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Vendor: Cisco

Exam Code: 300-320

Exam Name: Designing Cisco Network Service Architectures

Version: Demo

Exam A

QUESTION 1

How does ERS use the VLAN tag?

- A. to provide service internetworking
- B. to support transparency for Layer 2 frames
- C. as a connection identifier to indicate destination
- D. as a mapping to the DLCI in service internetworking
- E. to provide a trunk by which all VLANs can navigate from one site to one or multiple sites

Correct Answer: C

Explanation

QUESTION 2

Which option is the Cisco recommendation for data oversubscription for access ports on the access-to-distribution uplink?

- A. 4 to 1
- B. 20 to 1
- C. 16 to 1
- D. 10 to 1

Correct Answer: B

Explanation

QUESTION 3

Which QoS mechanism uses RSVP?

- A. IntServ
- B. DiffServ
- C. CoS
- D. ToS

Correct Answer: A

Explanation

Explanation/Reference:

QUESTION 4

Engineer is designing QoS for application. Which QoS architecture should he choose if application needs to have reserved bandwidth prior to sending data?

- A. Differentiated services
- B. Integrated services
- C. LLQ
- D. ToS

Correct Answer: B

Explanation

QUESTION 5

Which path selection protocol is used by Fibre Channel fabrics?

- A. IVR
- B. VoQ
- C. FSPF
- D. VSANs
- E. SANTap

Correct Answer: C
Explanation

QUESTION 6

What network technology provides Layer 2 high availability between the access and distribution layers?

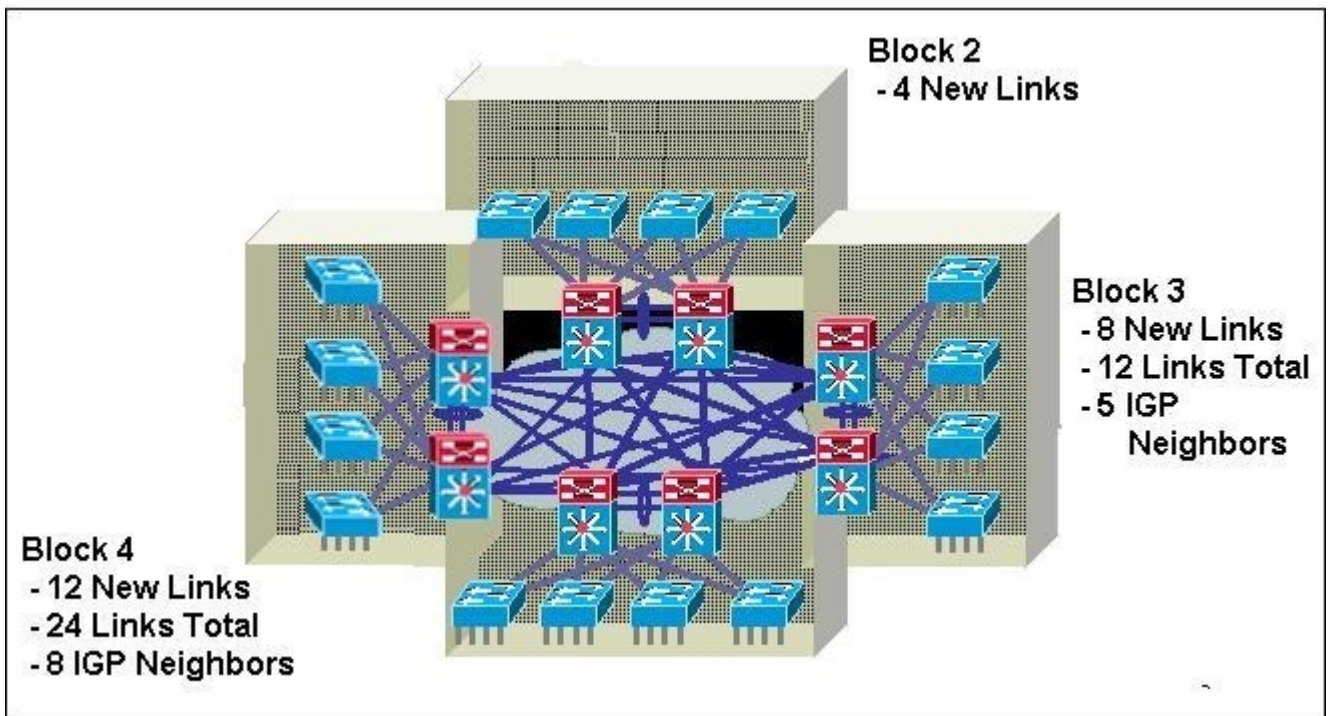
- A. HSRP
- B. MEC
- C. EIGRP
- D. GLBP

Correct Answer: B
Explanation

Explanation/Reference:

QUESTION 7

Refer to the exhibit.



Which recommended practice is applicable?

- A. If no core layer is deployed, the design will be easier to scale.
- B. A dedicated campus core layer should be deployed for connecting three or more buildings.
- C. If no core layer is deployed, the distribution switches should not be fully meshed.
- D. A dedicated campus core layer is not needed for connecting fewer than five buildings.

Correct Answer: B

Explanation

QUESTION 8

Which STP feature can prevent other switches on the network from becoming the root switch, but still allow that interface to participate in STP otherwise?

- A. Root Guard
- B. Loop Guard
- C. BPDU Guard
- D. BPDU Filter

Correct Answer: A

Explanation

Explanation/Reference:

QUESTION 9

The network engineering team is interested in deploying NAC within the enterprise network to enhance security. What deployment model should be used if the team requests that the NAC be logically inline with clients?

- A. Layer 2 in-band
- B. Layer 2 out-of-band
- C. Layer 3 in-band
- D. Layer 3 out-of-band

Correct Answer: C

Explanation

Explanation/Reference:

https://www.cisco.com/c/en/us/products/collateral/security/nac-appliance-clean-access/product_data_sheet0900aecd802da1b5.html

Passing traffic mode
Virtual gateway (bridged mode)
Real IP gateway (routed mode)

Client access mode
Layer 2 (client is adjacent to the Cisco NAC Server)
Layer 3 (client is multiple hops from the Cisco NAC Server)

Traffic flow model
In-band (Cisco NAC Server is always in-line with user traffic)
Out-of-band (Cisco NAC Server is in-line only during authentication, posture assessment, and remediation)

https://www.cisco.com/c/en/us/products/collateral/security/nac-appliance-clean-access/prod_qas0900aecd802da200.html

Q. Does an in-band deployment require the placement of multiple Cisco NAC Servers at the access layer?

A. No. The Server is logically in-line, not physically. This permits the placement of the

Server at the core.
So, logically = layer 3 and inline = in-band

QUESTION 10

A company has hired an entry-level network administrator for its new data center. The company CIO wants to give the administrator limited access on the newly configured Cisco Nexus 7000. Which feature should be used to allow limited access?

- A. NAC
- B. VDC
- C. RBAC
- D. vPC

Correct Answer: C
Explanation

QUESTION 11

Which three of these are major scaling, sizing, and performance considerations for an IPsec design? (Choose three.)

- A. connection speed
- B. number of remote sites
- C. features to be supported
- D. types of devices at the remote site
- E. whether packets are encrypted using 3DES or AES
- F. number of routes in the routing table at the remote site

Correct Answer: ABC
Explanation

QUESTION 12

When a Cisco ASA adaptive security appliance is configured for active/standby failover, which MAC address is used for the active unit?

- A. the MAC address of the primary unit
- B. the MAC address of the secondary unit
- C. the virtual MAC address
- D. the standby MAC address

Correct Answer: A
Explanation

Explanation/Reference:

QUESTION 13

Which one of these could you implement to sustain a large DDoS attack?

- A. Stateful firewall
- B. uRPF
- C. Connections limits and timeouts
- D. Access-lists

Correct Answer: C
Explanation

QUESTION 14

A company needs to configure a new firewall and have only one public IP address to use in this firewall.

The engineer need to configure the firewall with NAT to handle inbound traffic to the mail server in addition to internet outbound traffic. Which options could he use ? (Choose Two)

- A. Static NAT for inbound traffic on port 25

- B. Dynamic NAT for outbound traffic
- C. Static NAT for outbound traffic on port 25
- D. Dynamic NAT for inbound traffic
- E. NAT overload for outbound traffic
- F. NAT overload for inbound traffic on port 25

Correct Answer: AE

Explanation

Explanation/Reference:

QUESTION 15

Why is QoS important for in-band management?

- A. It supports remote management when traffic volume is high.
- B. It supports proper routing.
- C. It supports network security against DoS attacks and worm outbreaks.
- D. It supports network redundancy.

Correct Answer: A

Explanation

QUESTION 16

Refer to the exhibit.

```
R1(config)# router ospf 2

R1(config)# network 10.10.10.0 0.0.0.255 area 1

R1(config)# network 20.20.20.0 0.0.0.255 area 2

R1(config)# router-id 15.15.15.15

R2(config)# router ospf 10

R2(config)# network 10.10.10.0 0.0.0.255 area 1

R2(config)# network 20.20.20.0 0.0.0.255 area 2

R2(config)# router-id 16.16.16.16
```

Based on the configuration, why are routers R1 and R2 not exchanging OSPF routes?

- A. The OSPF process numbers are different.
- B. There is no backbone area configured.
- C. The router IDs are different.
- D. OSPF is not enabled on the interfaces.

Correct Answer: B

Explanation

Explanation/Reference:

QUESTION 17

A customer with a single Cisco Adaptive Security Appliance wants to separate multiple segments of the ecommerce network to allow for different security policies. What firewall technology accommodates these design requirements?

- A. virtual contexts
- B. private VLANs
- C. admission control
- D. virtual private network

Correct Answer: A

Explanation

QUESTION 18

Which security feature can help prevent spoofed packets on the network?

- A. uRPF
- B. ACLs
- C. DAI
- D. DHCP spoofing

Correct Answer: A

Explanation

QUESTION 19

Which technology allows centralized storage services to be shared across different VSANs?

- A. IVR
- B. FSPF
- C. FICON
- D. SANTap

Correct Answer: A

Explanation

Explanation/Reference:

IVR = InterVSAN Routing

QUESTION 20

Which of the following is a recommended practice of a data center core?

- A. Server-to-server traffic always remains in the core layer.
- B. The core infrastructure should be in Layer 3.
- C. Core layer should run BGP along with an IGP because iBGP has a lower administrative distance than any IGP
- D. The Cisco Express Forwarding hashing algorithm is the default, based on the IP address and Layer 4 port

Correct Answer: B

Explanation

QUESTION 21

Which two statements about both FCIP and iSCSI are correct? (Choose two.)

- A. They support file-level storage for remote devices.
- B. They require high throughput with low latency and low jitter.
- C. Their purpose is to provide connectivity between host and storage
- D. They support block-level storage for remote devices.
- E. Their purpose is to provide connectivity between separate wide-area SANs.

Correct Answer: DE

Explanation

QUESTION 22

An engineer have to design a multicast domain for some application. This multicast network should be secured. Which option should he take ?

- A. ASM with an addressing of 224.0.0.0/8
- B. ASM with an addressing of 232.0.0.0/8
- C. SSM with an addressing of 224.0.0.0/8
- D. SSM with an addressing of 232.0.0.0/8

Correct Answer: D

Explanation

Explanation/Reference:

QUESTION 23

A network administrator wants to provide high availability in a data center environment by making sure that there is no reconvergence of Layer 2 and Layer 3 protocols when there is a Layer 3 switch failure. Which Cisco Nexus feature fulfills this purpose?

- A. ISSU
- B. VSS
- C. vPC
- D. MEC

Correct Answer: C

Explanation

QUESTION 24

Which STP enhancement can be configured on Layer 2 ports between distribution layer switches?

- A. LoopGuard
- B. PortFast
- C. UplinkFast
- D. RootGuard

Correct Answer: A

Explanation

QUESTION 25

Which three statements about 802.1X are true? (Choose three)

- A. It is IEEE standard
- B. It can allow and deny port access based on device identity

- C. It works only with wired devices
- D. It can allow and deny port access based on user identity

Correct Answer: ABD

Explanation

Explanation/Reference:

QUESTION 26

Which type of application traffic typically requires prioritization across networks and may use a DSCP value of 34 (AF41)?

- A. voice
- B. interactive video
- C. call signaling
- D. routing
- E. streaming video
- F. network management

Correct Answer: B

Explanation

QUESTION 27

Which two physical components can enable high availability on a Cisco 6500 device? (Choose two.)

- A. dual supervisor modules
- B. bundled Ethernet Interconnects
- C. line modules with DFCs
- D. redundant power supplies
- E. VSS interlink cables

Correct Answer: AD

Explanation

QUESTION 28

A company's virtualization team wants to transfer control of network switching and policy management for VMware virtual servers to the networking team. What Cisco network virtualization solution should be implemented?

- A. Unified Computing System
- B. Nexus distributed virtual switch
- C. virtual network agent
- D. Nexus unified fabric switch

Correct Answer: B

Explanation

Explanation/Reference:

Explanation: Nexus 1000v

QUESTION 29

An engineer is attempting to improve OSPF network performance and discovers that the entire SPT recomputes whenever a type 1 or type 2 LSA is received within an area. Which action can optimize SPT operations?

- A. Tune LSA throttling thresholds.

- B. Enable incremental SPF.
- C. Configure totally stubby areas throughout the domain.
- D. Summarize networks on all ABRs.

Correct Answer: B

Explanation

Explanation/Reference:

https://www.cisco.com/c/en/us/td/docs/ios/12_0s/feature/guide/ospfispf.html#wp1027184

"Benefits of OSPF Incremental SPF OSPF uses Dijkstra's SPF algorithm to compute the shortest path tree (SPT). During the computation of the SPT, the shortest path to each node is discovered. The topology tree is used to populate the routing table with routes to IP networks. When changes to a Type-1 or Type-2 link-state advertisement (LSA) occur in an area, the entire SPT is recomputed. In many cases, the entire SPT need not be recomputed because most of the tree remains unchanged. Incremental SPF allows the system to recompute only the affected part of the tree. Recomputing only a portion of the tree rather than the entire tree results in faster OSPF convergence and saves CPU resources. Note that if the change to a Type-1 or Type-2 LSA occurs in the calculating router itself, then the full SPT is performed. Incremental SPF is scheduled in the same way as the full SPF. Routers enabled with incremental SPF and routers not enabled with incremental SPF can function in the same internetwork."

QUESTION 30

Which of these statements best describes VPLS?

- A. Neither broadcast nor multicast traffic is ever flooded in VPLS.
- B. Multicast traffic is flooded but broadcast traffic is not flooded in VPLS.
- C. VPLS emulates an Ethernet switch, with each EMS being analogous to a VLAN.
- D. Because U-PE devices act as IEEE 802.1 devices, the VPLS core must use STP
- E. When the provider experiences an outage, IP re-routing restores PW connectivity and MAC re-learning is needed.

Correct Answer: C

Explanation

QUESTION 31

A company requires redundancy for its multihomed BGP external connections. What two features can be configured on the WAN routers to automate failover for both outbound and inbound traffic? (Choose two.)

- A. AS path prepending
- B. local preference
- C. floating static route
- D. HSRP
- E. MED
- F. weight

Correct Answer: AB

Explanation

Explanation/Reference:

QUESTION 32

Which two VPN solutions extend the routing capabilities of basic IPsec VPNs? (Choose two.)

- A. GRE
- B. NVI
- C. DES
- D. VTI

E. AES

Correct Answer: AD

Explanation

QUESTION 33

What is one reason to implement Control Plane Policing?

- A. allow OSPF routing protocol to advertise routes
- B. protect the network device route processor from getting overloaded by rate limiting the incoming control plane packets
- C. allow network devices to generate and receive packets
- D. protect the data plane packets

Correct Answer: B

Explanation

QUESTION 34

NBAR is deployed on the network as part of network optimization. Which technology is critical to recognize new applications on the network?

- A. PDLM
- B. ACLs
- C. code upgrade
- D. additional licenses

Correct Answer: A

Explanation

Explanation/Reference:

also known as" Packet Description Language Modules"

https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/qos_nbar/configuration/15-mt/qos-nbar-15-mt-book/nbarapp-recog-mods.html

QUESTION 35

Which unique EIGRP feature allows for faster Layer 3 convergence?

- A. fast EIGRP timers
- B. feasible successors
- C. hybrid routing protocol
- D. Cisco proprietary protocol

Correct Answer: B

Explanation

QUESTION 36

Which two ways to manage scalability issues inside an IBGP domain with 20 or more routers are recommended? (Choose two.)

- A. Configure route reflectors.
- B. Use OSPF instead of EIGRP as an underlying routing protocol.
- C. Create a full mesh at Layer 1.
- D. Configure confederations.
- E. Configure static routes between all routers.

Correct Answer: AD

Explanation

Explanation/Reference:

QUESTION 37

You need to design a network with a summary segment that supports up to 15 IP segments and all segments must be /24?

- A. /20
- B. /21
- C. /18
- D. /19

Correct Answer: A

Explanation

QUESTION 38

What is the correct state between two BGP peers that are neighbors?

- A. active
- B. operational
- C. established
- D. up

Correct Answer: C

Explanation

QUESTION 39

Which two options are advantages of having a modular design instead of an EOR design in a data center? (Choose two.)

- A. cooling constraints
- B. cable bulk
- C. decreased STP processing
- D. redundancy options
- E. cost minimization
- F. low-skilled manager

Correct Answer: AB

Explanation

Explanation/Reference:

"There are some disadvantages with EOR designs:

Cable bulk: More cabling needs to be routed and managed.

Cooling constraints: The cable bulk at the cabinet floor entry can be difficult to manage and can block cool airflow."

-> So these are advantages of modular design.
(Less cooling constraints and no cable bulk)

NOTE for your learnings:

"There are several advantages with EOR designs:

Decreased management complexity: There are fewer devices to manage, which makes this task less complex.

Decreased STP processing: With fewer devices in the Layer 2 infrastructure and significantly fewer uplinks, there is less impact on STP processing. ?Redundancy options: Redundant switch power and

CPUs can be supported on modular switches."

QUESTION 40

When designing the routing for an Enterprise Campus network it is important to keep which of the following route filtering aspects in mind?

- A. Filtering is only useful when combined with route summarization.
- B. It is best to filter (allow) the default and summary prefixes only in the Enterprise Edge to remote sites or site100% Valid Cisco Exams to-site IPsec VPN networks
- C. IGP's (for example EIGRP or OSPF) are superior to route filtering in avoiding inappropriate transit traffic through remote nodes or inaccurate or inappropriate routing updates
- D. The primary limitation of router filtering is that it can only be applied on outbound updates

Correct Answer: B

Explanation

Explanation/Reference:

QUESTION 41

What is the primary benefit of implementing Virtual Device Contexts on Nexus hardware In a multi- tenant environment?

- A. resource isolation
- B. software partitioning
- C. resource allocation
- D. granular monitoring

Correct Answer: A

Explanation

QUESTION 42

Which QoS architecture provides scalability of implementation?

- A. IntServ
- B. DiffServ
- C. LLQ
- D. RSVP

Correct Answer: B

Explanation

QUESTION 43

Which option is correct when using VSS to combine two physical switches into one logical switch? (Choose two)

- A. Both data planes forward traffic simultaneously.
- B. Only one data plane forwards traffic, while the other data plane is on standby.
- C. Both control planes forward traffic simultaneously.
- D. Control planes are combined into one virtual control plane.

Correct Answer: AD

Explanation

Explanation/Reference:

QUESTION 44

Uplink floating state (up and down) .what you can do to solve this problem ?

- A. route summary
- B. Cisco Express Forwarding
- C. BFD
- D. UDLD

Correct Answer: A

Explanation

QUESTION 45

Which of these is a recommended practice with trunks?

- A. use ISL encapsulation
- B. use 802.1q encapsulation
- C. set ISL to desirable and auto with encapsulation negotiate to support ISL protocol negotiation
- D. use VTP server mode to support dynamic propagation of VLAN information across the network

Correct Answer: B

Explanation

QUESTION 46

Which option is used as a top-of-rack device that is managed by its parent device, providing ease of management?

- A. Cisco Nexus 2000
- B. Cisco Nexus 5000
- C. Cisco Nexus 7000
- D. Cisco Nexus 9000

Correct Answer: A

Explanation

Explanation/Reference:

QUESTION 47

Which two statements about Layer 3 access designs are correct? (Choose two.)

- A. IP address space is difficult to manage.
- B. Broadcast and fault domains are increased.
- C. Convergence time is fractionally slower than STP.
- D. Limits on clustering and NIC teaming are removed.
- E. Fast uplink convergence is supported for failover and fallback.

Correct Answer: AE

Explanation

QUESTION 48

Which option is a common cause of congestion found in a campus network?

- A. input serialization delay
- B. output serialization delay
- C. Rx-queue starvation

D. Tx-queue starvation

Correct Answer: D

Explanation

QUESTION 49

Which four Cisco proprietary Spanning Tree Protocol enhancements are supported with rapid per-VLAN Spanning-Tree plus? (Choose four.)

- A. PortFast
- B. UplinkFast
- C. loop guard
- D. root guard
- E. BPDU guard
- F. BackboneFast

Correct Answer: ACDE

Explanation

Explanation/Reference:

QUESTION 50

Which technology is an example of the need for a designer to clearly define features and desired performance when designing advanced WAN services with a service provider?

- A. FHRP to remote branches
- B. Layer 3 MPLS VPNs secure routing
- C. Control protocols (for example Spanning Tree Protocol) for a Layer 3 MPLS service
- D. Intrusion prevention, QoS, and stateful firewall support network wide

Correct Answer: C

Explanation

Explanation/Reference:

QUESTION 51

Which two options are storage topologies? (Choose two.)

- A. WAS
- B. DAS
- C. CAS
- D. NAS

Correct Answer: BD

Explanation

QUESTION 52

Which practice is recommended when designing scalable OSPF networks?

- A. Maximize the number of routers in an area.
- B. Minimize the number of ABRs.
- C. Minimize the number of areas supported by an ABR.
- D. Maximize the number of router adjacencies.

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