Vendor: Cisco

Exam Code: 300-420

Exam Name: Designing Cisco Enterprise Networks
(ENSLD)

Version: DEMO

QUESTION 1
An engineer is designing a network for a customer running a wireless network with a common VLAN for all APs. The customer is experiencing unicast flooding in the Layer 2 network between the aggregation and access layers. The customer wants to reduce the flooding and improve convergence time. Which solution meets these requirements?

 A. Migrate all APs to a common Layer 2 access layer switch and run Layer 3 from the aggregation layer to all remaining access layer switches.
 B. Align HSRP primary and STP root bridges and reduce ARP timers to match CAM timers on the aggregation layer switches.
 C. Migrate to a Layer 3 access campus design if the APs can run on separate VLANs.
 D. Align HSRP primary and STP root bridges if the APs cannot run on separate VLANs.

Answer: B
Explanation:
The default ARP table aging time is 4 hours while the CAM holds the entries for only 5 minutes. The switch sends out a frame to all forwarding ports within the respective VLAN when the destination MAC address is aged out from the CAM table. You need a CAM aging timer greater or equal to the ARP timeout in order to prevent unicast flooding.

QUESTION 2
A network solution is being designed for a company that connects to multiple Internet service providers. Which Cisco proprietary BGP path attribute will influence outbound traffic flow?

 A. Local Preference
 B. MED
 C. Weight
 D. AS Path
 E. Community

Answer: C
Explanation:
Weight is Cisco proprietary and is the first decision of all path attributes to influence outbound traffic on a singular router. Weight is non-transitive and will only influence routes as they leave that device.

QUESTION 3
A company's security policy requires that all connections between sites be encrypted in a manner that does not require maintenance of permanent tunnels. The sites are connected through a private MPLS-based service that uses a dynamically changing key and spoke-to-spoke communication. Which type of transport encryption must be used in this environment?

 A. GETVPN
 B. DMVPN
 C. GRE VPN
 D. standard IPsec VPN

Answer: A
Explanation:
Standard IPsec VPN isn't correct because it is not dynamic. It is a permanent VPN tunnel solution. The requirements state that "does not require maintenance of permanent tunnels"

DMVPN isn't correct because it is by design, a Hub and Spoke Architecture. The requirements state "spoke to spoke communication"
GRE VPN isn't correct because a GRE VPN doesn't encrypt to secure the packets during transport. The requirements state "all connections between sites be encrypted"
GETVPN is correct because it is the only one listed that is a "tunnel-less VPN". The requirements state "does not require maintenance of permanent tunnels.

QUESTION 4
Which feature is used to optimize WAN bandwidth of IGMP network traffic among WAN Edge routers in the same VPN?

A. IGMPv2
B. multicast RP
C. multicast-replicator
D. multicast service routes

Answer: C
Explanation:
https://www.cisco.com/c/en/us/td/docs/routers/sdwan/configuration/bridging-routing-segmentation-qos/vedge/bridging-routing-segmentation-qos-book/multicast-overlay-routing.html
Replicators
For efficient use of WAN bandwidth, strategic vEdge routers can be deployed and configured as replicators throughout the overlay network. Replicators mitigate the requirement for an ingress router to replicate a multicast stream once for each receiver.

QUESTION 5
The customer solution requires QoS to support streaming multimedia over a WAN. An architect chooses to use Per-Hop Behavior.
Which solution should the engineer use to of mark traffic traveling between branch sites?

A. LLQ with DSCP EF
B. CBWFQ with DSCP AF3
C. CBWFQ with DSCP AF2
D. LLQ with DSCP AF4

Answer: B
Explanation:
LLQ with EF seems way too strict for STREAMING multimedia (where one can actually take advantage of buffering).
Judging by the various Cisco QoS baseline docs (even though the ones below are quite old), streaming video should be somewhere at AF3x/CS4.
https://www.cisco.com/en/US/technologies/tk543/tk759/technologies_white_paper0900aecd8029 5a9b.pdf
https://community.cisco.com/t5/collaboration-voice-and-video/cisco-qos-baseline-classification-and-marking-and-mapping/ta-p/3108355
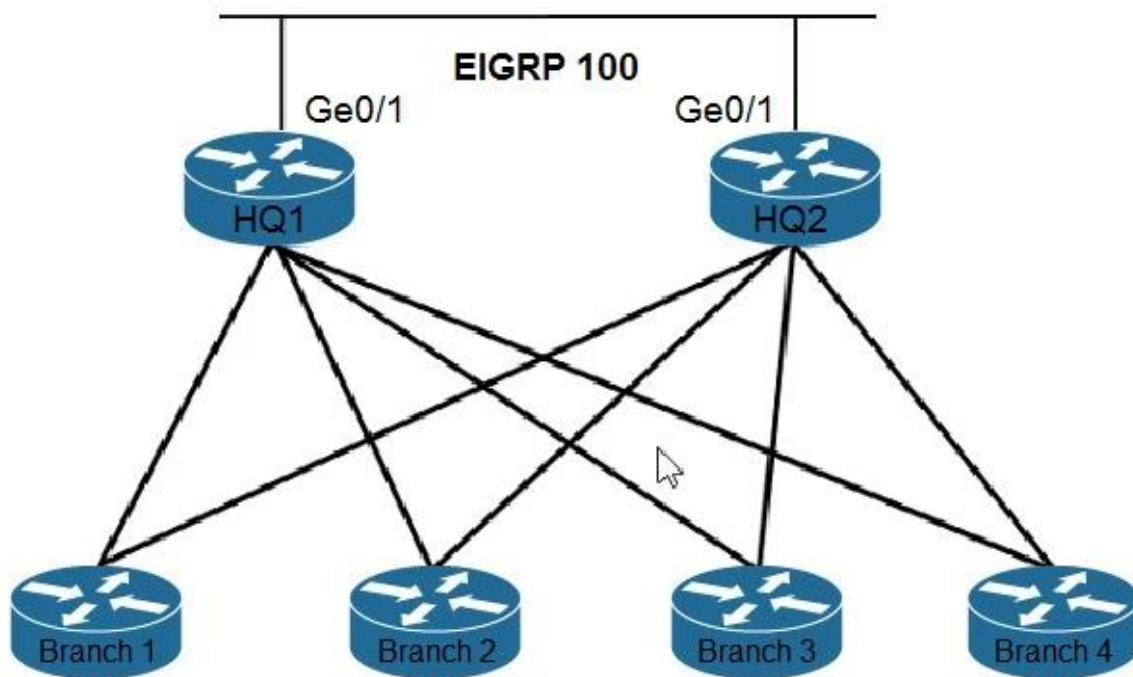

QUESTION 6
Refer to the exhibit. An architect must create a stable and scalable EIGRP solution for a customer. The design must:

```
- conserve bandwidth, memory, and CPU processing
- prevent suboptimal routing
```

```
- avoid any unnecessary queries
```

Which two solutions must the architect select? (Choose two.)

A. Prefix lists
B. Stub routing
C. Distribute lists
D. Route summarization
E. Static redistribution

Answer: BD
Explanation:
The EIGRP stub routing feature provides four advantages when implemented in hub-and-spoke networks;
* It prevents sub-optimal routing from occurring within hub-and-spoke EIGRP networks
* It prevents stub routers with low-speed links from being used as transit routers
* It eliminates EIGRP Query storms, allowing the EIGRP network to convergence faster
* It reduces the required amount of configuration commands on the stub routers

QUESTION 7
An engineer is creating a design to enable IPv6 to run on an existing IPv4 IS-IS network. The IPv4 and IPv6 topologies will match exactly, and the engineer plans to use the same router levels for each protocol per interface. Which IS-IS design is required?

A. single topology without enabling transition feature
B. single topology with transition feature enabled
C. multi topology with transition feature enabled
D. multi topology without enabling transition feature
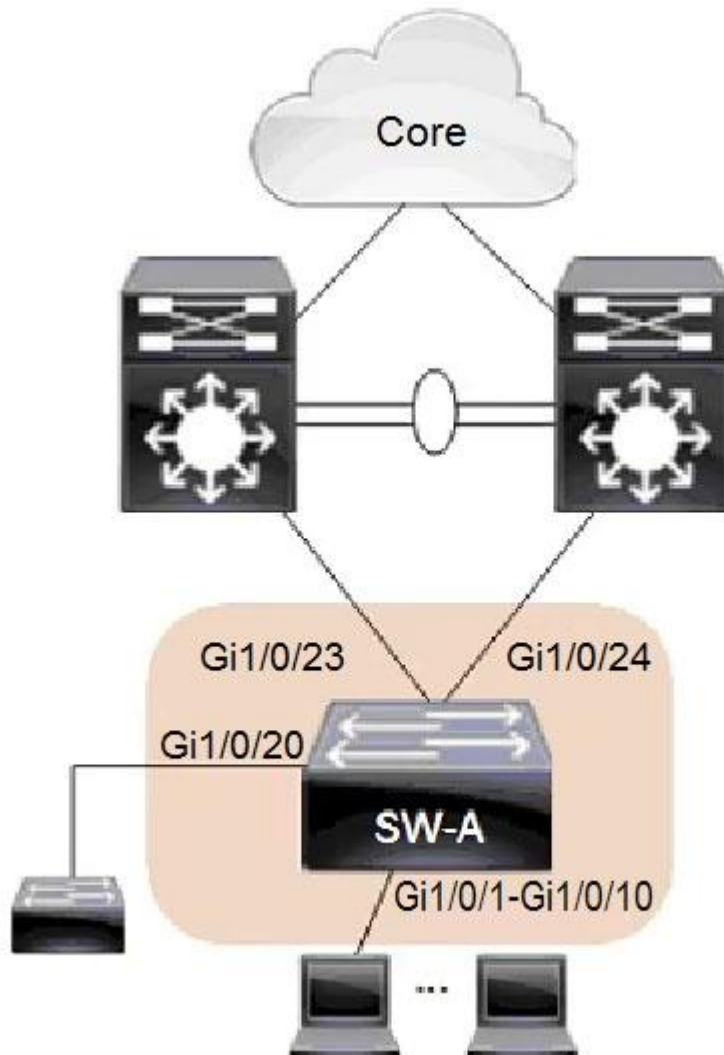
Answer: A

Explanation:
Both IPV4 and IPV6 are sharing the exact same topology. No need of multipology nor transition mode:
https://www.ws.afnog.org/afnog2011/are/ipv6-presentations/4-isis-for-ipv6.pdf

QUESTION 8
Refer to the exhibit. An architect reviews the low-level design of a company's enterprise network and advises optimizing the STP convergence time. Which functionality must be to Gi1/0/1-10 to follow the architect's recommendation?

A. PortFast
B. root guard
C. UplinkFast
D. PortFast

Answer: A
Explanation:

Portfast is a spanning tree's functionality, once configured it avoids the stp states (blocking, listening, learining, forwarding) every time any port among Gi1/0/1 Gi1/0/10 is connetcted again.

QUESTION 9
What is the purpose of a control plane node in a Cisco SD-Access network fabric?

A. to maintain the endpoint database and mapping between endpoints and edge nodes
B. to detect endpoints in the fabric and inform the host tracking database of EID-to-fabric-edge node bindings
C. to identify and authenticate endpoints within the network fabric
D. to act as the network gateway between the network fabric and outside networks

Answer: A
Explanation:
Endpoint registration—Each edge node has a LISP control-plane session to all control plane nodes. After an endpoint is detected by the edge node, it is added to a local database called the EID-table. Once the host is added to this local database, the edge node also issues a LISP map-register message to inform the control plane node of the endpoint so the central HTDB is updated.
https://www.cisco.com/c/en/us/td/docs/solutions/CVD/Campus/cisco-sda-design-guide.html

QUESTION 10
A customer's environment includes hosts that support IPv6-only. Several of these hosts must communicate with a public web server that has only IPv4 domain name resolution. Which solution should the customer use in this environment?

A. utilize NAT64 to translate the addresses
B. Implement NAT44 at the edge of the customer network
C. use 6to4 and a tunnel to translate the addresses
D. implement 6PE to resolve hostname resolution

Answer: A
Explanation:
NAT64 is a mechanism for IPv4-to-IPv6 transition and IPv4-IPv6 coexistence. Together with DNS64, the primary purpose of NAT64 is to allow an IPv6-only client to initiate communications to an IPv4-only server.NAT64 can also be used for IPv4-only clients initiating communications with IPv6-only servers using static or manual bindings.

QUESTION 11
Which design element should an engineer consider when multicast is included in a Cisco SD-Access architecture?

A. PIM SSM must run in the underlay.
B. Multicast clients reside in the underlay, and the multicast source is outside the fabric or in the overlay.
C. Rendezvous points must be used in a PIM SSM deployment.
D. Multicast traffic is transported in the overlay and the EID space for wired and wireless clients.
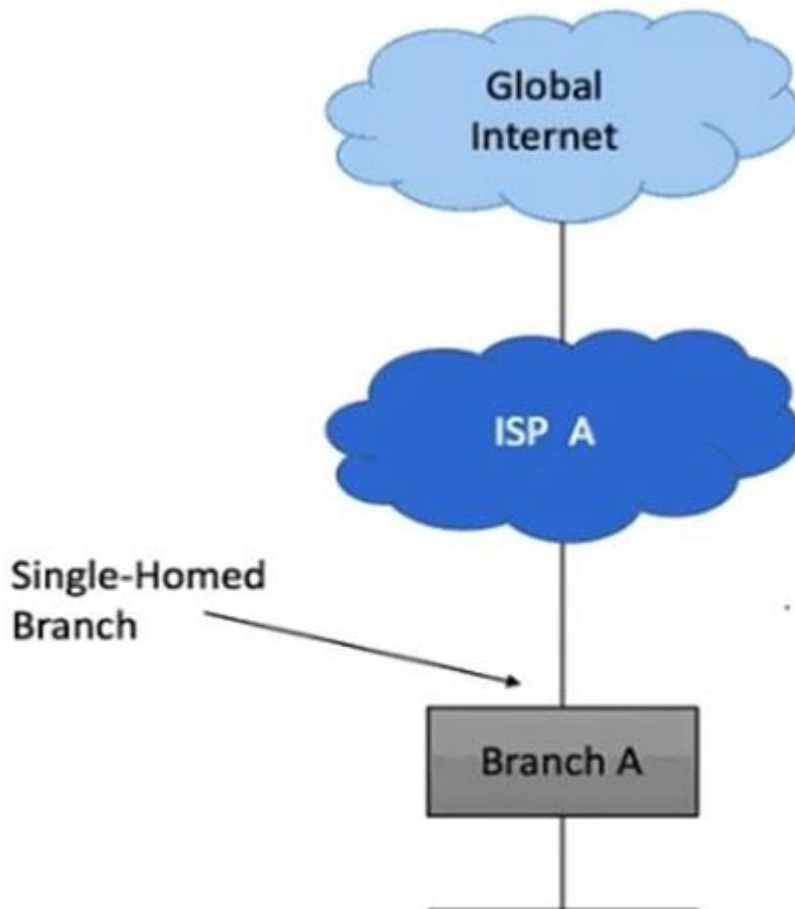
Answer: D
Explanation:
Multicast traffic is transported in the overlay, in the EID space, for both wired and wireless clients.

QUESTION 12
Refer to the exhibit. An architect is designing a BGP solution to connect a remote branch to a service provider. There are several prefixes within the branch that the company does not want to be advertised to the internet. Which solution should the architect use to accomplish this?

A. Set the BGP Internet community for all prefixes.
B. Implement the NOPEER community.
C. Use the BGP No-Advertise community for the prefixes to exclude.
D. Attach the No-Export community with the prefixes to exclude

Answer: D
Explanation:
When a No-Advertise community is attached to a route, the BGP speaker won't advertise the route to any internal or external BGP peers.
When a No-Export community is attached to a route, the router won't advertise the route to external peers--only to internal peers.
https://www.catchpoint.com/network-admin-guide/bgp-communities

QUESTION 13
A large chain of stores currently uses MPLS-based T1 lines to connect their stores to their data center. An architect must design a new solution to improve availability and reduce costs while keeping these considerations in mind:

```
- The company uses multicast to deliver training to the stores.
- The company uses dynamic routing protocols and has implemented QoS.
- To simplify deployments, tunnels should be created dynamically on the
hub when additional stores open.
```

Which solution should be included in this design?

A. VPLS
B. GET VPN
C. DMVPN
D. IPsec

Answer: C
Explanation:
DMVPN can be run over MPLS, with all the benefits of QoS. Under the hood, DMVPN is GRE with IPSEC, and GRE will deliver multicast.

QUESTION 14
Which two border nodes are available in the Cisco SD-Access architecture? (Choose two.)

A. extended border
B. edge border
C. internal border
D. anywhere border
E. intermediate border

Answer: CD
Explanation:
There are 3 types of border nodes in SD-Access:
External. Default exit from fabric with no specific routes injection
Internal. Gateway only for a set of networks, such as shared services prefixes
Anywhere. Combination of external and internal functionality

QUESTION 15
An engineer is upgrading a company's main site to include a connection to a second ISP. The company will receive full Internet routing tables from both ISPs via BGP. The engineer must ensure that the company does not become a transit autonomous system. Which solution should be included in this design?

A. Tag incoming routes from both ISPs with BGP community no-export.
B. Lower the MED for updates sent to the secondary ISP.
C. Use a route-map to prevent all prefixes from being advertised to either ISP.
D. Modify the local-preference for routes incoming from the primary ISP.

Answer: A
Explanation:
There are 4 methods how you can prevent becoming a transit AS:

```
- Filter-list with AS PATH access-list.
- No-Export Community.
- Prefix-list Filtering
- Distribute-list Filtering
```

https://networklessons.com/bgp/bgp-prevent-transit-as

QUESTION 16
Which component of Cisco SD-Access integrates with Cisco DNA Center to perform policy segmentation and enforcement through the use of security group access control lists and security group tags?

A. Cisco Application Policy Infrastructure Controller Enterprise Module
B. Cisco Network Data Platform
C. Cisco Identity Services Engine
D. Cisco TrustSec

Answer: C
Explanation:
Policy management with identity services is enabled in an SD-Access network using ISE integrated with Cisco DNA Center for dynamic mapping of users and devices to scalable groups.
https://www.cisco.com/c/en/us/td/docs/solutions/CVD/Campus/cisco-sda-design-guide.html#CiscoDNACenterSoftware

QUESTION 17
An engineer is designing an EIGRP network for a small branch site where there is only one Layer 3 router. The engineer wants the router to advertise the local LAN network to remote EIGRP neighbors without sending any unnecessary multicast messages on the local LAN.
Which action should the engineer take?

A. Use a static default route for this site instead of EIGRP
B. Advertise the local LAN using the network command and the passive-interface feature
C. Redistribute the local LAN network using the redistribute connected command
D. Advertise the local LAN subnet as a stub network

Answer: B
Explanation:
The requirement is simply to advertise the network but NOT send MC traffic on the local LAN. For this you have to make it a passive interface. There are no requirements stated to make it a stub.

QUESTION 18
Refer to the exhibit. Customers report low video quality and delays when having point-to-point telepresence video calls between the two locations. An architect must optimize a design so that traffic follows the same path for egress and ingress traffic flows. Which technique optimizes the design?
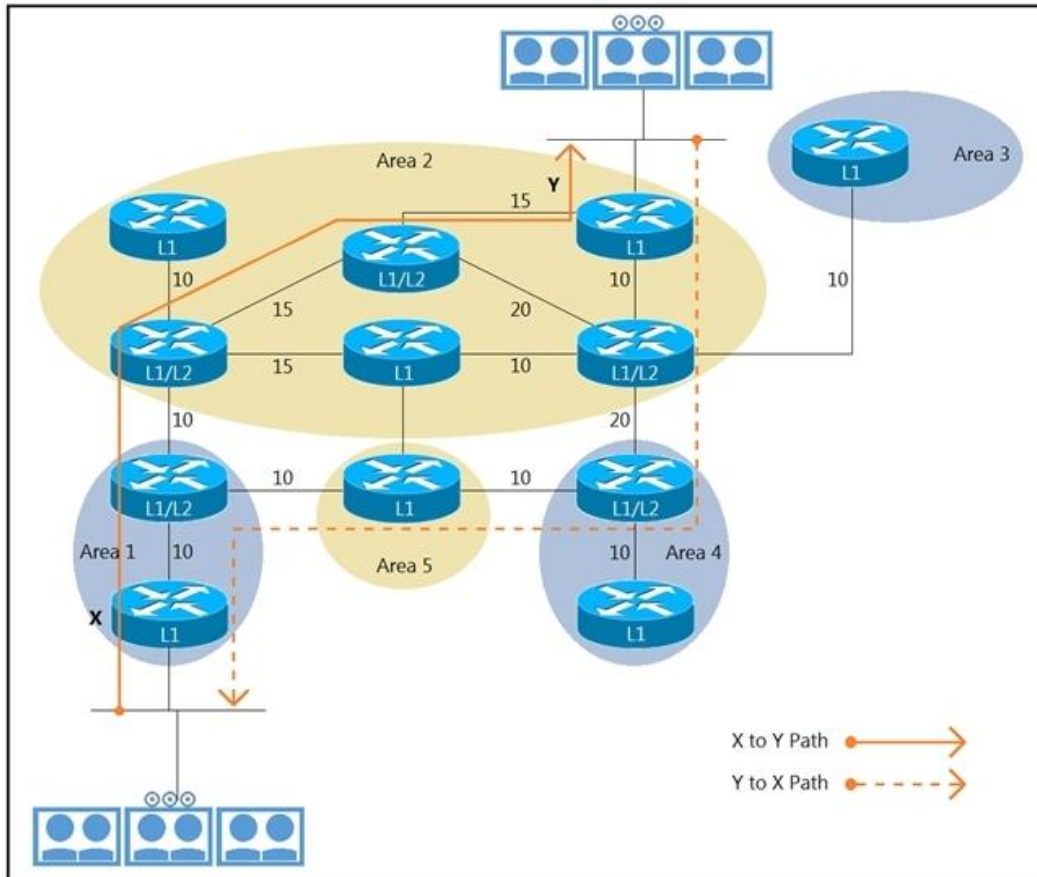
A. Configure route leaking on the router in area 2.
B. Configure route leaking on he router in area 1.
C. Configure the high metric on the router in area 4.
D. Configure route filter on the router in area 4.

Answer: A
Explanation:
IS-IS Level1 Router allways take the route towards the closest L2 Router, when trying to reach a destination outside the AS. That is the reason why the return-traffic takes a different way here. The problem occurs because Level1 and Level2 topologies are examied separatly by the respective routers. The solution is to hand down Level2 routing-information about the destination networks into Layer1 routing, so it can be included into path selection.

QUESTION 19
A network engineer is redesigning a company's QoS solution. The company is currently using IP Precedence, but the engineer plans to move to DiffServ. It is important that the new solution provide backward compatibility with the current solution. Which technology should the design include?

A. expedited forwarding
B. assured forwarding
C. class selector code points
D. default per hop behavior

Answer: C
Explanation:
FiffServ is backward compatible with IP Precedence (Ip-Precedence uses the 3 most signifcant bits of the ToS byte, whereas Diffserve uses the fost significant six bits - which includ the ones from IP precedence).

QUESTION 20
Drag and Drop Question
Drag and drop the properties from the left onto the protocols they describe on the right.

HTTPS-based	NETCONF
SSH-based	
built to support candidate configuration	
lacks support for two-phase commit transactions	RESTCONF

Answer:

HTTPS-based	NETCONF
SSH-based	SSH-based
built to support candidate configuration	built to support candidate configuration
lacks support for two-phase commit transactions	RESTCONF
	HTTPS-based
	lacks support for two-phase commit transactions

Explanation:
https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/prog/configuration/166/b_166_programmability_cg/b_166_programmability_cg_chapter_01011.html
https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/prog/configuration/169/b_169_programmability_cg/ configuring_yang_datamodel.html

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