4 peering with 192.168.1.1
- D. It configures MPLS traffic engineering.

Answer: B

Explanation:

Reference:

<https://www.ciscolive.com/c/dam/r/ciscolive/emea/docs/2019/pdf/BRKSPG-2798.pdf>

Question: 35

An engineer is troubleshooting an EoMPLS circuit on a Cisco IOS XR router interface that removes a VLAN

- A. interface GigabitEthernet 0/10.l2transport
encapsulation dot1q 10
rewrite ingress tag pop 1 symmetric
l2vpn
xconnect group 103588
p2p 103588
interface GigabitEthernet 0/10.10
neighbor ipv4 10.10.10.2 pw-id 103588
- B. interface GigabitEthernet 0/10.10
encapsulation dot1q 10
rewrite ingress tag pop 1 symmetric
l2vpn

```

xconnect group 103588
p2p 103588
interface GigabitEthernet 0/10.10
neighbor ipv4 10.10.10.2 pw-id 103588
C. interface GigabitEthernet 0/10.10 l2transport encapsulation dot1q 10 l2vpn
xconnect group 103588 p2p 103588
interface GigabitEthernet 2/10.10 neighbor ipv4 10.10.10.2 pw-id 103588
D. interface GigabitEthernet 0/10.10 l2transport encapsulation dot1q 10
rewrite ingress tag translate 1-to-1 dot1ad 10 symmetric
l2vpn
xconnect group 103588 p2p 103588
interface GigabitEthernet 0/10.10
neighbor ipv4 10.10.10.2 pw-id 103588

```

Answer: C

Question: 36

DRAG DROP
Refer to the exhibit.

```

interface GigabitEthernetO/1
switchport trunk allowed vlan none
switchport mode trunk
service instance 2 ethernet
encapsulation dot1q 10
xconnect 192.168.2.2 22 encapsulation mpls

```

Drag and drop the EVC configuration items from the left onto the correct descriptions on the right.

switchport mode trunk	It denies globally defined VLANs from egressing and ingressing the port.
service instance 2 ethernet	It allows the port to operate as an 802.1q trunk.
switchport trunk allowed vlan none	It classifies traffic under a defined process.
xconnect 192.168.2.2 22 encapsulation mpls	It allows the port to process VLAN 10 traffic in Service Instance 2.
encapsulation dot1q 10	It defines the pseudowire parameters.

Answer:

switchport trunk allowed vlan none

switchport mode trunk

service instance 2 ethernet

encapsulation dot1q 10

xconnect 192.168.2.2 22 encapsulation mpls

Question: 37

A network engineer is 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. RIPv2
- B. OSPF
- C. BGP
- D. EIGRP

Answer: B

Question: 38

Which condition must be met before an environment can support CSC?

- A. The CSC-PE and CSC-CE must each be able to ping an interface in its respective global routing table.
- B. The CSC-PE and the CSC-CE must support IPv6.
- C. The CSC-PE and CSC-CE devices must be able to send labels to one another using BGP.
- D. The CSC-CE must support OSPFv3.

Answer: C

Question: 39

In Layer 3 MPLS VPN implementations, if some of the VPNv4 routes on one PE router do not appear on another PE router, what could be the problem?

- A. RD mismatch between the PE routers
- B. RT export and import configuration errors
- C. VRF name mismatch between the PE routers
- D. RD export and import configuration errors

Answer: B

Explanation:

Reference:

<http://blog.initialdraft.com/archives/1537/>

Question: 40

With Layer 3 MPLS VPN implementations on Cisco IOS XR PE routers, an interface is assigned to a VRF using the vrf command in which configuration mode?

- A. RP/0/RP0/CPU0:PE(config-bgp)#
- B. RP/0/RP0/CPU0:PE(config-if)#
- C. RP/0/RP0/CPU0:PE(config-bgp-af)#
- D. RP/0/RP0/CPU0:PE(config-vrf)#

Answer: B

Explanation: Reference:

https://www.cisco.com/c/en/us/td/docs/ios_xr_sw/iosxr_r3-7/mpls/configuration/guide/gc37v3.html

Question: 41

While implementing Layer 3 MPLS VPN, which feature should an engineer use at the PEs to transform the customer IPv4 prefixes into a unique 96-bit prefix

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

Answer: C

Question: 42

Which kind of traffic is supported in an MVPN Extranet?

- A. PIM dense mode with Reverse Path Forwarding
- B. PIM dense mode
- C. PIM sparse mode
- D. Bidirectional PIM

Answer: C

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipmulti_mvpn/configuration/xr-16/imc-mvpn-xr-16-book/imc-mc-vpn-extranet.html

Question: 43

Refer to the exhibit.

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

Which statement about this configuration is true?

- A. Router 1 will accept multicast routes with a route-target of 12:1.
- B. 192.168.1.2 must be reachable by all routers participating in the mvpn-intranet MVRP.
- C. Router 1 has statically defined thresholds for data MDT.
- D. The MVRP must be configured on each router on the customer and service provider networks.

Answer: A

Question: 44

Refer to the exhibit.

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
```

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?

- 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

Question: 45

Refer to the exhibit.

R1

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

Which statement describes the result of this configuration?

- 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: 46

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: CDE

Question: 47

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 NLRI 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: 48

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: 49

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

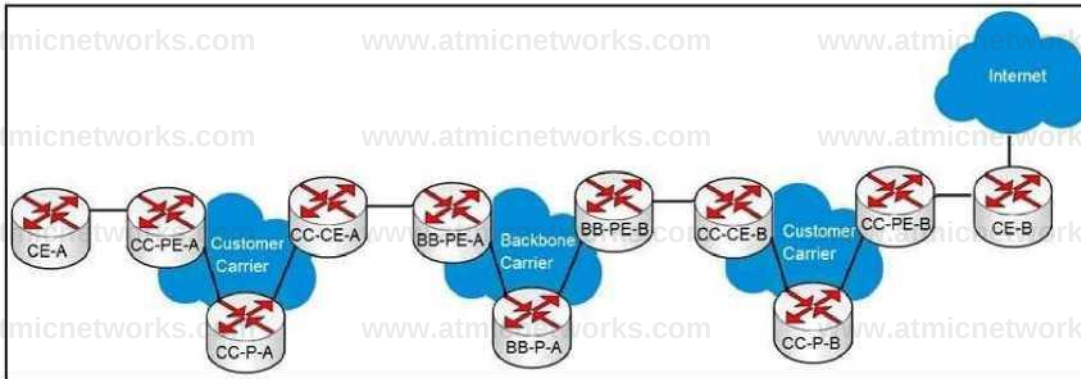
- A. Prefixes that are received with route targets and distinguisher are accepted.

- 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: 50

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 carriers 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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mp_ias_and_csc/configuration/12-2sx/mp-ias-and-csc-12-2sx-book/mp-carrier-bgp.html

Question: 51

ip vrf mvpn-extranet

rd 12:1

vpn id 12:1

route-target import 12:2

route-target export 12:3

mdt default mpls midp 192.168.1.2 exit

ip multicast-routing vrf mvpn-extranet

What is the effect of this configuration?

- 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: 52

Refer to the exhibit.

```
mdt default mpls mldp 2.2.2.2
```

Which statement about this command is true?

- 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

Explanation:

Reference:

<https://www.cisco.com/c/en/us/td/docs/routers/asr1000/configuration/guide/chassis/asrswcfg/lsmmldp.html>

Question: 53

Exhibit:

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
```

Which statement describes the result of this BGP configuration?

- 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

Explanation:

Question: 54

Refer to the exhibit.

```
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 nlabel/1146
```

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)?

- A. The fourth AS changes, but no other autonomous systems change.
- 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: 55

Refer to the exhibit.

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 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?

- 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: 56

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

Explanation:

Reference:

<https://community.cisco.com/t5/networking-documents/understanding-bgp-as-override-feature/ta-p/3111967>

Question: 57

Refer to the exhibit.

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

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.)

- 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: 58

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

Explanation:

Reference:

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6_basic/configuration/xr-3s/ipv6b-xr-3s-book/ipv6-icmp-rate-lmt-xr.html

Question: 59

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

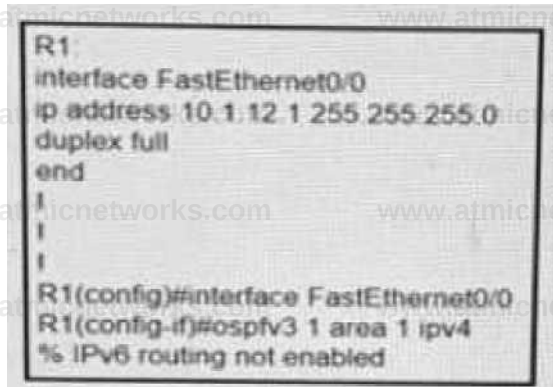
Explanation:

Reference:

<https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipv6/configuration/xe-3s/ipv6-xe-36s-book/ip6-mng-apps.html>

Question: 60

Refer to the exhibit:



```
R1:
interface FastEthernet0/0
ip address 10.1.12.1 255.255.255.0
duplex full
end
R1
R1(config)#interface FastEthernet0/0
R1(config-if)#ospfv3 1 area 1 ipv4
% IPv6 routing not enabled
```

A network engineer is implementing an OSPF configuration Based on the output, which statement is true?

- A. In the ospfv3 1 area 1 ipv4 command, area 0 must be configured instead of area 1.
- B. OSPFv3 does not run for IPv4 on FastEthernet0/0 until IPv6 routing is enabled on the router and IPv6 is enabled on interface FastEthernet0/0
- C. OSPFv3 cannot be configured for IPv4; OSPFv3 works only for IPv6.
- D. "IPv6 routing not enabled" is just an informational message and OSPFv3 runs for IPv4 on interface FastEthernet0/0 anyway

Answer: B

Question: 61

What do routers on the network use to avoid routing loops when OSPF is running as the PE-CE routing protocol on a service provider network?

- A. the AS-Override feature
- B. the DN bit with type 3, 5, or 7 LSA
- C. the domain tag for type 2 LSA

D. sham links to create a super backbone over the service provider network

Answer: B

Question: 62

How do PE routers exchange CE routes between remote sites?

- A. by converting CE routes into VPNv4 routes and exchanging them using MP-BGP
- B. by establishing BGP neighbor relationships between all connected CEs to exchange routing information
- C. by learning IPv4 routes from connected CEs and redistributing them into the global IGP
- D. by converting CE routes into VPNv4 routes and exchanging them using the global IGP

Answer: A

Question: 63

Refer to the exhibit.

```
Router 1:

vrf ciscotest
  address-family ipv4 unicast
    import route-target
      101:102
      301:202

    export route-target
      201:202
      401:402
```

An engineer has configured router 1 to provide shared services to clients behind router 2. To

complete the implementation so that routes from router 1 are accepted, what must the engineer configure on router 2?

- A. with import route targets 101:102 and 202:201
- B. with import route targets 201:202 and 401:402
- C. with export route targets 301:202 and 101:102
- D. with export route targets 201:202 and 401:402

Answer: B

Question: 64

Refer to the exhibit.

```
Router 1:

interface loopback0
192.168.10.1 255.255.255.0

router ospf 1
network 192.168.10.1 0.0.0.0 area 5
```

Refer to the exhibit Router 1 is a P router in the ISP MPLS core A connected P router cannot generate an MPLS label for the router 1 loopback0 interface Which action resolves this issue?

- A. The loopback0 interface must be in OSPF area 0.
- B. The network statement under the routing process must have a wildcard mask of 0 0.0 255.
- C. The OSPF network type must be changed on loopback0 to point-to-point
- D. A static route to null 0 must be added for the loopback interface and then static routes must be redistributed into OSPF

Answer: B

Question: 65

Refer to the exhibit.

```
RI vfl ciscotest manual vpn id 101 neighbor 1921681.J encapsulation «pli neighbor 192 168 10.2 encapsulation n>pi*
neighbor 192 168.20.2 encapsulation nipls
```

An organization is running H-VPLS on a network comprising four routers in a hub-and-spoke topology with R1 as the hub An engineer added a new spoke with multiple VCs to the network, and now traffic cannot flow properly How should the engineer update the configuration on R1 to correct the problem?

- A. Disable spanning tree to allow loops to occur within the hub-and-spoke topology.
- B. Disable split horizon to allow multiple VCs per spoke
- C. Disable Cisco Discovery Protocol to allow MPLS to share labels between the designated spokes
- D. Disable Cisco Discovery Protocol to allow for neighbor discovery

Answer: B

Question: 66

How does Layer 3 VPN traffic traverse an ISP network?

- A. Devices on the network use MPLS labels to share VPN routes between P routers in the network.
- B. Devices on the network use LSAs to share routes between P routers in the network.
- C. Devices on the network use MPLS labels to move VPN traffic through the network.
- D. Devices on the network use GRE tunnels to move traffic between VRFs.

Answer: C

Question: 67

Refer to the exhibit.

PE1#show mpls forwarding

Local Label	Outgoing Label	Prefix or ID	Outgoing Interface	Next Hop	Bytes Switched
22095	Pop	192.168.10.1/32	HuO/O/O/2	192.168.1.2	100000
22096	22286	192.168.20.1/32	HuO/O/O/2	192.168.1.2	1000
22098	22288	192.168.30.1/32	HuO/O/O/2	192.168.1.2	250000
<output omitted>					

What is shown in this output?

- A. local and outgoing labels are updated in hardware
- B. BGP is used between neighbors that are exchanging MPLS labels
- C. LDP neighbor statuses
- D. the labels received and advertised on PE1

Answer: D

Question: 68

What is a requirement to share VRF reachability information to all members of a VPN when using IPv6?

- A. PE and CE routers must be running BGP as the PE-CE routing protocol
- B. PE routers must have MPLS disabled and be running MP-BGP between all P and PE routers.
- C. PE routers must be running MP-BGP and bgp default ipv4-unicast must be disabled
- D. All PEs must have the same VRFs configured.

Answer: D

Question: 69

An engineer noticed that PE3 is failing to accept IPv6 traffic information from PE1. The engineer confirmed that both PE3 and PE1 routers are configured accurately with IPv6 protocol. To eliminate IPv6 traffic loss issue, which action must the engineer take to solve the problem?

- A. Disable 6PVE that provides local IPv6 reachability over MPLS.
- B. Configure 6PE that provides global IPv6 reachability over IPv4 MPLS
- C. Allow PE routers use the MP-iBGP extensions in the IPv6 network configuration to exchange IPv6 reachability information.
- D. Configure 6PE forwarding between 6PE routers based on the IPv6 header

Answer: B

Question: 70

Refer to the exhibit.

Router 1:

```
router bgp 65515
no bgp default ipv4-unicast
bgp router-id 192.168.0.1
neighbor 191.168.0.2 remote-as 65515

address-family ipv4
neighbor 191.168.0.2 route-reflector-client

address-family vpnv4
neighbor 191.168.0.2 activate
neighbor 100.1.3.3 send-community extended
```

Router 1 is a route reflector client within a service provider core PE1 cannot see VPNv4 routes received from the ASBR PE1 only has an iBGP relationship with Router 1. Which action resolves this issue?

- A. Activate PE1 as a neighbor under the IPv4 address family.
- B. Configure Router 1 as a route reflector for PE1 under the VPNv4 address family.
- C. Configure PE1 to have an eBGP relationship with Router 1.
- D. Enable BGP default ipv4-unicast

Answer: B

Question: 71

How do Ethernet virtual circuits provide a way for service providers to maximize the use of VLAN tags'-1

- A. They add an additional tag to VLANs that allows up to two switch ports to use the same globally configured VLAN ID.
- B. They redefine the VLAN tag to include classification, forwarding, and QoS using MPLS labels and EXP bits
- C. They separate the classification and forwarding concepts for VLAN tagging which allows multiple switch ports to

use the same VLAN ID without it being configured globally.

D. They assign VLAN IDs to VTP domains so that the same VLAN ID are used more than once globally.

Answer: C