Cisco

Exam Questions 300-515

Implementing Cisco Service Provider VPN Services (SVPI)

NEW QUESTION 1
- (Exam Topic 1)
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

NEW QUESTION 2
- (Exam Topic 1)
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

NEW QUESTION 3
- (Exam Topic 1)
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/mpls/configuring-selective-vrf-import.html

NEW QUESTION 4
- (Exam Topic 1)
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

NEW QUESTION 5
- (Exam Topic 1)
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

NEW QUESTION 6
- (Exam Topic 1)
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

NEW QUESTION 7
- (Exam Topic 1)
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

NEW QUESTION 8
- (Exam Topic 1)
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

NEW QUESTION 9
- (Exam Topic 1)
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-cg

NEW QUESTION 10
- (Exam Topic 1)
Refer to the exhibit.

```
PE1                                    PE2
ip vrf CE1                             ip vrf CE2
   rd 101:1                               rd 202:2
   route-target export 100:1              route-target export 200:2
   route-target import 200:2              route-target import 100:1

PE3                                    PE4
ip vrf CE3                             ip vrf CE4
   rd 303:3                               rd 404:4
   route-target export 300:3              route-target export 400:4
   route-target import 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

NEW QUESTION 10
- (Exam Topic 1)
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

NEW QUESTION 13
- (Exam Topic 2)
Refer to the exhibit.

```
interface GigabitEthernet0/1
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.

A. Mastered
B. Not Mastered

Answer: A

Explanation:

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

NEW QUESTION 14
- (Exam Topic 2)

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
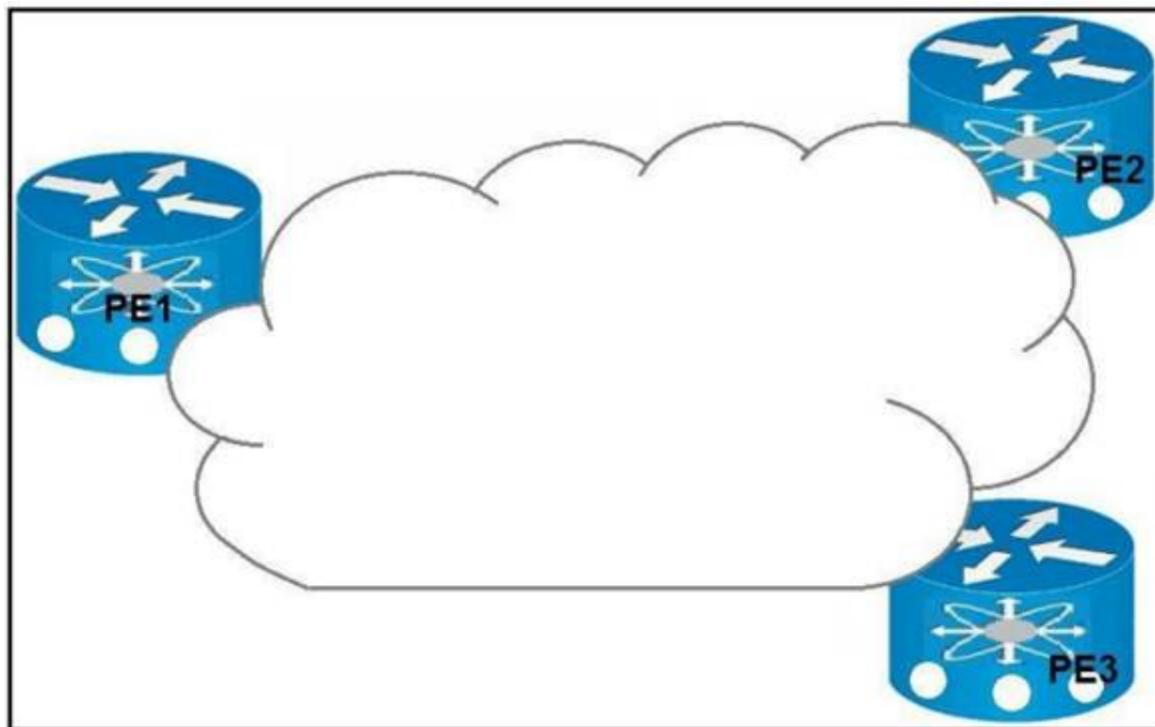
Answer: D

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

NEW QUESTION 16
- (Exam Topic 2)
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

NEW QUESTION 19
- (Exam Topic 2)
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

NEW QUESTION 22
- (Exam Topic 2)
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

NEW QUESTION 26
- (Exam Topic 2)
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 10rewrite ingress tag pop 1 symmetric l2vpnxconnect group 103588p2p 103588interface GigabitEthernet 0/10.10 neighbor ipv4 10.10.10.2 pw-id 103588
B. interface GigabitEthernet 0/10.10 encapsulation dot1q 10rewrite ingress tag pop 1 symmetric l2vpnxconnect group 103588p2p 103588interface GigabitEthernet 0/10.10 neighbor ipv4 10.10.10.2 pw-id 103588
C. interface GigabitEthernet 0/10.10 l2transport encapsulation dot1q 10l2vpnxconnect group 103588p2p 103588interface GigabitEthernet 2/10.10 neighbor ipv4 10.10.10.2 pw-id 103588
D. interface GigabitEthernet 0/10.10 l2transport encapsulation dot1q 10rewrite ingress tag translate 1-to-1 dot1ad 10 symmetricl2vpnxconnect group 103588p2p 103588interface GigabitEthernet 0/10.10 neighbor ipv4 10.10.10.2 pw-id 103588

Answer: C

NEW QUESTION 27
- (Exam Topic 2)
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

NEW QUESTION 31
- (Exam Topic 3)

```
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

NEW QUESTION 33
- (Exam Topic 3)

```
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
```

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

NEW QUESTION 36

- (Exam Topic 3)
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

NEW QUESTION 38
- (Exam Topic 3)
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 nolabel/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

NEW QUESTION 42
- (Exam Topic 3)
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/xe-16/imc-mvpn-xe-16-book/imc-mc-vpn-extranet.html

NEW QUESTION 46
- (Exam Topic 3)
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

NEW QUESTION 49
- (Exam Topic 3)
Refer to the exhibit.
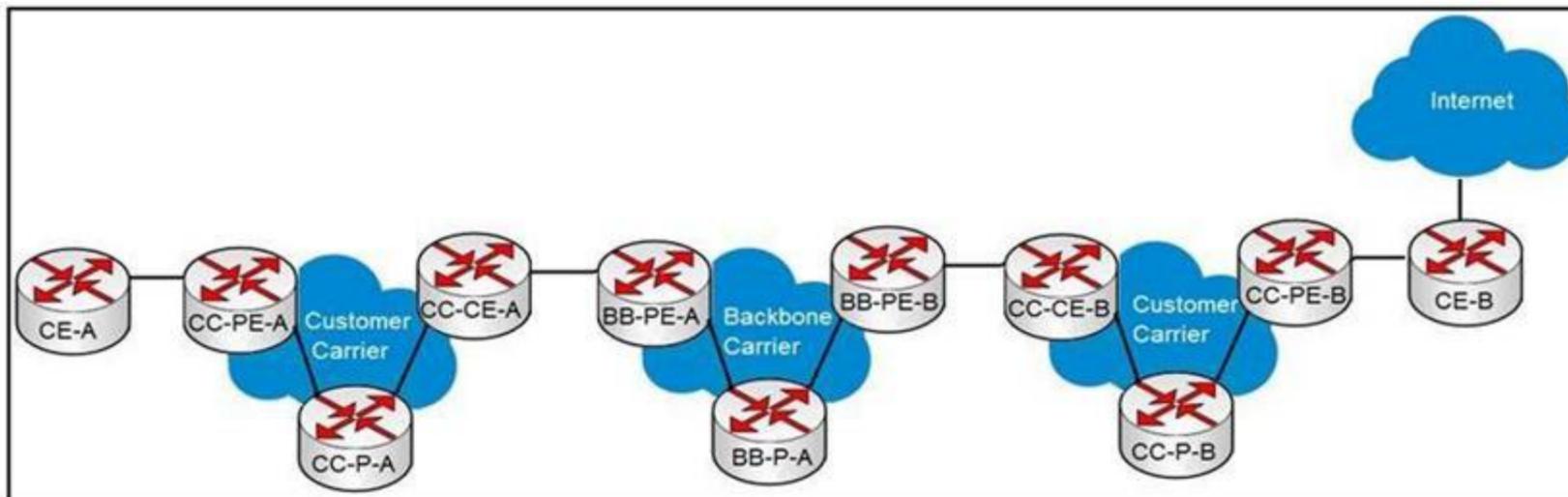
A customer carrier running MPLS VPN wants to utilize a backbone carrier to forward traffic and exchange VPNv4 prefixes between the two customer carriers networks depicted. Which two sets of routers must establish MP-iBGP sessions? (Choose two.)

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

NEW QUESTION 51
- (Exam Topic 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

NEW QUESTION 53
- (Exam Topic 4)
Refer to the exhibit:

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 FastEthemet0/0 until IPv6 routing is enabled on the router and IPv6 is enabled on interface Fastfc.thernet0/0
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

NEW QUESTION 54
- (Exam Topic 4)
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

NEW QUESTION 57
- (Exam Topic 4)
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

NEW QUESTION 62
- (Exam Topic 4)
Refer to the exhibit.

```
PE1#show mpls forwarding
Local   Outgoing     Prefix                Outgoing      Next Hop          Bytes
Label   Label        or ID                 Interface                       Switched
------  -----------  --------------------  ------------  ----------------  ------------
22095   Pop          192.168.10.1/32       Hu0/0/0/2     192.168.1.2       100000
22096   22286        192.168.20.1/32       Hu0/0/0/2     192.168.1.2       1000
22098   22288        192.168.30.1/32       Hu0/0/0/2     192.168.1.2       250000
<output omitted>
```

What is shown in this output?

A. local and outgoing abels 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

NEW QUESTION 65
- (Exam Topic 4)
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/xe-3s/ip6b-xe-3s-book/ip6-icmp-rate-lmt-xe.html

NEW QUESTION 67
- (Exam Topic 4)
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

NEW QUESTION 70
- (Exam Topic 4)
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

NEW QUESTION 75
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