**200-310 cisco**

Number: 200-310
Passing Score: 800
Time Limit: 120 min

**Exam A**

**QUESTION 1**
You want to gather as much detail as possible during a network audit, to include data time stamping across a large number of interfaces, customized according to interface, with a minimal impact on the network devices themselves. Which tool would you use to meet these requirements?

A.  RMON
B.  SNMPv3
C.  NetFlow
D.  Cisco Discovery Protocol

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

NetFlow provides extremely granular and accurate traffic measurements and a high-level collection of aggregated traffic. The output of netflow information is displayed via the show ip cache flow command on routers. The Table shows a description of the fields for NetFlow output.

Table. Netflow Output escription

| Field | Description |
|---|---|
| Bytes | Number of bytes of memory that are used by the NetFlow cache |
| Active | Number of active flows |
| Inactive | Number of flow buffers that are allocated in the Netflow cache |
| Added | Number of flows that have been created since the start of the summary |
| Exporting flows | IP address and UDP port number of the workstation to which flows are exported |
| Flows exported | Total number of flows export and the total number of UDP datagrams |
| Protocol | IP protocol and well-known port number |
| Total Flows | Number of flows for this protocol since the last time that statistics were cleared |
| Flows/sec | Average number of flows this protocol per second |
| Packets/flow | Average number of packets per flow per second |
| Bytes/pkt | Average number of bytes for this protocol |
| Packets/sec | Average number of packets for this protocol per second |

**QUESTION 2**
Which protocol is used for voice bearer traffic?

A. MGCP
B. RTP
C. SCCP
D. CDP
E. ICMP

**Correct Answer:** B
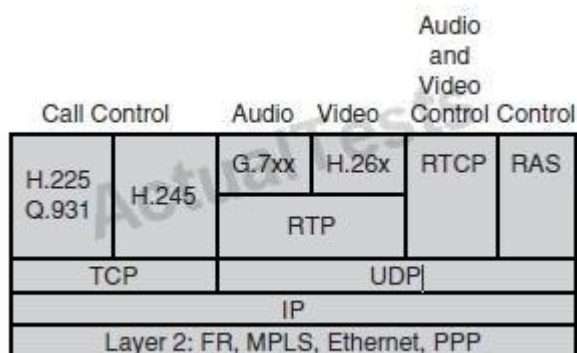**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

VoIP Control and Transport Protocols

A number of different protocols are used in a VoIP environment for call control, device provisioning, and addressing.

Figure 14-15 shows those protocols focused on VoIP control and transport.



**QUESTION 3**
Which protocol is used to reserve bandwidth for the transport of a particular application data flow across the network?

A. cRTP
B. IEEE 802.1P
C. RSVP
D. LFI
E. Auto QOS

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

RSVP Signaling protocol that enables end stations or applications to obtain guaranteed bandwidth and low delays for their data flows.

**QUESTION 4**

Which two features are supported by single wireless controller deployments? (Choose two.)

A. automatic detection and configuration of LWAPPs
B. LWAPP support across multiple floors and buildings
C. automatic detection and configuration of RF parameters
D. Layer 2 and Layer 3 roaming
E. controller redundancy
F. mobility groups

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 5**
Which four services does the architecture for Media Services contain? (Choose four.)

A. access services
B. transport services
C. storage services
D. forwarding services
E. session control services
F. security services
G. filtering services
H. remote access services

**Correct Answer:** ABCE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

An architecture framework for media services supports different models of video models. As shown in Figure 14-13, the network provides service to video media in the Media Services Framework. Those services are access services, transport services, bridging services, storage servers, and session
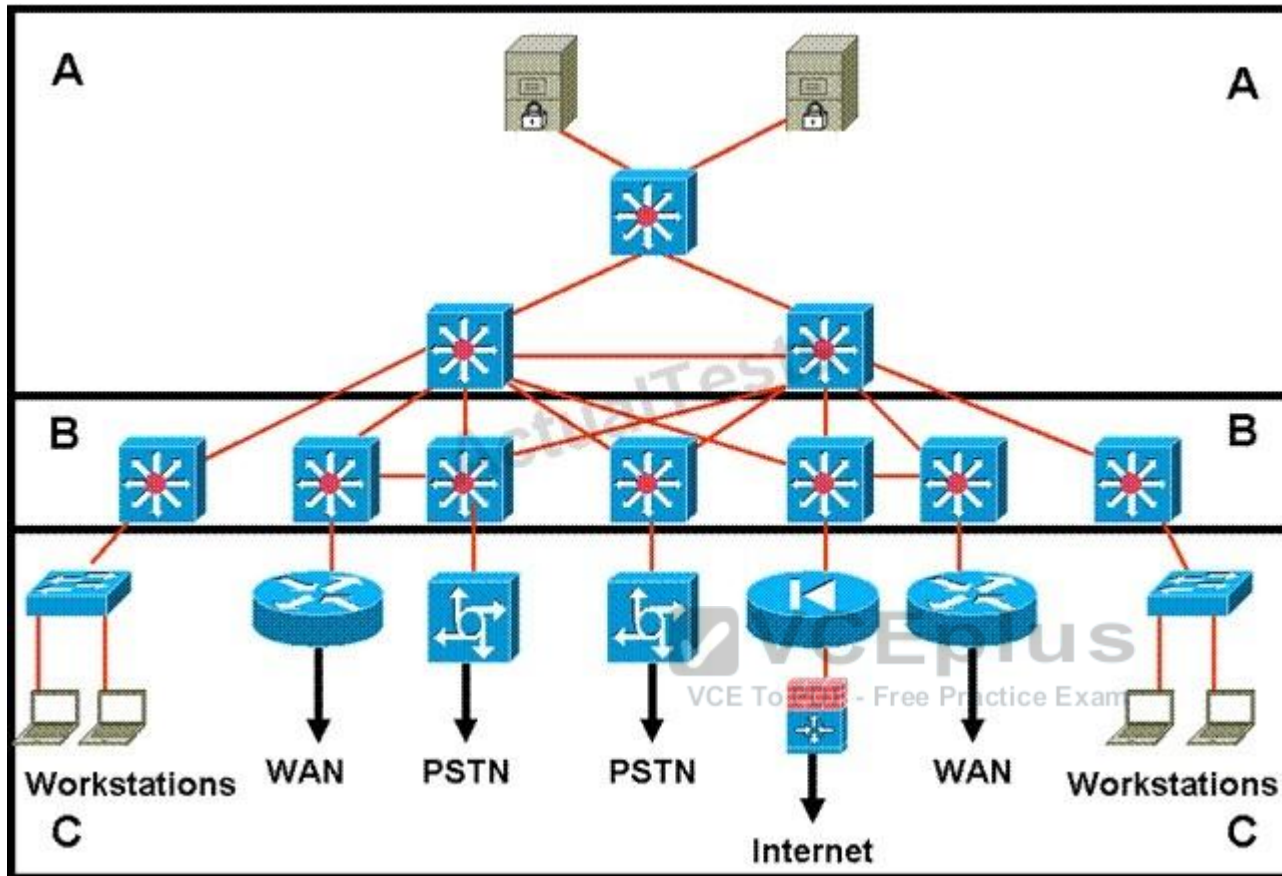
control services, which arc provided to endpoints.
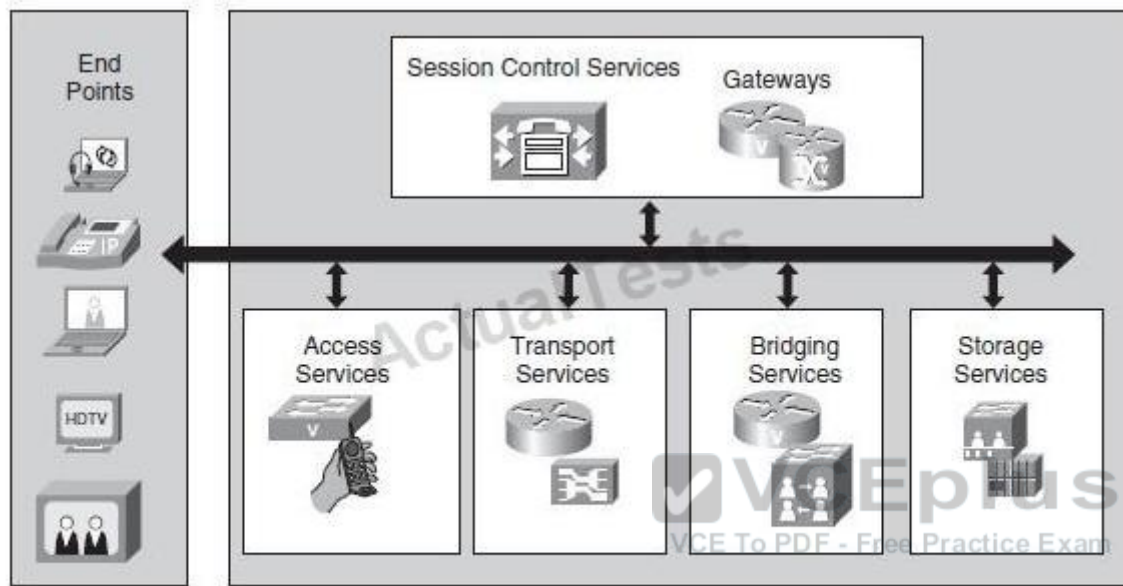
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Figure 14-13    *Media Services Architectural Framework*

**QUESTION 6**
Refer to the exhibit.

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Which layer is the distribution layer?

A. Layer A
B. Layer B
C. Layer C
D. Layers A and B form a consolidated core and distribution layer

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 7**
Which IPv6 feature enables routing to distribute connection requests to the nearest content server?

A. Link-local
B. Site-local
C. Anycast
D. Multicast
E. Global aggregatable

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Any cast is a network addressing and routing methodology in which data grams from a single "Pass Any Exam. Any Time." - www.actualtests.com 13
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sender are routed to the topologically nearest node in a group of potential receivers all identified by the same destination address.

Link: http://en.wikipedia.org/wiki/Anycast

**QUESTION 8**
What is the recommended spanning tree protocol to use for all Layer 2 deployments in a branch office environment?

A. CST
B. RSPT
C. PVST
D. MISTP
E. Rapid PVST +

**Correct Answer:** E
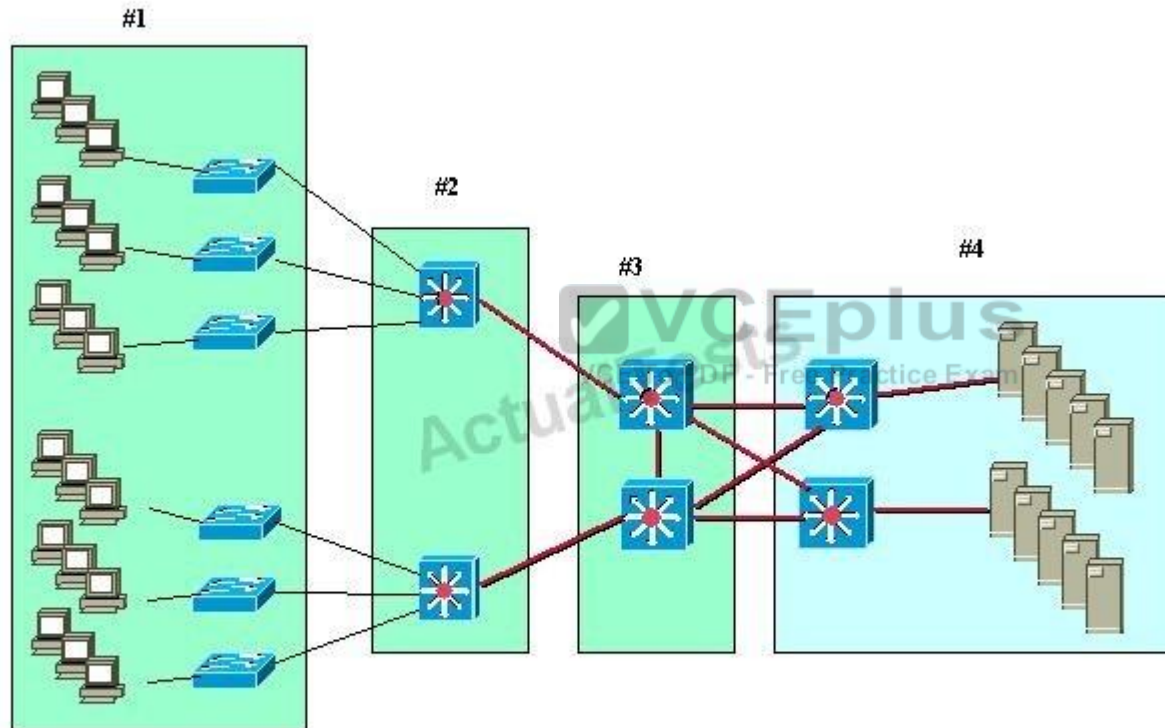**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 9**
Refer to the exhibit.

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A standard, Layer 2 campus network design is pictured. Which numbered box represents the distribution layer?

A. #1
B. #2
C. #3
D. #4

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 10**
Which two are types of network virtualization? (Choose two.)

A. VSS: Virtual Switching System
B. VRF: virtual routing and forwarding
C. VCI: virtual channel identifier
D. VLSM: variable length subnet masking
E. VM: virtual machine
F. VMP: Virtual Memory Pool

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Network virtualization encompasses logical isolated network segments that share the same physical infrastructure. Each segment operates independently and is logically separate from the other segments. Each network segment appears with its own privacy, security, independent set of policies, QoS levels, and independent routing paths.

Here are some examples of network virtualization technologies:

VLAN: Virtual local-area network

VSAN: Virtual storage-area network

VRF: Virtual routing and forwarding

VPN: Virtual private network

VPC: Virtual Port Channel

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**QUESTION 11**
You are tasked with designing a new branch office that will support 75 users with possible expansion in the future and will need a highly available network. Which of the branch design profiles should be implemented?

A. large branch design
B. medium branch design
C. teleworker design
D. small branch design

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Medium Branch Design

The medium branch design is recommended for branch offices of 50 to 100 users, which is similar to the small branch but with an additional access router in the WAN edge (slightly larger) allowing for redundancy services. Typically, two 2921 or 2951 routers are used to support the WAN, and separate access switches are used to provide LAN connectivity.

**QUESTION 12**
Which two can be used as a branch office WAN solution? (Choose two.)

A. frame relay
B. MPLS
C. Metro Ethernet

D. GPRS

E. dial-up modem

F. 3G USB modems

**Correct Answer:** BC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Explanation

Frame relay is old 'shared' technology today's sites use some flavor or Metro E or MPLS/VPN

**QUESTION 13**
What is the acceptable amount of one-way network delay for voice and video applications?

A. 300 bytes

B. 1 sec

C. 150 ms

D. 500 ms

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Delay Components in VoIP Networks

The ITU's G.I 14 recommendation specifics that the one-way delay between endpoints should not exceed 150 ms to be acceptable, commercial voice quality. In private networks, somewhat longer delays might be acceptable for economic reasons. The ITU G.114 recommendation specifics that 151-ms to 400-ms one-way delay might be acceptable provided that organizations are aware that the transmission time will affect the quality of user applications. One-way delays of above 400 ms "Pass Any Exam. Any Time." - www.actualtests.com 18
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are unacceptable for general network planning purposes.

**QUESTION 14**
Which mode is used to exclusively look for unauthorized access points?

A. monitor mode
B. sniffer mode
C. rogue detector mode
D. local mode

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

| AP Mode | Description |
|---------|-------------|
| Monitor mode | |
| Rogue Detector mode | |
| Sniffer mode | |
| Bridge mode | |

Interference detection and avoidance: As Cisco LWAPs monitor all channels, interference is

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detected by a predefined threshold (10 percent by default). Interference can be generated by rogue APs, microwaves, cordless telephones, Bluetooth devices, neighboring WLANs, or other electronic devices.

**QUESTION 15**
Which of the following three options represents the components of the Teleworker Solution? (Choose three.)

A. Cisco Unified IP Phone
B. Cisco 880 Series Router

C. Aironet Office Extend Access Point
D. Catalyst 3560 Series Switch
E. Cisco 2900 Series Router
F. MPLS Layer 3 VPN
G. Leased lines

**Correct Answer:** ABE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

A Cisco ASR is used to terminate Teleworker solutions, not a 2900 series router.

Hybrid teleworker uses Aironet, Advanced teleworker uses 880, both use IP phones.

google: "at_a_glance_c45-652500.pdf" for details

The Cisco Virtual Office Solution for the Enterprise Teleworker is implemented using the Cisco 800 series ISRs. Each ISR has integrated switch ports that then connect to the user's broadband connection. The solution uses a permanent always-on IPsec VPN tunnel back to the corporate "Pass Any Exam. Any Time." - www.actualtests.com 20
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network. This architecture provides for centralized IT security management, corporate-pushed security policies, and integrated identity services. In addition, this solution supports the enterprise teleworker needs through advanced applications such as voice and video. For example, the enterprise teleworker can take advantage of toll bypass, voicemail, and advanced IP phone features not available in the PSTN.

Enterprise Teleworker Module

The enterprise teleworker module consists of a small office or a mobile user who needs to access services of the enterprise campus. As shown in Figure 2-14, mobile users connect from their homes, hotels, or other locations using dialup or Internet access lines. VPN clients are used to allow mobile users to securely access enterprise applications. The Cisco Virtual Office solution provides a solution for teleworkers that is centrally managed using small integrated service routers (ISR) in the VPN solution. IP phone capabilities are also provided in the Cisco Virtual Office solution, providing corporate voice services for mobile users.
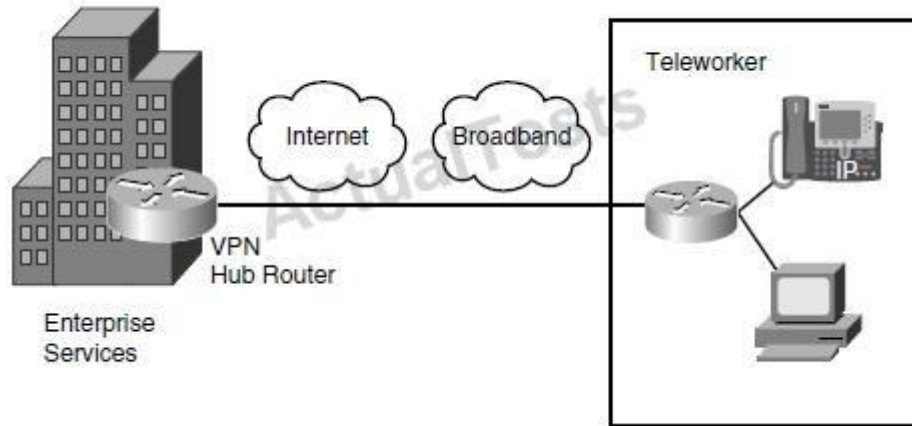
**QUESTION 16**
Which three types of WAN topologies can be deployed in the Service Provider Module? (Choose three.)

A. ring
B. star
C. full mesh
D. core/edge
E. collapsed core
F. partial mesh

**Correct Answer:** BCF
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 17**
DRAG DROP

DRAG DROP

Drag the WAN characteristics on the left to the branch office model where it would most likely to be used on the right.

Drag the WAN characteristics on the left to the branch office model where it would most likely to be used on the right.

| | Small Office |
|---|---|
| Redundant devices | |
| MPLS Deployment model | |
| | Medium Office |
| Redundant Links | |
| Redundant Links and Devices | |
| | Large Office |
| Private WAN deployment | |
| Internet Deployment Model | |

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A.
B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Drag the WAN characteristics on the left to the branch office model where it would most likely to be used on the right.

| Left | Right |
|---|---|
| Redundant devices | **Small Office** |
| | Redundant Links |
| MPLS Deployment model | Internet Deployment Model |
| | **Medium Office** |
| Redundant Links | Redundant devices |
| Redundant Links and Devices | Private WAN deployment |
| Private WAN deployment | **Large Office** |
| | Redundant Links and Devices |
| Internet Deployment Model | MPLS Deployment model |

Explanation:

Small Branch Design

The small branch design is recommended for branch offices that do not require hardware redundancy and that have a small user base supporting up to 50 users. This profile consists of an access router providing WAN services and connections for the LAN services.

The Layer 3 WAN services are based on the WAN and Internet deployment model. A T1 is used for the primary link, and an ADSL secondary link is used for backup. Other network fundamentals are supported, such as EIGRP, floating static routes, and QoS for bandwidth protection.

Medium Branch Design

The medium branch design is recommended for branch offices of 50 to 100 users, which is similar to the small branch but with an additional access router in the WAN edge (slightly larger) allowing for redundancy services.

Large Branch Design

The large branch design is the largest of the branch profiles, supporting between 100 and 1000 users. This design profile is similar to the medium

branch design in that it also provides dual access routers in the WAN edge. In addition, dual Adaptive Security Appliances (ASA) are used for stateful firewall filtering, and dual distribution switches provide the multilayer switching component. The WAN services use an MPLS deployment model with dual WAN links into the WAN cloud.

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**QUESTION 18**
Which statement describes the recommended deployment of DNS and DHCP servers in the Cisco Network Architecture for the Enterprise?

A.  Place the DHCP and DNS servers in the Enterprise Campus Access layer and Enterprise branch.
B.  Place the DHCP and DNS servers in the Enterprise Campus Server Farm layer and Enterprise branch.
C.  Place the DHCP server in the Enterprise Campus Core layer and Remote Access_VPN module with the DNS server in the Internet Connectivity module.
D.  Place the DHCP server in the Enterprise Campus Distribution layer with the DNS server in the Internet Connectivity module.
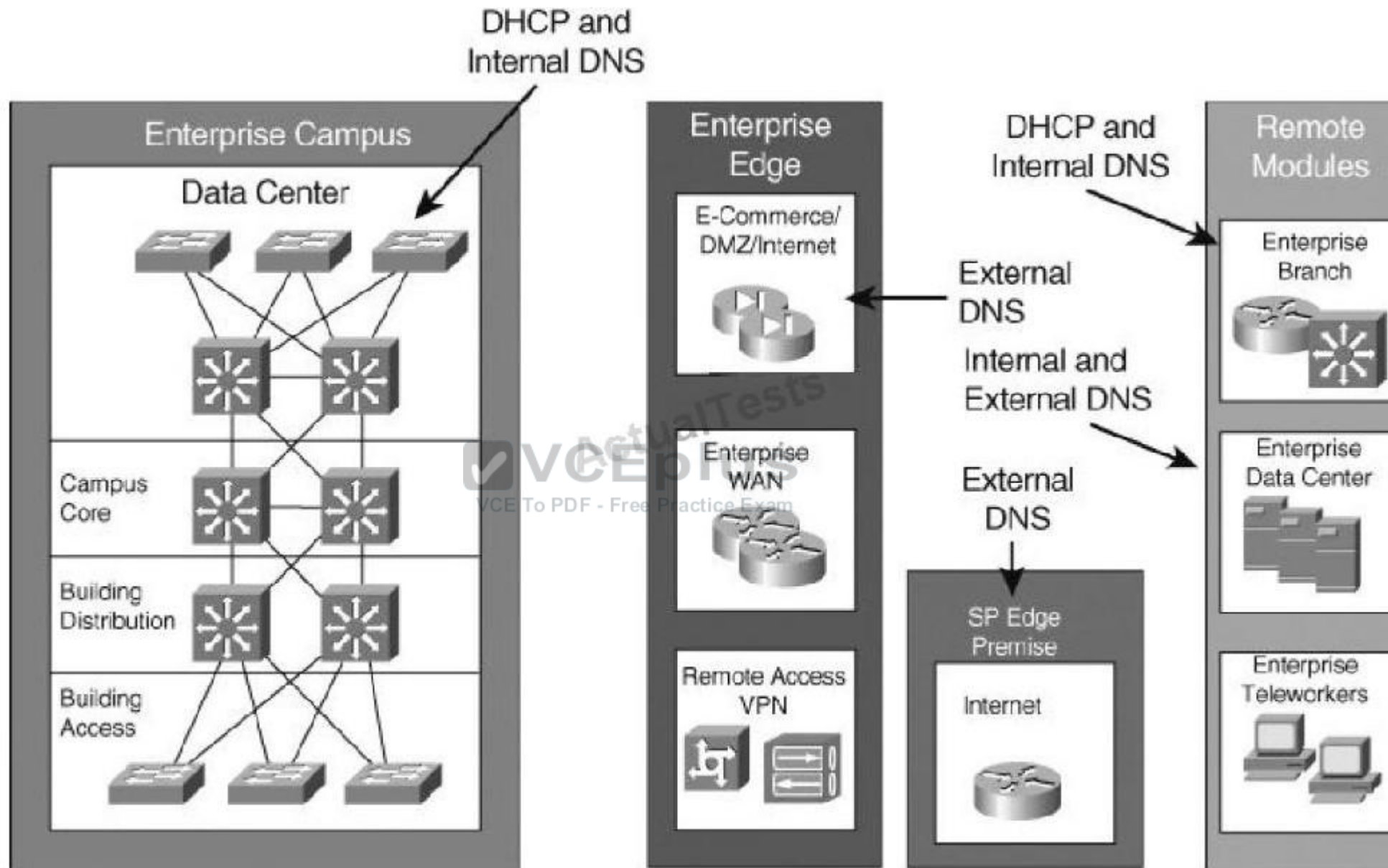
**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

For the Enterprise Campus, DHCP and internal DNS servers should be located in the Server Farm and they should be redundant. External DNS servers can be placed redundantly at the service provider facility and at the Enterprise branch.

DHCP and
Internal DNS

Enterprise Campus

Data Center

Campus Core

Building Distribution

Building Access

Enterprise Edge

E-Commerce/DMZ/Internet

Enterprise WAN

Remote Access VPN

External DNS

Internal and External DNS

External DNS

SP Edge Premise

Internet

DHCP and Internal DNS

Remote Modules

Enterprise Branch

Enterprise Data Center

Enterprise Teleworkers

**QUESTION 19**
Your company's Cisco routers are operating with EIGRP. You need to join networks with an acquisition's heterogeneous routers at 3 sites, operating with EIGRP and OSPF. Which describes the best practice for routing protocol deployment?

A.  Apply OSPF throughout both networks
B.  Apply one-way redistribution exclusively at each location
C.  Apply two-way redistribution exclusively at each location
D.  Apply two-way redistribution at each location with a route filter at only one location
E.  Apply two-way redistribution at each location with a route filter at each location
F.  Apply EIGRP with the same autonomous system throughout both networks

**Correct Answer:** E
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Without filters there is possibility of routing loops.

Link: http://www.cisco.com/en/US/tech/tk365/technologies_tech_note09186a008009487e.shtml

**QUESTION 20**
Which two routing protocols converge most quickly? (Choose two.)

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A.  RIPv1
B.  RIPv2
C.  BGP
D.  OSPF
E.  EIGRP

**Correct Answer:** DE
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 21**
Which of these is the equation used to derive a 64 Kbps bit rate?

A. 2 x 8 kHz x 4-bit code words
B. 8 kHz x 8-bit code words
C. 2 x 4-bit code words x 8 kHz
D. 2 x 4 kHz x 8-bit code words

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

While the human ear can sense sounds from 20 to 20, 000 Hz, and speech encompasses sounds from about 200 to 9000 Hz, the telephone channel was designed to operate at about 300 to 3400 Hz. This economical range carries enough fidelity to allow callers to identify the party at the far end and sense their mood. Nyquist decided to extend the digitization to 4000 Hz, to capture higher-

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frequency sounds that the telephone channel may deliver. Therefore, the highest frequency for voice is 4000 Hz. According to Nyquist theory, we must double the highest frequency, so 2x4kHz = 8kHz.

Each sample will be encoded into a 8-bit code. Therefore 8kHz x 8-bit code = 64 Kbps (notice about the unit Kbps: 8kHz = 8000 samples per second so 8000 x 8-bit = 64000 bit per second = 64 Kilobit per second = 64 Kbps)

Link: http://encyclopedia2.thefreedictionary.com/Nyquist+theorem

Note:

Nyquist theory:

"When sampling a signal (e.g., converting from an analog signal to digital), the sampling frequency must be greater than twice the bandwidth of the input signal in order to be able to reconstruct the original perfectly from the sampled version."

**QUESTION 22**
Which one of these statements is an example of how trust and identity management solutions should be deployed in the enterprise campus network?

A. Authentication validation should be deployed as close to the data center as possible.

B.  Use the principle of top-down privilege, which means that each subject should have the privileges that are necessary to perform their defined tasks, as well as all the tasks for those roles below them.
C.  Mixed ACL rules, using combinations of specific sources and destinations, should be applied as close to the source as possible.
D.  For ease of management, practice defense in isolation - security mechanisms should be in place one time, in one place.

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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Validating user authentication should be implemented as close to the source as possible, with an emphasis on strong authentication for access from untrusted networks. Access rules should enforce policy deployed throughout the network with the following guidelines:

·Source-specific rules with any type destinations should be applied as close to the source as possible.

·Destination-specific rules with any type sources should be applied as close to the destination as possible.

·Mixed rules integrating both source and destination should be used as close to the source as possible.

An integral part of identity and access control deployments is to allow only the necessary access. Highly distributed rules allow for greater granularity and scalability but, unfortunately, increase the management complexity. On the other hand, centralized rule deployment eases management but lacks flexibility and scalability.

Practicing "defense in depth" by using security mechanisms that back each other up is an important concept to understand. For example, the perimeter Internet routers should use ACLs to filter packets in addition to the firewall inspecting packets at a deeper level.

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**QUESTION 23**
With deterministic Wireless LAN Controller redundancy design, the different options available to the designer have their own strengths. Which one of these statements is an example of such a strength?

A.  Dynamic load balancing, or salt-and-pepper access point design, avoids the potential impact of oversubscription on aggregate network performance.
B.  N+N redundancy configuration allows logically grouping access points on controllers to minimize intercontroller roaming events.
C.  N+N+1 redundancy configuration has the least impact to system management because all of the controllers are colocated in an NOC or data center.
D.  N+1 redundancy configuration uses Layer 3 intercontroller roaming, maintaining traffic on the same subnet for more efficiency.

**Correct Answer:** B

**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

With such an arrangement there is no complex mesh of access points & controllers.

Link: http://www.cisco.com/web/learning/le31/le46/cln/qlm/CCDA/design/understanding-wireless- network-controller-technology-3/player.html

N+N WLC Redundancy

With N+N redundancy, shown in Figure 5-14, an equal number of controllers hack up each other. For example, a pair of WLCs on one floor serves as a backup to a second pair on another floor. The top WLC is primary for API and AP2 and secondary for AP3 and AP4. The bottom WLC is primary for AP3 and AP4 and secondary for API and AP2. There should be enough capacity on each controller to manage a failover situation.
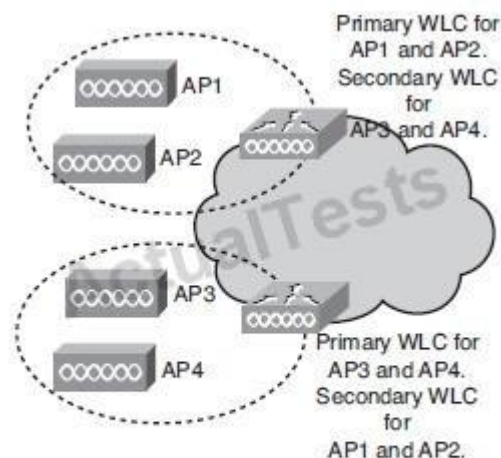


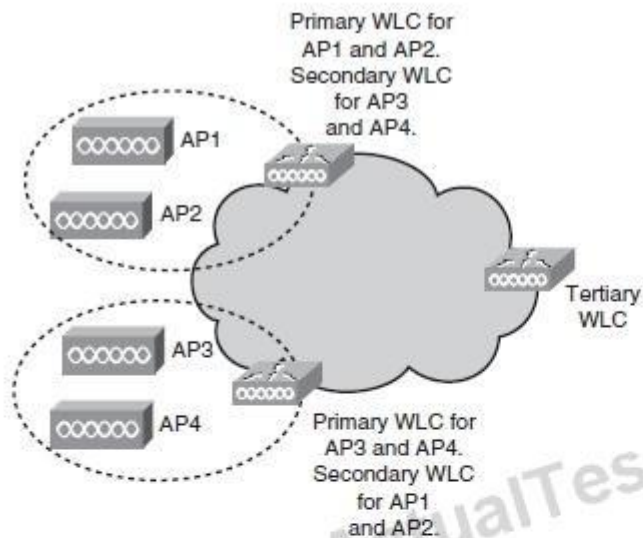**Figure 5-14** *N+N Controller Redundancy*

N+N+1 WLC Redundancy

With N+N+1 redundancy, shown in Figure 5-15, an equal number of controllers back up each other (as with N+N), plus a backup WLC is configured as the tertiary WLC for the APs. N+N+1 redundancy functions the same as N+N redundancy plus a tertiary controller that backs up the "Pass Any Exam.
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secondary controllers. The tertiary WLC is placed in the data center or network operations center

Primary WLC for
AP1 and AP2.
Secondary WLC
for AP3
and AP4.

AP1

AP2

Tertiary
WLC

AP3

AP4

Primary WLC for
AP3 and AP4.
Secondary WLC
for AP1
and AP2.

**Figure 5-15** *N+N+1 Controller Redundancy*

Table 5-9 covers WLC redundancy.

**Table 5-9** *WLC Redundancy*

| WLC Redundancy | Description |
|---|---|
| N+1 | A single WLC acts as the backup for multiple WLCs. The backup WLC is configured as the secondary on APs. |
| N+N | An equal number of controllers back up each other. |
| N+N+1 | An equal number of controllers back up each other. The backup WLC is configured as the tertiary on APs. |

**QUESTION 24**
When designing the threat detection and mitigation portion for the enterprise data center network, which of the following would be the most appropriate solution to consider?

A. 802.1X

B.  ACLs in the core layer

C.  Cisco Security MARS

D.  Cisco Firewall Services Module

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 25**
You have a campus network that consists of only Cisco devices. You have been tasked to discover the device platforms, the IOS versions, and an IP address of each device to map the network. Which proprietary protocol will assist you with this task?

A.  SNMP

B.  TCP

C.  CDP

D.  ICMP

E.  LLDP

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 26**
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Which three technologies are recommended to be used for WAN connectivity in today's Enterprise Edge designs? (Choose three.)

A.  DWDM

B.  Metro Ethernet

C.  Frame Relay

D.  MPLS VPN

E.  ISDN

F.  DSL

G. Wireless

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

There is some discussion about whether ISDN not DWDM should be the answer but it does say TODAYS network

**QUESTION 27**
WAN backup over the Internet is often used to provide primary connection redundancy. Which is the most important consideration when passing corporate traffic over the public Internet?

A. security
B. static versus dynamic routing
C. bandwidth
D. QoS
E. latency

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

WAN Backup over the Internet

Another alternative for WAN backup is to use the Internet as the connectivity transport between sites. However, keep in mind that this type of connection does not support bandwidth guarantees. The enterprise also needs to work closely with the ISP to set up the tunnels and advertise the company's networks internally so that remote offices have reachable IP destinations.

Security is of great importance when you rely on the Internet for network connectivity, so a secure tunnel using IPsec needs to be deployed to protect the data during transport.

**QUESTION 28**
Which three are considered as technical constraints when identifying network requirements? (Choose three.)

A. support for legacy applications

B. bandwidth support for new applications

C. limited budget allocation

D. policy limitations

E. limited support staff to complete assessment

F. support for existing legacy equipment

G. limited timeframe to implement

**Correct Answer:** ABF
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Network design might be constrained by parameters that limit the solution. Legacy applications might still exist that must be supported going forward, and these applications might require a legacy protocol that may limit a design. Technical constraints include the following:

·Existing wiring does not support new technology.

·Bandwidth might not support new applications.

·The network must support exiting legacy equipment.

·Legacy applications must be supported (application compatibility).

**QUESTION 29**
DRAG DROP

DRAG DROP

Drag the description or characteristic on the left to the appropriate technology or protocol on the right.

Drag the description or characteristic on the left to the appropriate technology or protocol on the right.

| | |
|---|---|
| provides complete network visibility from the physical layer to the application layer | SNMP |
| processes larger ACLs efficiently for packet filtering and security services | RMON |
| defines how information is exchanged between network management applications and agents | CDP |
| runs over the data link layer using a multicast address | NetFlow |

A.
B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Drag the description or characteristic on the left to the appropriate technology or protocol on the right.

| provides complete network visibility from the physical layer to the application layer | defines how information is exchanged between network management applications and agents |

| processes larger ACLs efficiently for packet filtering and security services | provides complete network visibility from the physical layer to the application layer |

| defines how information is exchanged between network management applications and agents | runs over the data link layer using a multicast address |

| runs over the data link layer using a multicast address | processes larger ACLs efficiently for packet filtering and security services |

Explanation:

| defines how information is exchanged between network management applications and agents |
| provides complete network visibility from the physical layer to the application layer |
| runs over the data link layer using a multicast address |
| processes larger ACLs efficiently for packet filtering and security services |

**QUESTION 30**
DRAG DROP

DRAG DROP

Click and drag the phases of the PPDIOO network lifecycle approach on the left to their order on the right.

Click and drag the phases of the PPDIOO network lifecycle approach on the left to the their order on the right.

| | |
|---|---|
| Plan | Phase 1 |
| Design | Phase 2 |
| Prepare | Phase 3 |
| Operate | Phase 4 |
| Optimize | Phase 5 |
| Implement | Phase 6 |

A.
B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Click and drag the phases of the PPDIOO network lifecycle approach on the left to the their order on the right.

| Left | Right |
|------|-------|
| Plan | Prepare |
| Design | Plan |
| Prepare | Design |
| Operate | Implement |
| Optimize | Operate |
| Implement | Optimize |

Explanation:

| |
|---|
| Prepare |
| Plan |
| Design |
| Implement |
| Operate |
| Optimize |

**QUESTION 31**
Characterizing an existing network requires gathering as much information about the network as possible. Which of these choices describes the preferred order for the information-gathering process?

A. site and network audits, traffic analysis, existing documentation and organizational input
B. existing documentation and organizational input, site and network audits, traffic analysis
C. traffic analysis, existing documentation and organizational input, site and network audits
D. site and network audits, existing documentation and organizational input, traffic analysis

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

This section describes the steps necessary to characterize the existing network infrastructure and all sites. This process requires three steps:

Step 1. Gather existing documentation about the network, and query the organization to discover additional information. Organization input, a network audit, and traffic analysis provide the key information you need. (Note that existing documentation may be inaccurate.)

Step 2. Perform a network audit that adds detail to the description of the network. If possible, use traffic-analysis information to augment organizational input when you are describing the applications and protocols used in the network.

Step 3. Based on your network characterization, write a summary report that describes the health of the network. With this information, you can propose hardware and software upgrades to support the network requirements and the organizational requirements.

**QUESTION 32**
Which three terms describe the primary functions of the distribution layer of the campus network design hierarchy? (Choose three.)

Cisco 200-310 Exam

A. provides end-user connectivity
B. provides high speed transport
C. provides QoS services
D. enforces security policies
E. provides WAN connections
F. connects access devices to the core backbone

**Correct Answer:** CDF

**Section: (none)**
**Explanation**

**Explanation/Reference:**
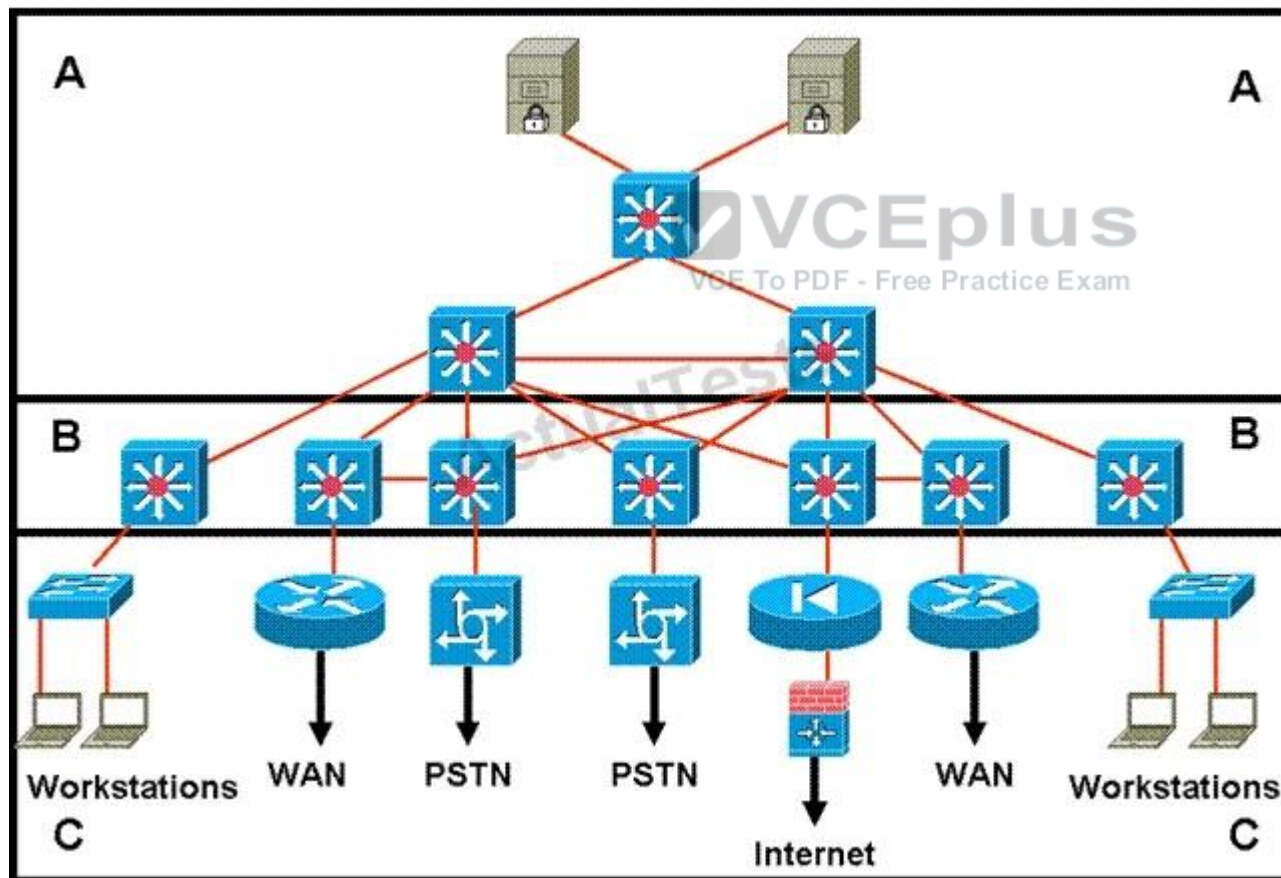Explanation:

Link: http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/campover.html#wp708979

**QUESTION 33**
Refer to the exhibit.

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Which statement accurately represents the characteristics of the core layer in this design?

A. QoS should only be performed only in the core.
B. Load balancing should never be implemented or used.
C. Access lists should be used in the core to perform packet manipulation.
D. Partial mesh should be used as long as it is connected to each device by multiple paths.
E. Policy-based traffic control should be implemented to enable prioritization and ensure the best performance for all time-critical applications.

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 34**
Which two of the following are benefits of using a modular approach to network design? (Choose two.)

A. improves flexibility
B. facilitates implementation
C. lowers implementation costs
D. improves customer participation in the design process

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 35**
Which three modular components are part of the Cisco Enterprise Edge Architecture? (Choose three.)

A. e-commerce module
B. Internet connectivity module
C. server farm module

D. remote access and VPN module
E. PSTN services module
F. enterprise branch module
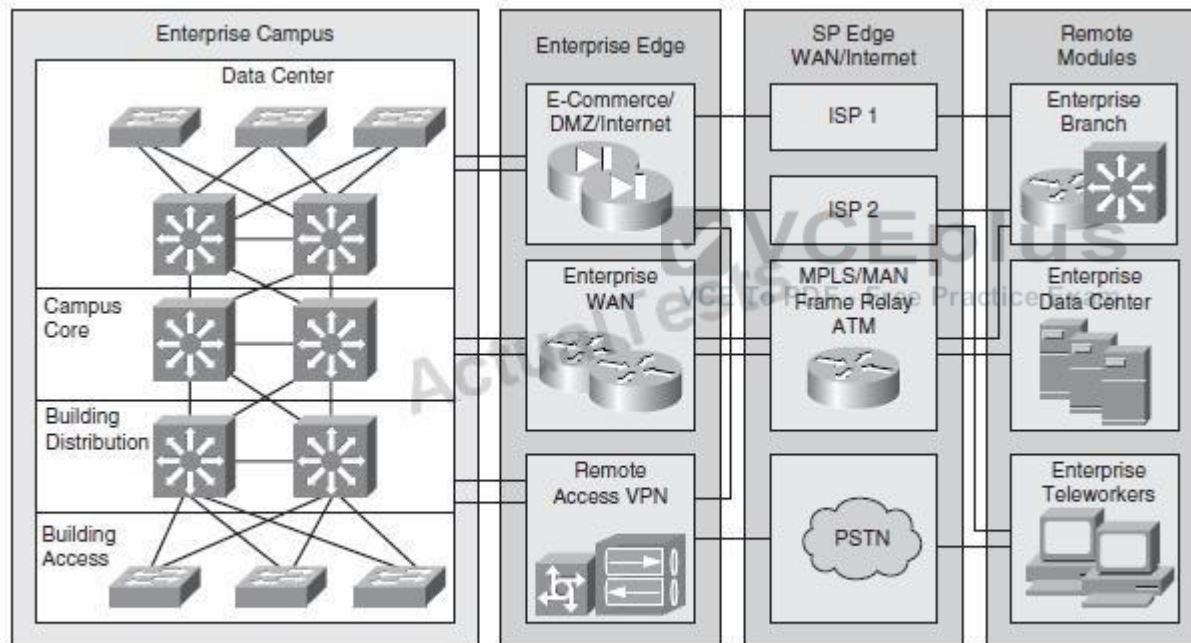G. building distribution module

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:



**Figure 2-5** *Cisco Enterprise Architecture Model*

**QUESTION 36**
Which of the following is a component within the Cisco Enterprise Campus module?

A. Teleworker

B. E-Commerce
C. Internet Connectivity
D. Building Distribution
E. WAN/MAN Site-to-Site VPN

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 37**
What are the three primary functions of the distribution layer of the campus network design hierarchy? (Choose three.)

A. provide end-user connectivity
B. provide high speed transport
C. provide QoS services
D. enforce security policies
E. provide WAN connections
F. connect access devices to the core backbone

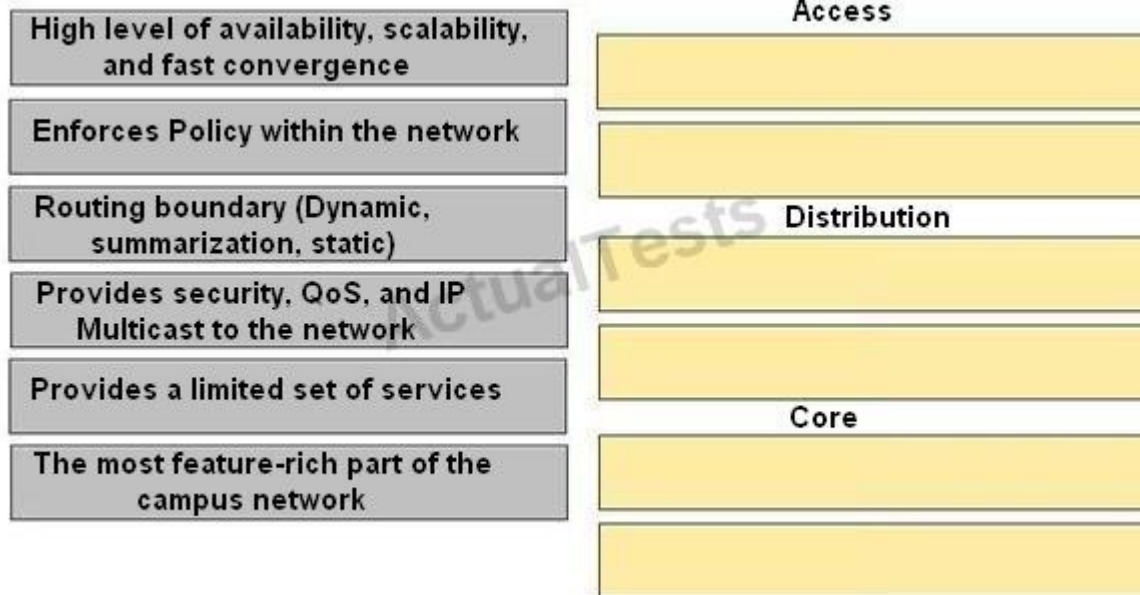**Correct Answer:** CDF
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 38**
DRAG DROP

Drag the characteristics of the traditional campus network on the left to the most appropriate hierarchical network layer on the right.
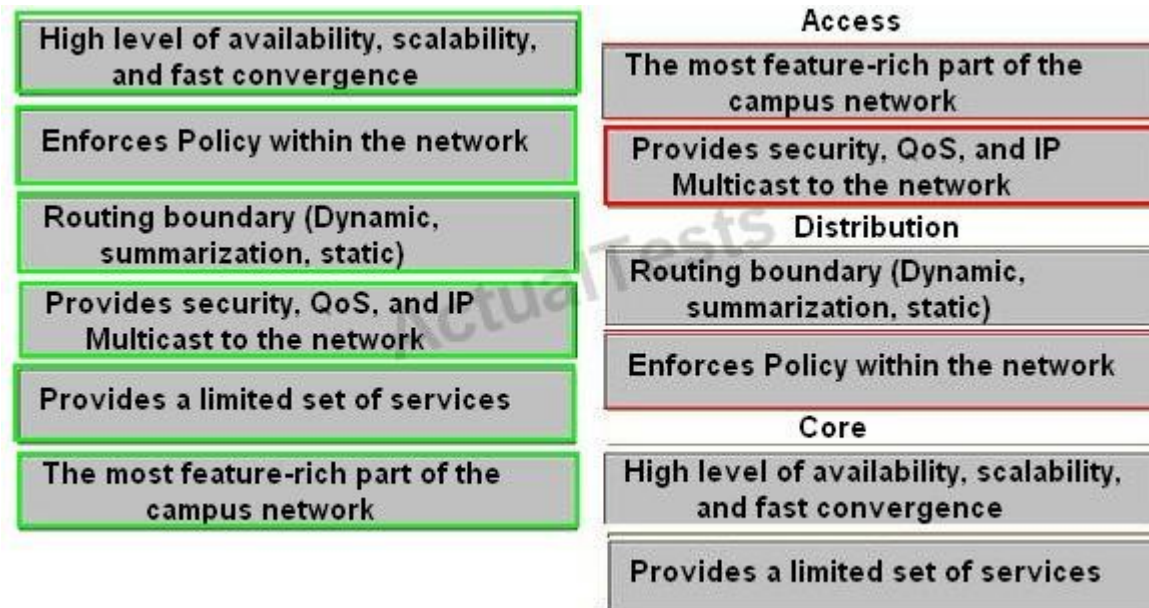
| | Access |
|---|---|
| High level of availability, scalability, and fast convergence | |
| Enforces Policy within the network | |
| | Distribution |
| Routing boundary (Dynamic, summarization, static) | |
| Provides security, QoS, and IP Multicast to the network | |
| | Core |
| Provides a limited set of services | |
| The most feature-rich part of the campus network | |

A.

B.

C.

D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

| High level of availability, scalability, and fast convergence | **Access** |
|---|---|
| Enforces Policy within the network | The most feature-rich part of the campus network |
| Routing boundary (Dynamic, summarization, static) | Provides security, QoS, and IP Multicast to the network |
| Provides security, QoS, and IP Multicast to the network | **Distribution** |
| Provides a limited set of services | Routing boundary (Dynamic, summarization, static) |
| The most feature-rich part of the campus network | Enforces Policy within the network |
| | **Core** |
| | High level of availability, scalability, and fast convergence |
| | Provides a limited set of services |

Explanation:

Access

Distribution

Core

Large-Building LANs
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Large-building LANs are segmented by floors or departments. The building-access component serves one or more departments or floors. The building-distribution component serves one or more building-access components. Campus and building backbone devices connect the data center, building-distribution components, and the enterprise edge-distribution component. The access layer typically uses Layer 2 switches to contain costs, with more expensive Layer 3 switches in the distribution layer to provide policy enforcement. Current best practice is to also deploy multilayer switches in the campus and building backbone.

Cisco Enterprise Architecture Model

Core

Distribution

Access

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**QUESTION 39**
DRAG DROP

Drag the network function on the left to the functional area or module where it is most likely to be performed in the enterprise campus infrastructure on the right.

Drag the network function on the left to the functional area or module where it is most likely to be performed in the enterprise campus infrastructure on the right.

| | |
|---|---|
| aggregates connectivity to voice, video, and data outside the enterprise with QoS and security | Enterprise Campus |
| provides internal users with external HTTP, FTP, SMTP, and DNS connectivity | Enterprise Edge |
| | E-Commerce |
| enables service-oriented architectures, virtualization, and secure computing with load balancing, redundancy | Internet Connectivity |
| enables intelligent route and switch, high availability resilient multilayer design and integrated security | Remote Access and VPN |
| supports application traffic through the internet, initiated outside the enterprise network | Data Center |
| terminates traffic that us forwarded by the internet connectivity module | |

A.

B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Drag the network function on the left to the functional area or module where it is most likely to be performed in the enterprise campus infrastructure on the right.

| Left | Right |
|---|---|
| aggregates connectivity to voice, video, and data outside the enterprise with QoS and security | enables intelligent route and switch, high availability resilient multilayer design and integrated security |
| provides internal users with external HTTP, FTP, SMTP, and DNS connectivity | aggregates connectivity to voice, video, and data outside the enterprise with QoS and security |
| enables service-oriented architectures, virtualization, and secure computing with load balancing, redundancy | supports application traffic through the internet, initiated outside the enterprise network |
| enables intelligent route and switch, high availability resilient multilayer design and integrated security | provides internal users with external HTTP, FTP, SMTP, and DNS connectivity |
| supports application traffic through the internet, initiated outside the enterprise network | terminates traffic that us forwarded by the internet connectivity module |
| terminates traffic that us forwarded by the internet connectivity module | enables service-oriented architectures, virtualization, and secure computing with load balancing, redundancy |

Explanation:

1 Enterprise Edge

2 Internet Connectivity

3 Data Center

4 Enterprise Campus

5 E-Commerce

6 Remote Access and VPN

please refer to link.

Link: http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/campover.html#wp708979

CCDA Study Guide: Diane Teare

**QUESTION 40**
Where in the Cisco Enterprise Architecture model does network management reside?

A. Enterprise data center module
B. Enterprise campus module
C. Enterprise edge module
D. Service Provider edge module
E. Service Provider data center module

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:
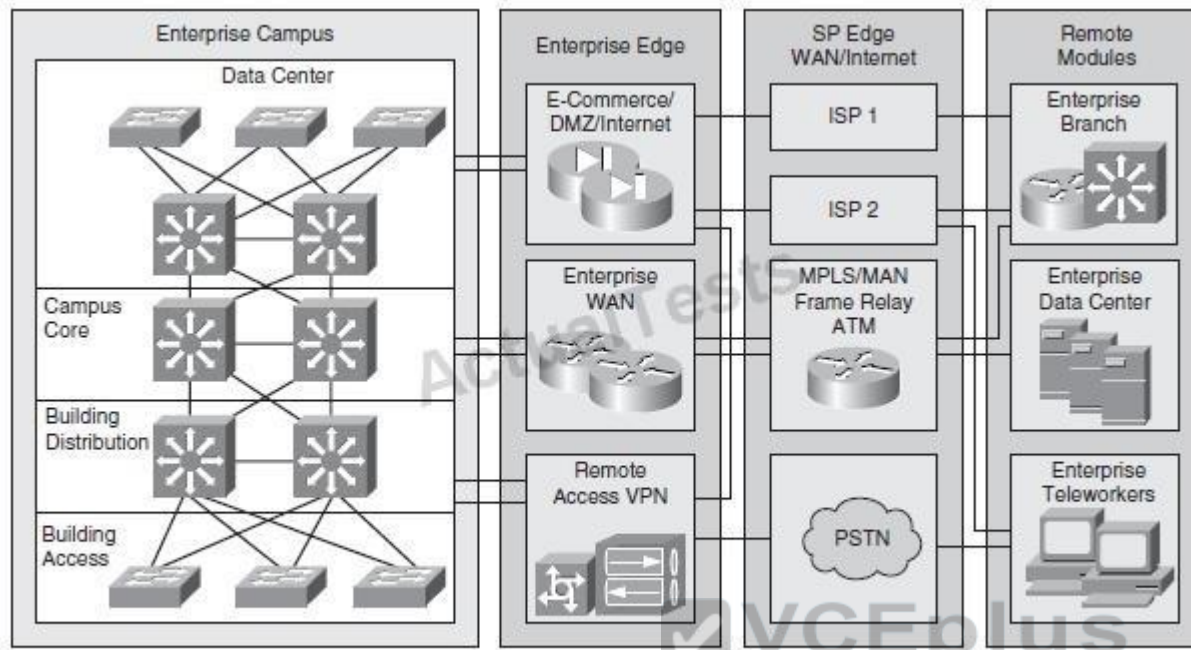
**Figure 2-5** *Cisco Enterprise Architecture Model*

The network management servers reside in the campus infrastructure but have tie-ins to all the components in the enterprise network for monitoring and management.

**QUESTION 41**
DRAG DROP

DRAG DROP

Drag the security prevision on the left to the appropriate Network module on the right.

Drag the security prevision on the left to the appropriate Network module on the right.

Protect the endpoints using network-based intrusion prevention.

Filter and rate-limit control plane traffic.

Protect against inadvertent loops.

Does not perform security functions to mitigate transit threats.

Protect the infrastructure using NFP best practices.

Protect network services including DHCP, ARP, and IP spoofing protection.

Access

Distribution

Core

A.
B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Drag the security prevision on the left to the appropriate Network module on the right.

| | |
|---|---|
| Protect the endpoints using network-based intrusion prevention. | **Access** |
| | Protect network services including DHCP, ARP, and IP spoofing protection. |
| Filter and rate-limit control plane traffic. | Protect the endpoints using network-based intrusion prevention. |
| Protect against inadvertent loops. | **Distribution** |
| | Protect the infrastructure using NFP best practices |
| Does not perform security functions to mitigate transit threats. | Protect against inadvertent loops. |
| Protect the infrastructure using NFP best practices. | **Core** |
| | Does not perform security functions to mitigate transit threats. |
| Protect network services including DHCP, ARP, and IP spoofing protection. | Filter and rate-limit control plane traffic. |

Explanation:

Please refer to link.

Link: http://www.ciscopress.com/articles/article.asp?p=1073230&seqNum=2

Building access layer:

Protect network services including DHCP, ARP, and IP spoofing protection

Protect against inadvertent loops

Building distribution layer:

Protect the endpoints using network-based intrusion prevention

Protect the infrastructure using NFP best practices

Campus Core:

Does not perform any security functions to mitigate transit

Filter and rate-limits control-plane traffic

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http://www.cisco.com/en/US/docs/solutions/Enterprise/Security/SAFE_RG/chap5.html#wp109091 http://www.cisco.com/en/US/docs/solutions/Enterprise/Security/SAFE_RG/chap3.html

**QUESTION 42**
Which three solutions are part of the Borderless Network Services? (Choose three.)

A. Wireless
B. Routing
C. TrustSec
D. MediaNet
E. Switching
F. EnergyWise
G. Next-Gen WAN

**Correct Answer:** CDF
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

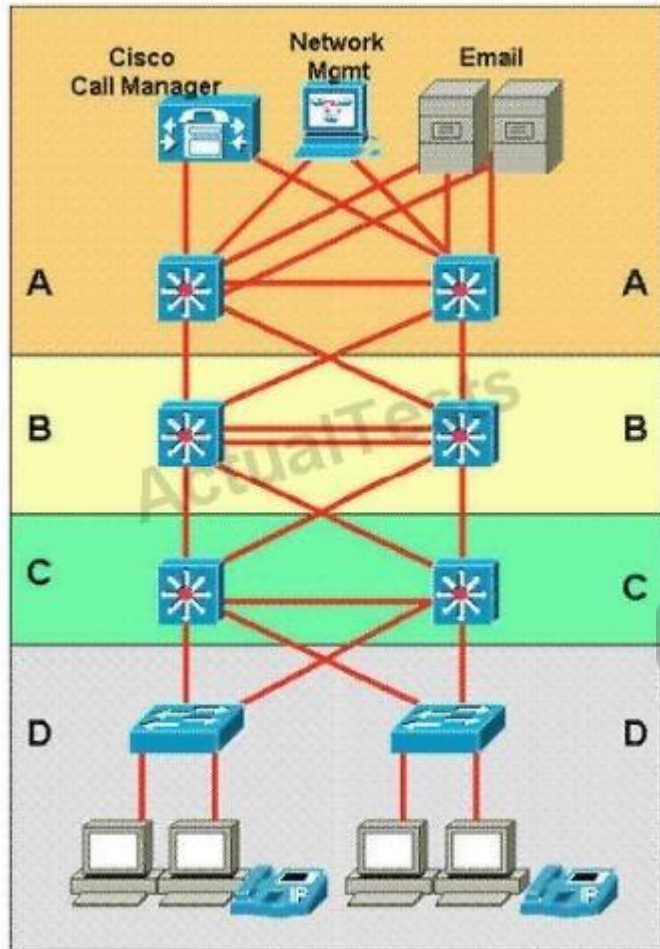"Pass Any Exam. Any Time." - www.actualtests.com 54
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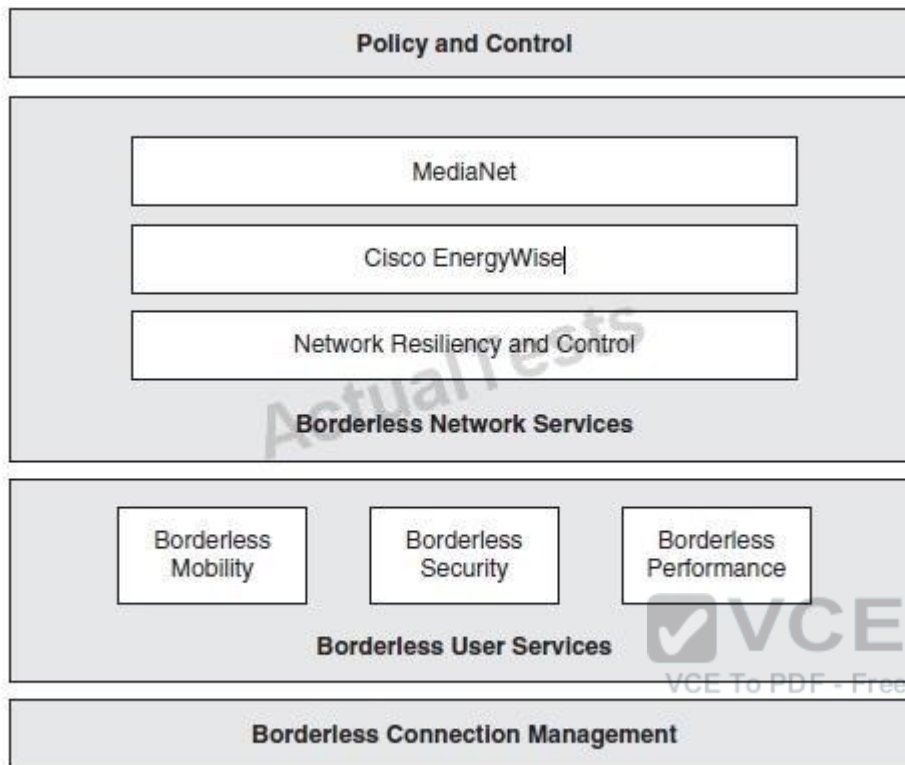
**Figure 1-2** *Borderless Architecture*

**QUESTION 43**
Refer to the exhibit.

Which two statements correctly identify the layers of the Enterprise Campus module? (Choose two.)

A. A is the Data Center Module and C is the Campus Core layer.
B. A is the Data Center Module and D is the Building Access layer.
C. B is the Campus Core layer and C is the Building Distribution layer.
D. B is the Building Distribution layer and C is the Campus Core layer.
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E. A is the Internet Connectivity layer and B is the Campus Core layer.

F.  B is the Building Distribution layer and D is the Building Access layer.

**Correct Answer:** BC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Module characteristics show to which category the blocks belong to.

Link: http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/campover.html#wp708780

**QUESTION 44**
The evolution of the Data Center is best represented by the 3.0 architecture component of virtualization. Which of the following is not an example of the virtualization taking place in the Data Center?

A.  Virtualized media access utilizing Fiber Channel over Ethernet
B.  VLANs and virtual storage area networks (VSANs) provide for virtualized LAN and SAN connectivity, separating physical networks and equipment into virtual entities
C.  Virtual Machines that run an application within the client operating system, which is further virtualized and running on common hardware
D.  Storage devices virtualized into storage pools, and network devices are virtualized using device contexts

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 45**
When there is a need for immunity to EMI for connecting locations that are greater than 100 meters apart, which two solutions can be utilized? (Choose two.)

A.  multimode fiber
B.  Fiber Channel
C.  HVDC transmission lines
D.  single-mode fiber

E. serial RS-232

F. Gigabit Ethernet 1000BASE-CX

**Correct Answer:** AD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 46**
Which layer of the OSI model does Cisco recommend to place the enterprise network core layer, when designing a network based on its switched hierarchical design?

A. Layer 1

B. Layer 2

C. Layer 3

D. Layer 4

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 47**
OSPF will be used as the IGP within a campus network. Which two things should you consider before deployment? (Choose two.)

A. All areas need to connect back to area 0.

B. The OSPF process number on each router should match.

C. NSSA areas should be used when an area cannot connect directly to area 0.

D. Stub areas should be connected together using virtual links.

E. ECMP may cause undesired results depending on the environment.

**Correct Answer:** AE
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 48**
Which Cisco technology using Nexus NX-OS infrastructure allows the network architect to create up to four separate control and data plane instances of the Nexus chassis?

A.  virtual port-channel
B.  virtual routing and forwarding
C.  virtual switching system
D.  virtual device context

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Virtualization

Virtual local-area network (VLAN), virtual storage-area network (VSAN), and virtual device contexts (VDC) help to segment the LAN, SAN, and network devices instances.

Cisco Nexus 1000V virtual switch for VMware ESX and ESXI help to deliver visibility and policy control for virtual machines (VM).

Flexible networking options with support for all server form factors and vendors, including support for blade servers from Cisco, Dell, IBM, and HP with integrated Ethernet and Fiber Channel switches.

**QUESTION 49**
Which three options are valid Cisco STP tools used to ensure best-practice access layer design for the enterprise campus? (Choose three.)

A.  Port fast
B.  UDLD
C.  Root Guard
D.  BPDU Guard
E.  Flex Links
F.  SPAN
G.  Ether Channel

**Correct Answer:** ACD
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

Access layer Limit VLANs to a single closet when possible to provide the most deterministic and highly available topology.

Use RPVST+ if STP is required. It provides the best convergence.

Set trunks to ON and ON with no-negotiate

Manually prune unused VLANs to avoid broadcast propagation.

Use VTP Transparent mode, because there is little need for a common VLAN database in hierarchical networks.

Disable trunking on host ports, because it is not necessary. Doing so provides more security and speeds up Port Fast.

Consider implementing routing in the access layer to provide fast convergence and Layer 3 load balancing.

Use Cisco STP Toolkit, which provides Port Fast, Loop Guard, Root Guard, and BPDU Guard.

**QUESTION 50**
Spanning Layer 2 across geographically separate data centers is a key consideration for current data center designs. Which is the name of the NX-OS technology that facilitates MAC in IP transport for Layer 2 VLANs across any IP network?

A. Overlay Transport Virtualization
B. Virtual Private LAN Services
C. Generic Routing Encapsulation
D. QinQ tunneling

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 51**
Which two statements about designing the Data Center Access layer are correct? (Choose two.)

A. Multiport NIC servers should each have their own IP address.
B. Layer 3 connectivity should never be used in the access layer.

C.  Layer 2 connectivity is primarily implemented in the access layer.

D.  Multiport NIC servers should never be used in the access layer.

E.  Layer 2 clustering implementation requires servers to be Layer 2 adjacent.

**Correct Answer:** CE
**Section: (none)**
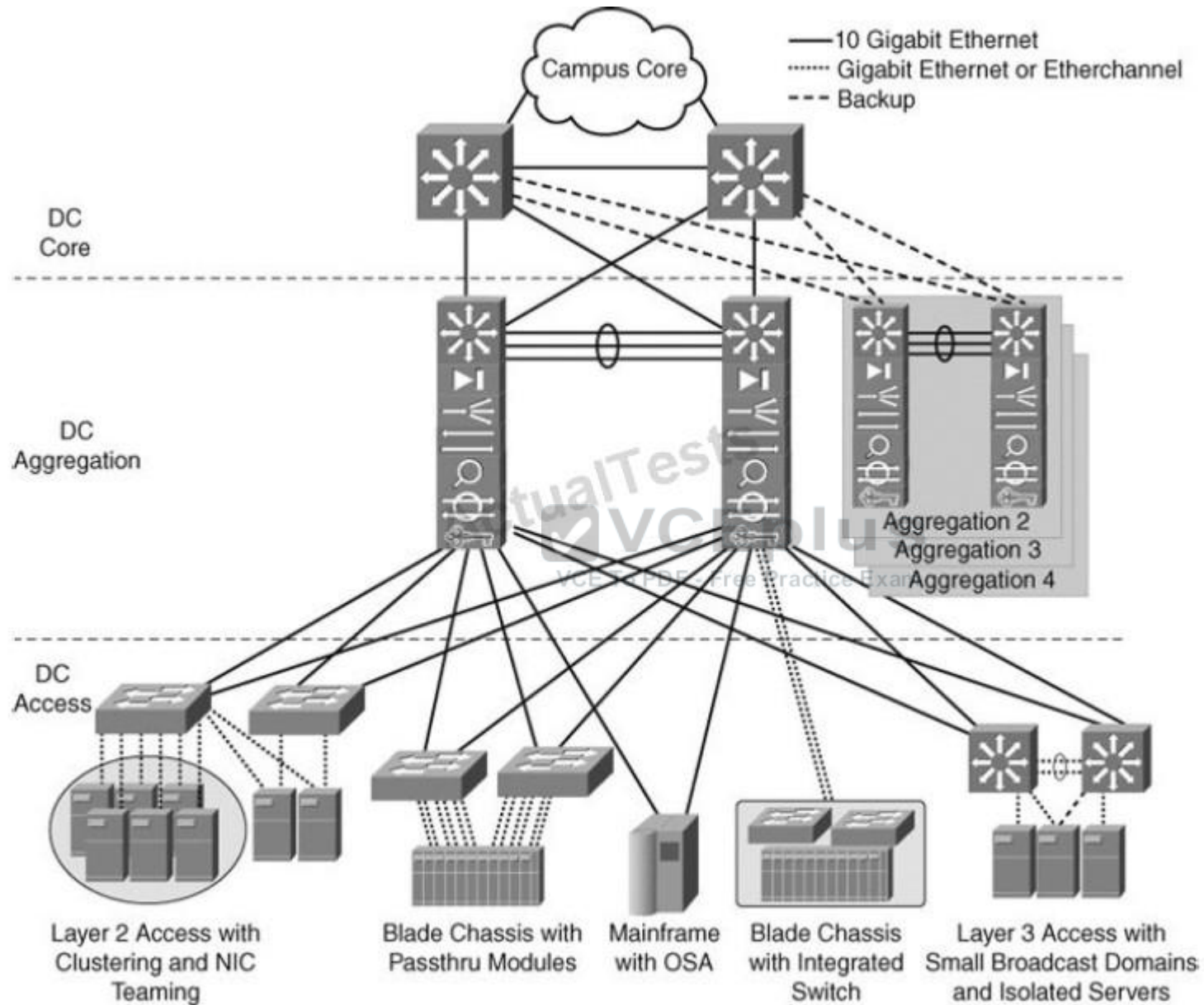**Explanation**

**Explanation/Reference:**
Explanation:

User access is primarily layer 2 in nature, layer 2 clustering is possible only in layer 2

Here is the Explanation: from the Cisco press CCDA certification guide

Figure 4-8. Enterprise Data Center Infrastructure Overview

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Defining the DC Access Layer

The data center access layer's main purpose is to provide Layer 2 and Layer 3 physical port density for various servers in the data center. In addition, data center access layer switches provide high-performance, low-latency switching and can support a mix of oversubscription requirements. Both Layer 2 and Layer 3 access (also called routed access) designs are available, but most data center access layers are built using Layer 2 connectivity. The Layer 2 access design uses VLAN trunks upstream, which allows data center aggregation services to be shared across the same VLAN and across multiple switches. Other advantages of Layer 2 access are support for NIC teaming and server clustering that requires network connections to be Layer 2 adjacent or on the same VLAN with one another.

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**QUESTION 52**
What is the primary consideration when choosing a routed network design over a traditional campus network design?
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A. Layer 3 service support at the network edge

B. the routing protocol choice: open (OSPF) or proprietary (EIGRP)

C. the routing abilities of the host devices

D. the need to control the broadcast domains within the campus core

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

Layer 3 ability at network edge should be available to leverage the benefits of routed network design.

Link: http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/campover.html

**QUESTION 53**
When selecting which hardware switches to use throughout an enterprise campus switched network, which consideration is not relevant?

A. whether data link layer switching based upon the MAC address is required

B. the number of shared media segments

C. which infrastructure service capabilities are required

D. whether to support Layer 3 services at the network edge

**Correct Answer:** B
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

Shared media are not used in modern networks; all links are operating full-duplex "Pass Any Exam. Any Time." - www.actualtests.com 64
Cisco 200-310 Exam
Link: http://www.cisco.com/en/US/docs/solutions/Enterprise/Campus/campover.html

**QUESTION 54**
Which two of these practices are considered to be best practices when designing the access layer for the enterprise campus? (Choose two.)

A. Implement all of the services (QoS, security, STP, and so on) in the access layer, offloading the work from the distribution and core layers.
B. Always use a Spanning Tree Protocol; preferred is Rapid PVST+.
C. Use automatic VLAN pruning to prune unused VLANs from trunked interfaces to avoid broadcast propagation.
D. Avoid wasted processing by disabling STP where loops are not possible.
E. Use VTP transparent mode to decrease the potential for operational error.

**Correct Answer:** BE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

When designing the building access layer, you must consider the number of users or ports required to size up the LAN switch. Connectivity speed for each host should also be considered. Hosts might be connected using various technologies such as Fast Ethernet, Gigabit Ethernet, or port channels. The planned VLANs enter into the design.

Performance in the access layer is also important. Redundancy and QoS features should be considered.

The following are recommended best practices for the building access layer:

· Limit VLANs to a single closet when possible to provide the most deterministic and highly available topology.

· Use Rapid Per-VLAN Spanning Tree Plus (RPVST+) if STP is required. It provides the faster "Pass Any Exam. Any Time." - www.actualtests.com 65
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convergence than traditional 802.1d default timers.

· Set trunks to ON and ON with no-negotiate.

· Manually prune unused VLANs to avoid broadcast propagation (commonly done on the distribution switch).

· Use VLAN Trunking Protocol (VTP) Transparent mode, because there is little need for a common VLAN database in hierarchical networks.

· Disable trunking on host ports, because it is not necessary. Doing so provides more security and speeds up PortFast.

· Consider implementing routing in the access layer to provide fast convergence and Layer 3 load balancing.

· Use the switchport host commands on server and end-user ports to enable PortFast and disable channeling on these ports.

· Use Cisco STP Toolkit, which provides

· PortFast: Bypass listening-learning phase for access ports

· Loop GuarD. Prevents alternate or root port from becoming designated in absence of bridge protocol data units (BPDU)

· Root GuarD. Prevents external switches from becoming root

· BPDU GuarD. Disables PortFast-enabled port if a BPDU is received

Cisco Press CCDA 640-864 Official Certification Guide Fourth Edition, Chapter 3, Page 85

**QUESTION 55**
The enterprise campus core layer has requirements that are unique from the distribution and access layers. Which of the following is true about the core layer?

A.  The core layer provides convergence using Layer 2 and Layer 3 services and features.
B.  The core layer provides high availability to support the distribution layer connections to the enterprise edge.
C.  The campus core layer is optional.
D.  The core layer requires high performance to manage the traffic policing across the backbone.

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 56**
Which of these statements is true concerning the data center access layer design?

A.  The access layer in the data center is typically built at Layer 3, which allows for better sharing of services across multiple servers.
B.  With Layer 2 access, the default gateway for the servers can be configured at the access or aggregation layer.

C.  A dual-homing NIC requires a VLAN or trunk between the two access switches to support the dual IP addresses on the two server links to two separate switches.
D.  The access layer is normally not required, as dual homing is standard from the servers to the aggregation layer.

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 57**
Which one of these statements is true concerning the data center distribution (aggregation) layer design?

A.  With Layer 3 at the aggregation layer, the physical loops in the topology must still be managed by STP.
B.  The boundary between Layer 2 and Layer 3 must reside in the multilayer switches, independent of any other devices such as firewalls or content switching devices.
C.  A mix of both Layer 2 and Layer 3 access is sometimes the most optimal.
D.  In a small data center, the aggregation layer can connect directly to the campus core, exchanging IP routes and MAC address tables.

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 58**
DRAG DROP

DRAG DROP

Drag the technology on the left to the type of enterprise virtualization where it is most likely to be found on the right.

Drag the technology on the left to the type of enterprise virtualization where it is most likely to be found on the right.

| ASA firewall context |
| IPS |
| vPC |
| VLAN |
| VDC |
| VRF |

**Network Virtualization**

**Device Virtualization**

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A.

B.

C.

D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Drag the technology on the left to the type of enterprise virtualization where it is most likely to be found on the right.

| | Network Virtualization |
|---|---|
| ASA firewall context | vPC |
| IPS | VLAN |
| vPC | VRF |
| VLAN | **Device Virtualization** |
| VDC | ASA firewall context |
| VRF | IPS |
| | VDC |

Explanation:

Here is the correct answer

Network Virtualization

* VPC

* VLAN

* VRF

Device Virtualization

*ASA firewall context

*IPS

*VDC

Network virtualization encompasses logical isolated network segments that share the same physical infrastructure. Each segment operates independently and is logically separate from the other segments. Each network segment appears with its own privacy, security, independent set of policies, QoS levels, and independent routing paths.

Here are some examples of network virtualization technologies:

Device virtualization allows for a single physical device to act like multiple copies of itself. Device virtualization enables many logical devices to run independently of each other on the same physical piece of hardware. The software creates virtual hardware that can function just like the physical network device. Another form of device virtualization entails using multiple physical

devices to act as one logical unit.

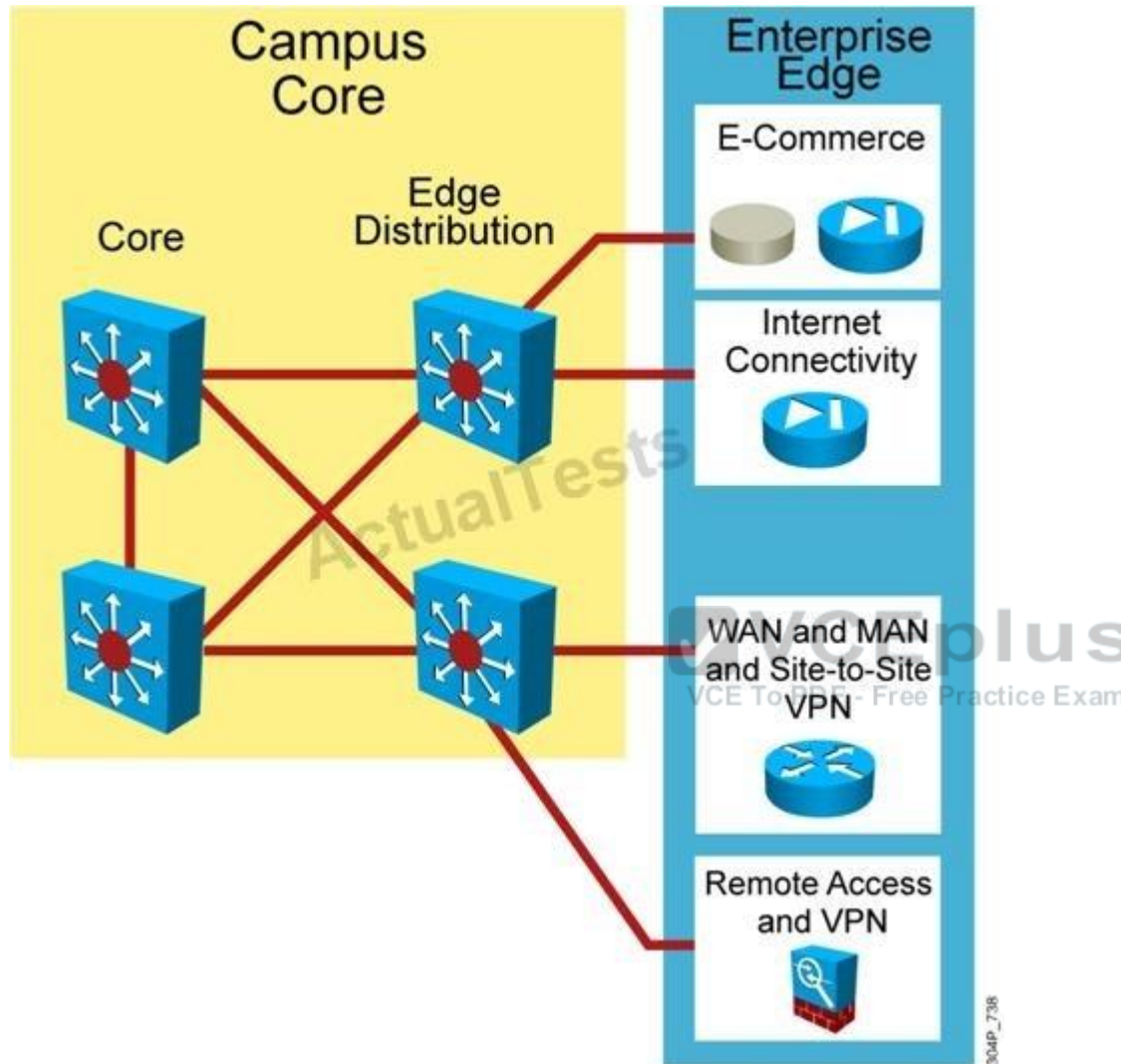Here are some examples of device virtualization technologies:

Cisco Press CCDA 640-864 Official Certification Guide Fourth Edition, Chapter 4

**QUESTION 59**
Refer to the exhibit.

Cisco 200-310 Exam
Which statement is true concerning enterprise edge distribution switches?

A. The speed of switching is the most critical feature.
B. Security requirements are offloaded to the other modules for performance reasons.

C. Edge distribution switches are only required when using a collapsed core backbone.

D. Enterprise edge distribution switches are similar to the building distribution layer.

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 60**
An enterprise campus module is typically made up of four sub modules, as described by the Cisco Enterprise Architecture Model. Which two sub modules are part of this module?

A. DMZ

B. enterprise branch

C. building distribution

D. server farm/data center

E. MAN

**Correct Answer:** CD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 61**
Which is a factor in enterprise campus design decisions?

A. network application characteristics

B. routing protocol characteristics

C. switching latency characteristics

D. packet filtering characteristics

**Correct Answer:** A
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 62**
Which network virtualization technology involves creating virtual routers with its own individual routing tables on a physical router?

A. VSS
B. vPC
C. VRF
D. VLAN

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 63**
Which protocol is the recommended first-hop redundancy protocol for an existing infrastructure that contains multiple vendors and platforms?

A. HSRP
B. VRRP
C. IGRP
D. OSPF

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 64**
Which IGP provides the fastest convergence by default?

A. EIGRP

B. OSPF

C. IS-IS

D. RSTP

E. BGP

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 65**
Which three are valid Layer 2 access designs? (Choose three.)

A. Looped Triangle

B. Looped Square

C. Looped U

D. Loop-Free Triangle

E. Loop-Free Square

F. Loop-Free U

**Correct Answer:** ABF
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 66**
Which Gigabit Ethernet media type provides the longest reach without a repeater?

A. 1000Base-CX

B. 1000Base-LX

C. 1000Base-SX

D. 1000Base-T

**Correct Answer:** B

**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 67**
DRAG DROP

DRAG DROP

Drag the network characteristic on the left to the design method on the right which will best ensure redundancy at the building distribution layer.

Drag the network characteristic on the left to the design method on the right which will best ensure redundancy at the building distribution layer.

| | |
|---|---|
| Support Layer 2 VLANs spanning multiple access layer switches across the distribution switches | Layer 2 between distribution and access layers, with a Layer 3 link between the distribution switches |
| Convergence (FHRP) is not an issue | Layer 2 between distribution and access layers, with a Layer 2 link between the distribution switches |
| FHRP for convergence, no VLANs span between access layer switches across the distribution switches | VSS |

A.
B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Drag the network characteristic on the left to the design method on the right which will best ensure redundancy at the building distribution layer.

| | |
|---|---|
| Support Layer 2 VLANs spanning multiple access layer switches across the distribution switches | Support Layer 2 VLANs spanning multiple access layer switches across the distribution switches |
| Convergence (FHRP) is not an issue | FHRP for convergence, no VLANs span between access layer switches across the distribution switches |
| FHRP for convergence, no VLANs span between access layer switches across the distribution switches | Convergence (FHRP) is not an issue |

Explanation:

Layer 2 between distribution and access layers, with a Layer 3 link between the distribution switches

-> Support Layer 2 VLANs spanning multiple access layer switches across the distribution switches

Layer 2 between distribution and access layers, with a Layer 2 link between the distribution switches

-> FHRP for convergence, no VLANs span between access layer switches across the distribution switches

VSS -> Convergence (FHRP) is not an issue

The following are recommended best practices at the distribution layer:

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**QUESTION 68**
Which three are associated with the distribution layer within the campus design? (Choose three.)

A. access layer aggregation

B. route summarization

C. network trust boundary

D. next-hop redundancy

E. layer 2 switching

F. port security

G. broadcast suppression

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 69**
High availability is a key design consideration in the enterprise campus network. In a fully redundant topology, which is likely to provide faster IGP convergence during a failure?

A. redundant supervisors

B. redundant supervisors with Cisco Nonstop Forwarding (NSF) and Stateful Switchover (SSO)

C. single supervisors with tuned IGP timers

D. single supervisors

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 70**
Which two enterprise campus layers are combined in a medium-sized LAN? (Choose two.)

A. core

B. distribution

C. access

D. backbone

E. aggregation

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 71**
What is a characteristic of campus core designs?

A. fast transport

B. security

C. summarization

D. redistribution

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 72**
In the enterprise data center, which are the three main components? (Choose three.)

A. Network Infrastructure

B. Interactive services

C. Data Center Management

D. Internet services

E. WAN services

F. VPN and remote access

**Correct Answer:** ABC
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 73**
Which two common cable management strategies are used in high-density server deployments in the data center? (Choose two.)

A. top-of-rack
B. middle-of-rack
C. bottom-of-rack
D. beginning-of-row
E. middle-of-row
F. end-of-row

**Correct Answer:** AF
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 74**
Which servers that reside in the data center require direct links to all other enterprise modules?

A. network management servers
B. DHCP servers
C. Active Directory servers
D. IP SLA servers
E. web servers

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 75**
DRAG DROP

DRAG DROP

Drag the associated virtualization tool or solution on the left to the appropriate design requirement on the right.

Drag the associated virtualization tool or solution on the left to the appropriate design requirement on the right.

| VLANs and VSANs | virtual-machine visibility and policy control |
| Cisco Unified Computing System | simplified data center infrastructure and TCO |
| Cisco VN-Link technologies, including the Nexus 1000V Virtual Switch for VMware ESX | network, compute, and virtualization resources physically combined to deliver an optimized end-to-end virtualized environment |
| VSAN, virtual device contents, and unified fabric | physical networks and equipment separated into virtual entities |

A.
B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Drag the associated virtualization tool or solution on the left to the appropriate design requirement on the right.

| | |
|---|---|
| VLANs and VSANs | Cisco VN-Link technologies, including the Nexus 1000V Virtual Switch for VMware ESX |
| Cisco Unified Computing System | VSAN, virtual device contents, and unified fabric |
| Cisco VN-Link technologies, including the Nexus 1000V Virtual Switch for VMware ESX | Cisco Unified Computing System |
| VSAN, virtual device contents, and unified fabric | VLANs and VSANs |

Explanation:

| |
|---|
| Cisco VN-Link technologies, including the Nexus 1000V Virtual Switch for VMware ESX |
| VSAN, virtual device contents, and unified fabric |
| Cisco Unified Computing System |
| VLANs and VSANs |

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**QUESTION 76**
When designing using the Cisco Enterprise Architecture, in which Enterprise Campus layer does the Remote Access and VPN module establish its connection?

A. Building Access
B. Campus Core
C. Enterprise Branch
D. Enterprise Data Center

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 77**
DRAG DROP

Drag the WAN technology on the left to the most appropriate category on the right.

Drag the WAN technology on the left to the most appropriate category on the right.

| Frame-Relay | Leased |
| TDM | |
| SONET | Shared |
| MPLS | |

A.
B.
C.
D.

**Correct Answer:**

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**Section: (none)**
**Explanation**

**Explanation/Reference:**



Explanation:

Leased

SHARED

**WAN Link characteristics**

| | Use | Cost | Advantages | Examples |
|---|---|---|---|---|
| Private | WAN to connect distant LANs | Owner must buy and configure network Expensive to maintain | High security Transmission quality | Metro Ethernet using Dark Fiber |
| Leased | WAN to connect distant LANs | High cost Equipment is leased or private | Provider is responsible for maintenance Dedicated bandwidth | TDM, SONET |
| Shared | Shared circuit or packed switched WAN | Cost is fair Bandwidth is leased Equipment is leased or private | Provider is responsible for maintenance Shared network for multiple sites | MPLS or FR |

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**QUESTION 78**
Which three describe challenges that are faced when deploying an environment for teleworkers? (Choose three.)

A. supporting a mix of technically knowledgeable and nontechnical users
B. simplifying router installation and configuration
C. verifying available power at employee's house for necessary equipment
D. avoiding situations where employees might use nonstandard hardware or configurations
E. reducing daily commuting time to main office location
F. providing access to FTP servers located in main office location
G. implementing leased line connectivity between main office and employee's home location

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**QUESTION 79**
You need to connect to a remote branch office via an Internet connection. The remote office does not use Cisco equipment. This connection must be secure and must support OSPF. Which of the following can be used to transport data to the branch office?

A. GRE over IPsec

B. IPsec

C. GRE

D. IPsec VTI

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 80**
Which two are characteristics of a Lightweight Access Point? (Choose two.)

A. managed via a central wireless LAN controller

B. code upgrade performed via a TFTP server

C. CAPWAP tunnels

D. managed directly via CLI or web interface

E. facilitates the creation of its own WLANs and port mappings

**Correct Answer:** AC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 81**
Which one of these statements describes why, from a design perspective, a managed VPN approach for enterprise teleworkers is most effective?

A. A managed VPN solution uses a cost-effective, on-demand VPN tunnel back to the enterprise.

B. This solution supports all teleworkers who do not require voice or video.

C. This architecture provides centralized management where the enterprise can apply security policies and push configurations.

D. It provides complete flexibility for remote access through a wireless hotspot or a guest network at a hotel, in addition to a home office.

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 82**
What are three key areas that need to be considered when designing a remote data center? (Choose three.)

A. power diversity
B. active directory services
C. Cisco IOS versions
D. data storage
E. applications
F. user access
G. packet routing

**Correct Answer:** ADE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 83**
If a teleworker is required to access the branch office via a secure IPSEC VPN connection, which technology is recommended to provide the underlying transport?

A. ISDN
B. Metro Ethernet
C. Frame Relay
D. ADSL
E. ATM

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 84**
Which model of ISR is utilized for the teleworker design profile?

A.  Cisco 1900 Series
B.  Cisco 1800 Series
C.  Cisco 800 Series
D.  Cisco 500 Series

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 85**
When designing a WAN backup for voice and video applications, what three types of connections should be used? (Choose three.)

A.  Private WAN
B.  internet
C.  ISDN
D.  MPLS
E.  dial-up
F.  ATM
G.  DSL

**Correct Answer:** ACD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 86**
Which three options represents the components of the Teleworker Solution? (Choose three.)

A. Cisco Unified IP Phone
B. Cisco 880 Series Router
C. Aironet Office Extend Access Point
D. Catalyst 3560 Series Switch
E. Cisco 2900 Series Router
F. MPLS Layer 3 VPN
G. Leased lines

**Correct Answer:** ABE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 87**
Which three service categories are supported by an ISR? (Choose three.)

A. voice
B. security
C. data
D. Internet
E. storage
F. satellite

**Correct Answer:** ABC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 88**
When designing for a remote worker, which two are typical requirements? (Choose two.)

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A. best-effort interactive and low-volume traffic patterns

B. connections to the enterprise edge using Layer 2 WAN technologies

C. always-on connection with SLA from ISP

D. voice and IPsec VPN support

E. high-end security devices with stateful firewall filtering

F. dual or multihoming to ISPs

**Correct Answer:** CD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 89**
What is the maximum number of groups that is supported by GLBP?

A. 64

B. 256

C. 512

D. 1024

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 90**
DRAG DROP

DRAG DROP

Match the bandwidth usage optimization technique on the left with its definition on the right.

Match the bandwidth usage optimization technique on the left with its definition on the right.

| | |
|---|---|
| queuing | limits the number of frames transmitted before an acknowledgement is received |
| window size | reduces data size to save transmission time, optimizing the use of WAN bandwidth |
| traffic policing | allows network administrators to manage the varying demands generated by applications |
| data compression | discards packets or modifies some aspect of them (such as IP precedence) |

A.
B.
C.
D.

**Correct Answer:**
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Match the bandwidth usage optimization technique on the left with its definition on the right.

| queuing | | window size |
| window size | | data compression |
| traffic policing | | queuing |
| data compression | | traffic policing |

Explanation:

+ limits the number of frames transmitted before an acknowledgement is received: window size+ reduces data size to save transmission time, optimizing the use of WAN bandwidth: data compression+ allows network administrators to manage the varying demands generated by applications: queuing+ discards packets or modifies some aspect of them (such as IP precedence): traffic policing

**QUESTION 91**
Which two routing protocols usually converge most quickly? (Choose two.)

A. RIPv1
B. RIPv2
C. BGP

D. OSPF

E. EIGRP

**Correct Answer:** DE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 92**
Which two routing protocols operate over NBMA point-to-multipoint networks without the use of point-to-point sub interfaces? (Choose two.)

A. RIPv1

B. RIPv2

C. IS-IS

D. EIGRP

E. OSPF
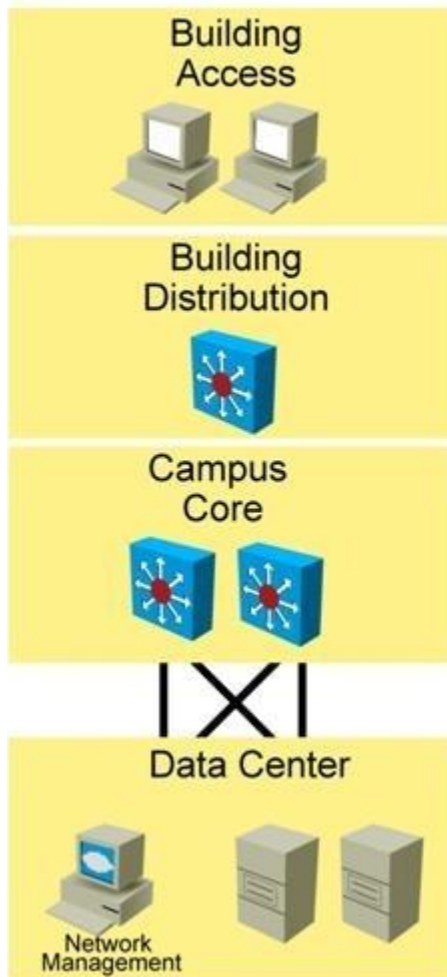
**Correct Answer:** DE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 93**
Refer to the exhibit.

## Enterprise Campus

**Building Access**

**Building Distribution**

**Campus Core**

**Data Center**

Network Management

## Enterprise Edge

**E-Commerce**

Database, Application, Web Servers

**Internet Connectivity**

Public Servers

**Remote Access and VPN**

**WAN and MAN Site-to-Site VPN**

## Remote

**Enterprise Branch**

**Enterprise Data Center**

Which three modules would typically utilize public IPv4 addressing? (Choose three.)

A.  Access
B.  Distribution
C.  Core
D.  Data Center

E.  E-Commerce
F.  Internet Connectivity
G.  Remote Access/VPN
H.  WAN/MAN
I.  Branch
J.  Branch Data Center

**Correct Answer:** EFG
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 94**
With respect to IPv6 addressing, from a design perspective, which of these statements is it important to keep in mind?

A.  IPv6 addressing provides convenience of anycast addressing without any configuration requirements.
B.  IPv6 does not use multicast addressing.
C.  An IPv6 router will not forward packets from one link to other links if the packet has either a link- local source or a link-local destination address.
D.  Dynamic address assignment requires DHCPv6.

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 95**
Which consideration is the most important for the network designer when considering IP routing?

A.  convergence
B.  scalability
C.  on-demand routing

D.  redistribution

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 96**
Your supervisor has asked you to deploy a routing protocol within the lab environment that will allow for unequal cost multipath routing. Which should you choose?

A.  EIGRP
B.  OSPF
C.  IS-IS
D.  RIP

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 97**
Which two methods are used to reduce the mesh links required between iBGP peers in the same AS? (Choose two.)

A.  community
B.  router reflectors
C.  local preference
D.  confederations
E.  atomic aggregate
F.  MED

**Correct Answer:** BD
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 98**
A company wants to use private IP addresses for all its internal hosts. Which technology can the company use to provide access to the Internet using a single public IP address?

A. static NAT
B. source routing
C. ACL
D. PAT

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 99**
At which layer of the network is route summarization recommended?

A. data link layer
B. core layer
C. distribution layer
D. access layer

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 100**
Which two link state routing protocols support IPv6 routing? (Choose two.)

A. BGP4+
B. OSPF
C. RIPng
D. EIGRP
E. IS-IS

**Correct Answer:** BE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 101**
Which is the North American RIR for IPv4 addresses?

A. RIPE
B. ARIN
C. IANA
D. IEEE
E. APNIC

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 102**
What is the most compact representation of the following IPv6 address?

2001:db8:0000:0000:cafe:0000:0000:1234

A. 2001:db8::cafe::1234
B. 2001:db8::cafe:0000:0000:1234
C. 2001:db8:0:0:cafe::1234

D. 2001:db8::cafe:0:1234

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 103**
Which type of area should you use in an enterprise OSPF deployment if you want to prevent propagation of type 5 LSAs but still allow the redistribution of external routes?

A. stub
B. totally stubby
C. backbone
D. NSSA
E. virtual link

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 104**
Which is usually used to connect to an upstream ISP?

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

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 105**
You are designing a network that requires a routing protocol that will use minimal network "Pass Any Exam. Any Time." - www.actualtests.com 101
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bandwidth. Which would satisfy this requirement?

A. RIPv2
B. RIPng
C. OSPF
D. ARP
E. EGP

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 106**
Which two statements best describe an OSPF deployment? (Choose two.)

A. ABR provides automatic classful network boundary summarization.
B. ABR requires manual configuration for classful network summarization.
C. External routes are propagated into the autonomous system from stub areas via ASBR.
D. External routes are propagated into the autonomous system from regular areas or NSSA via ASBR.
E. External routes are propagated into the autonomous system from regular areas or NSSA via ABR.

**Correct Answer:** BD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 107**
Which three items pertain to EIGRP? (Choose three.)

A. Can use multiple unequal paths.
B. Routes are redistributed as type 2 by default.
C. ASN and K values must match to form neighbors.
D. Uses multicast address 224.0.0.9 for updates.
E. Exchanges full routing table every 30 seconds.
F. Summary routes have AD of 90.
G. External routes have AD of 170.

**Correct Answer:** ACG
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 108**
A hierarchical design of the EIGRP domain facilitates which two of the following? (Choose two.)

A. route summarization
B. faster convergence
C. unequal cost load balancing
D. redistribution
E. virtual links

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 109**
Which three protocols support VLSM? (Choose three.)

A. RIPv2
B. RIPv1
C. EIGRP
D. OSPF
E. IGRP

**Correct Answer:** ACD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 110**
Which statement should the designer keep in mind when considering the advanced routing features?

A. One-way route redistribution avoids the requirement for static or default routes.
B. Redistribution, summarization, and filtering are most often applied between the campus core and enterprise edge.
C. Filtering only occurs on the routing domain boundary using redistribution.
D. Summarize routes at the core toward the distribution layer.
E. The hierarchical flexibility of IPv6 addressing avoids the requirement for routing traffic reduction using aggregation.

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 111**
When designing an EIGRP network, which two things should you take into consideration? (Choose two.)

A. ASN and K values must match.
B. The neighbor command can be used to enable unicast communication.
C. The neighbor diameter cannot exceed a 15-hops limit.
D. NSSA areas can be used to redistribute external routes.
E. Neighbor relationship can be established with non-Cisco routers.

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 112**
Which statement describes a unique advantage of EIGRP?

A.  It enables unequal-cost load balancing.
B.  It enables equal-cost load balancing.
C.  It enables source-based load balancing.
D.  It enables port-based load balancing.

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 113**
ACME Corporation is implementing dynamic routing on the LAN at its corporate headquarters. The interior gateway protocol that they select must support these requirements: multivendor environment, efficient subnetting, high scalability, and fast convergence. Which interior gateway protocol should they implement?

A.  EIGRP
B.  OSPF
C.  RIPng
D.  BGP

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 114**
Which routing protocol classification should you use when full topology information is needed?

A.  link-state
B.  distance vector
C.  stateful

D. path vector

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 115**
When you are designing a large IPv6 multivendor network, which IGP does Cisco recommend that you use?

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A. OSPFv3
B. EIGRP for IPv6
C. BGP
D. RIPng

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 116**
When designing the infrastructure protection portion for the enterprise edge, which solution would be the most appropriate solution to consider?

A. 802.1X
B. ACLs in the core layer
C. Cisco Security MARS
D. AAA

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 117**
Which two design approaches provide management of enterprise network devices? (Choose two.)

A. in-band
B. out-of-line
C. out-of-band
D. in-line

**Correct Answer:** AC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 118**
You are asked to design a new branch office that will need to support 25 users. These users will be using an ISP connection and will need to connect to the main office for network services. Which two Cisco devices are the most appropriate to fulfill all of these requirements? (Choose two.)

A. Cisco IPS
B. Cisco ISR G2
C. Cisco ASA
D. Cisco 2960
E. Cisco CRS-1
F. Cisco ACS

**Correct Answer:** BC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 119**
What are the three modes of unicast reverse path forwarding? (Choose three.)

A. strict
B. loose

C. VRF
D. global
E. PIM
F. local

**Correct Answer:** ABC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 120**
Which network access control technology is recommended to use with Layer 2 access layer switches?

A. 802.1q
B. 802.1x
C. 802.3af
D. 802.3q
E. 802.11n

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 121**
Refer to the list of requirements. Which IP telephony design model should you implement to fulfill these requirements?

A. centralized
B. distributed
C. clustered
D. decentralized

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 122**
Which is the equation used to derive a 64 Kbps bit rate?

A. 2 x 8 kHz x 4-bit code words

B. 8 kHz x 8-bit code words

C. 2 x 4-bit code words x 8 kHz

D. 2 x 4 kHz x 8-bit code words

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 123**
Which three statements are true regarding the virtual interface on a Cisco Wireless LAN Controller? (Choose three.)

A. supports mobility management

B. serves as a DHCP relay

C. used for all controller to AP communication

D. supports embedded Layer 3 security

E. default for out-of-band management

F. default for in-band management

G. provides connectivity to AAA servers

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 124**
A campus network needs end-to-end QoS tools to manage traffic and ensure voice quality. Which three types of QoS tools are needed? (Choose three.)

A. interface queuing and scheduling

B. congestion management

C. compression and fragmentation

D. bandwidth provisioning

E. traffic classification

F. buffer management

**Correct Answer:** ADE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 125**
Which technology enables WLCs to peer with each other to enable roaming support?

A. WAP profiles

B. roaming profiles

C. mobility groups

D. peer groups

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 126**
Which IP telephony component supports VoIP, PoE, and QoS?

A. client endpoints

B. voice-enabled infrastructure

C. Cisco Unified Communications Manager

D. Cisco Unified Contact Center

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 127**
Your supervisor wants you to recommend a management protocol that will allow you to track overall bandwidth utilization, utilization by traffic type, and utilization by source and destination.
Which is ideally suited for this function?

A. MRTG

B. NetFlow

C. RRD

D. SNMP

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 128**
Which factor would be most influential in choosing multimode fiber optic connections over UTP?

A. signal attenuation

B. required bandwidth

C. required distance

D. electromagnetic interference

E. cost

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 129**
Which WAN technology is a cost-effective method to deliver 100Mb of bandwidth to multiple branch offices?

A. DSL
B. DWDM
C. ISDN
D. Metro Ethernet

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 130**
Which subnet address and mask would you use for all Class D multicast addresses to be matched within an access list?

A. 224.0.0.0/20
B. 224.0.0.0/4
C. 239.0.0.0/24
D. 239.0.0.0/8
E. 225.0.0.0/8

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 131**
A company is implementing an Identity Management solution with these characteristics:

1) existing AAA Server

2) Cisco Catalyst switches

3) minimal added investments

Which Cisco Trust and Identity Management solution would you recommend?

A. NAC Appliance
B. Cisco IBNS
C. CSM
D. Cisco Security MARS

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 132**
When considering the three VoIP design models - single site, centralized multisite, and distributed multisite - which question below would help to eliminate one of the options?

A. Will the switches be required to provide inline power?
B. Will users need to make offsite calls, beyond the enterprise?
C. Will users require applications such as voice mail and interactive voice response?
D. Are there users whose only enterprise access is via a QoS-enabled WAN?

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 133**
Which two devices would you place in your DMZ to ensure enterprise edge security? (Choose two.)

A. IPS
B. NAC
C. ASA
D. ACS

E.  WCS

**Correct Answer:** AC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 134**
Which three are security services offered through Cisco Router Security? (Choose three.)

A.  Trust and Identity
B.  Integrated Threat Control
C.  Unified Wireless Network Security Solution
D.  Secure Connectivity
E.  Voice-Messaging Security
F.  Endpoint Security
G.  Virtual Security Gateway

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 135**
Which voice codec should you use in order to provide toll quality calls?

A.  711
B.  718
C.  722
D.  729

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 136**
Which three are features of LWAPP? (Choose three.)

A. firmware synchronization
B. local management of APs
C. configuration changes manually synced
D. encryption of control channel
E. configuration data only on the WLC
F. wireless control free operation
G. replaces 802.1x for authentication in wireless connections

**Correct Answer:** ADE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 137**
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Which Cisco device has the sole function at looking at threat detection and mitigation at the Enterprise edge?

A. Cisco IOS router
B. Cisco ASA
C. Cisco Catalyst FWSM
D. Cisco IPS

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 138**
Which three of these are layers in the Cisco SONA Architecture? (Choose three.)

A. Applications
B. Physical Infrastructure
C. Presentation
D. Integrated Transport
E. Core Common Services
F. Networked Infrastructure

**Correct Answer:** ABE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 139**
What business trend allows employees to use personal devices to access enterprise data and systems?

A. ISE
B. BYOD
C. SAN
D. IOE

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 140**
What three customer supported details identifies network requirements based on the PPDIOO design model? (Choose three.)

A. goals
B. budget
C. user needs
D. locations

E. policies

F. tasks

**Correct Answer:** ABC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 141**
An engineer receives a resource utilization alert on a router. What command should be used to investigate the issue?

A. show processes cpu

B. show memory

C. show running-config

D. show version

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 142**
What part of the network does a top-down network design focus on for solution development?

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A. presentation

B. hardware

C. session

D. application

E. data link

F. transport

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 143**
An engineer has configured a router to send level 7 messages to a syslog server. What severity level are these messages?

A. error
B. warning
C. debug
D. informational
E. notice

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 144**
A network engineer must implement a design where LAN clients are to connect to various access layer devices, while remaining on the same VLAN .
What type of design would support this requirement?

A. routed
B. switched
C. tunneled
D. virtual

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 145**
When evaluating network designs, what indicator demonstrates that the modular approach was followed?

A. ability to scale
B. follows best practices
C. redundant connectivity
D. easy to deploy

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 146**
A network engineer is following the Cisco enterprise architecture model. To which network layer would a branch office connect to using a private WAN?

A. Enterprise Campus
B. Enterprise Edge
C. SP Edge Premise
D. Remote Module

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 147**
A network engineer is following the three tiered Network Hierarchical Model. At which tier is route summarization implemented?

A. core
B. distribution
C. backbone
D. access

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 148**
A network engineer is using the Cisco enterprise architecture model. In what module do network management servers reside?

A. Enterprise Campus
B. Enterprise Edge
C. Remote Modules
D. SP Edge WAN/internet

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 149**
What three design requirements are key to designing a campus core? (Choose three.)

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A. low latency
B. access control
C. traffic filtering
D. high speed
E. redundant links
F. QoS tagging

**Correct Answer:** ADE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 150**
What type of device can be installed to increase a broadcast domain?

A. router

B. switch

C. IDS

D. IPS

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 151**
To what Layer 2 technology does VRF closely compare?

A. VSS

B. VPC

C. VLAN

D. VTP

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 152**
What network virtualization technology can be leveraged within the data center to reduce the number of physical devices?

A. VLANs

B. VPLS

C. VDC

D. VSS

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 153**
During the design of a new campus network, the customer requests the ability to route overlapping IP addresses. What technology can be leveraged to meet this request?

A. VRF
B. VLANs
C. VSS
D. VPC

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 154**
A network engineer is attempting to separate routing domains using a virtualization technology. What protocol can be configured to perform this task?

A. VLAN
B. VSAN
C. VRF
D. VPC

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 155**
What device virtualization technology allows for a single point of management and a centralized routing instance?

A. ACE
B. VSS
C. VDC
D. VM

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 156**
What two performance considerations must be taken into account when designing a remote worker access solution? (Choose two.)

A. simultaneous VPN connections
B. port density
C. throughput capacity
D. packet size
E. latency

**Correct Answer:** AC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 157**
In which network location should an external DNS server be placed?

A. campus data center
B. enterprise branch
C. internet
D. remote access

**Correct Answer:** C
**Section: (none)**
**Explanation**

**QUESTION 158**
What submodule is found within the Enterprise Edge module?

A.  enterprise WAN

B.  remote branch

C.  campus IPS

D.  building distribution

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 159**
A company requires a managed WAN solution that supports Layer 2 adjacency across remote offices for applications and services. What solution should be selected?

A.  DMVPN

B.  MPLS

C.  VPLS

D.  FR

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 160**
A circuit order has been placed for Gigabit Ethernet and is 80KM from the carrier equipment. What

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type of SFP will be required?

A.  TX

B. SX
C. ZX
D. LX

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 161**
A company has dark fiber between headquarters and its data center. It is presently configured as a 10GbE connection. Network utilization shows high utilization on the connection. What technology can be implemented to increase capacity without acquiring another circuit?

A. MPLS
B. DWDM
C. VPLS
D. DMVPN

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 162**
A secure WAN design requires dynamic routing and IP multicast. What two VPN protocols meet these requirements? (Choose two.)

A. Standard IPsec
B. P2P GRE over IPsec
C. DMVPN
D. AnyConnect
E. PPTP
F. Easy VPN
G. SSL/TLS

**Correct Answer:** BC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 163**
What branch design supports 100 to 1000 users and integrates ASA firewalls?

A. small
B. medium
C. large
D. extra large

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 164**
A network engineer is designing an enterprise managed VPN solution for a large number of remote offices that do not have on-site IT support and communicate only with the home office.
What type of VPN solution should be implemented?

A. VPLS
B. GRE
C. IPsec
D. EVPN
E. DMVPN
F. SSL client

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 165**
A remote office has a T1 WAN link to headquarters and a T1 Internet connection. The client requests WAN redundancy to headquarters with similar bandwidth. What two connection types satisfy this requirement? (Choose two.)

A. Secondary T1 WAN circuit
B. ISDN BRI
C. IPSec Tunnel over the Internet
D. DWDM I
E. POTS Line T1 WAN

**Correct Answer:** AC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 166**
What two features are advantages of adding a secondary WAN link at the enterprise edge? (Choose two.)

A. provides additional bandwidth and load balancing capabilities
B. acts as a backup link in event the primary link fails
C. reduces capital and operational costs
D. improves security and prevents against denial of service attacks
E. distributes traffic proactively based on link utilization

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 167**
What technology can secure data over an insecure medium and provide WAN redundancy in the event of a primary connection failure?

A. virtual private network

B. shadow PVC

C. dial-up ISDN

D. GRE Tunnel

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 168**
A client wants to consolidate applications that are currently housed at multiple sites to a remote data center. What two design requirements are unique to this scenario? (Choose two.)

A. bandwidth

B. security

C. latency

D. storage

E. availability

**Correct Answer:** AC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 169**
What IPv4 addressing technique allows for the division of addresses into subnets of different sizes?

A. VLSM

B. RIR

C. CIDR

D. NAT

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 170**
An organization is conducting an evaluation on the migration to IPv6 within the enterprise network

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and has requested clarification on recommended migration strategies. What three migration models would accomplish the organization's goal? (Choose three.)

A.  Dual Stack
B.  Service Block
C.  Top-Down
D.  Hybrid
E.  Tunneled
F.  Fork-Lift

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 171**
An application uses broadcast traffic to send data to IPv4 hosts. How can the application communicate using IPv6?

A.  Anycast
B.  Unicast
C.  Broadcast
D.  Multicast

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 172**
What significant advantage does EIGRP have over OSPF?

A. easy summarization
B. shorter convergence times
C. single area operation
D. low processor utilization

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 173**
What routing protocol requires full mesh between internal peers in an enterprise network?

A. OSPF
B. EIGRP
C. BGP
D. ISIS
E. RIP

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 174**
What three considerations should be taken into account when selecting a routing protocol? (Choose three.)

A. classful routing
B. scalability
C. default route origination
D. multi vendor support
E. link load balancing

F. hop count

**Correct Answer:** BDE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 175**
By default, how does EIGRP's metric differ from OSPF?

A. hops
B. cost
C. bandwidth
D. delay

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 176**
What characteristic separates link state routing protocols from a distance vector?

A. creates a topological view of the entire network
B. path calculation utilizes a more granular metric
C. does not scale well for large networks
D. constantly shares link state updates throughout the topology

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 177**
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A company must deploy an IGP routing protocol on an Enterprise Network. Where should route summarization be implemented?

A. distribution
B. core
C. access
D. backbone

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 178**
What routing configuration can prevent routing loops between IGPs?

A. route filters
B. route reflectors
C. auto summarization
D. virtual links

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 179**
What is the first step when creating a network security policy?

A. define what should be protected
B. investigate how likely an attack is to occur
C. implement measures to protect assets
D. hire a security firm to perform penetration tests

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 180**
A customer requests a filtering design based on the need to scan all internet traffic, including remote workers. What solution meets these requirements?

A. Cisco Cloud Web Security
B. Cisco Network Admission Control
C. Cisco Identity Services Engine
D. Cisco Adaptive Security Appliance

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 181**
A customer wants to support a BYOD environment. What two products allow for posture assessment? (Choose two.)

A. ACS
B. NAC
C. ASA
D. ISE
E. WAAS
F. IDS

**Correct Answer:** BD
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 182**
What two CoS values are used by voice traffic? (Choose two.)

A. COS1
B. COS2
C. COS3
D. COS4
E. COS5

**Correct Answer:** CE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 183**
A client wants to deploy a video conferencing platform in a multisite WAN environment. What two design considerations need to be evaluated? (Choose two.)

A. CODECs supported by the video units
B. buffer sizes on the routers
C. POE capabilities of the switches
D. number of current calls
E. number of hops between sites

**Correct Answer:** AD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 184**
What wireless authentication option requires a Public Key Infrastructure?

A. EAP-TLS
B. PEAP
C. LEAP
D. EAP-FAST

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 185**
What two access point modes support the transmission of user traffic over a LWAPP/CAPWAP tunnel? (Choose two.)

A. local
B. H-REAP
C. rogue detector
D. monitor
E. sniffer
F. standalone

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 186**
What is the primary advantage of implementing a wireless LAN controller in a wireless LAN design?

A. roaming between APs
B. RADIUS user authentication
C. radio resource management
D. accelerated data transfer

**Correct Answer:** C

**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 187**
A wireless LAN client is sending traffic to the wired LAN client. What path will the packet take to reach the destination endpoint in a lightweight wireless deployment?

A. switch > controller > ap > client
B. controller > ap > switch > client
C. ap > controller > switch > client
D. switch > ap > controller > client

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 188**
What Cisco product is designed to improve the performance of Windows file and exchange services in remote data centers?

A. Application Control Engine
B. Wide Area Application Services
C. Cisco Application Policy Infrastructure Controller
D. Cisco Prime Network Services Controller

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 189**
An organization needs a WAN Transport technology that meets these criteria:

· has a low initial cost

· provides low-to-medium BW

· has medium-to-high latency and jitter

Which technology should the organization use?

A.  DSL
B.  x.25
C.  ISDN
D.  wireless
E.  analog modem

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 190**
Which two of these are scalability benefits of designing a network that utilizes VPNs? (Choose two.)

A.  extends the network to remote users
B.  allows networks to be set up and restructured quickly
C.  reduces dial infrastructure expenditures
D.  reduces the number of physical connections
E.  simplifies the underlying structure of a customer WAN
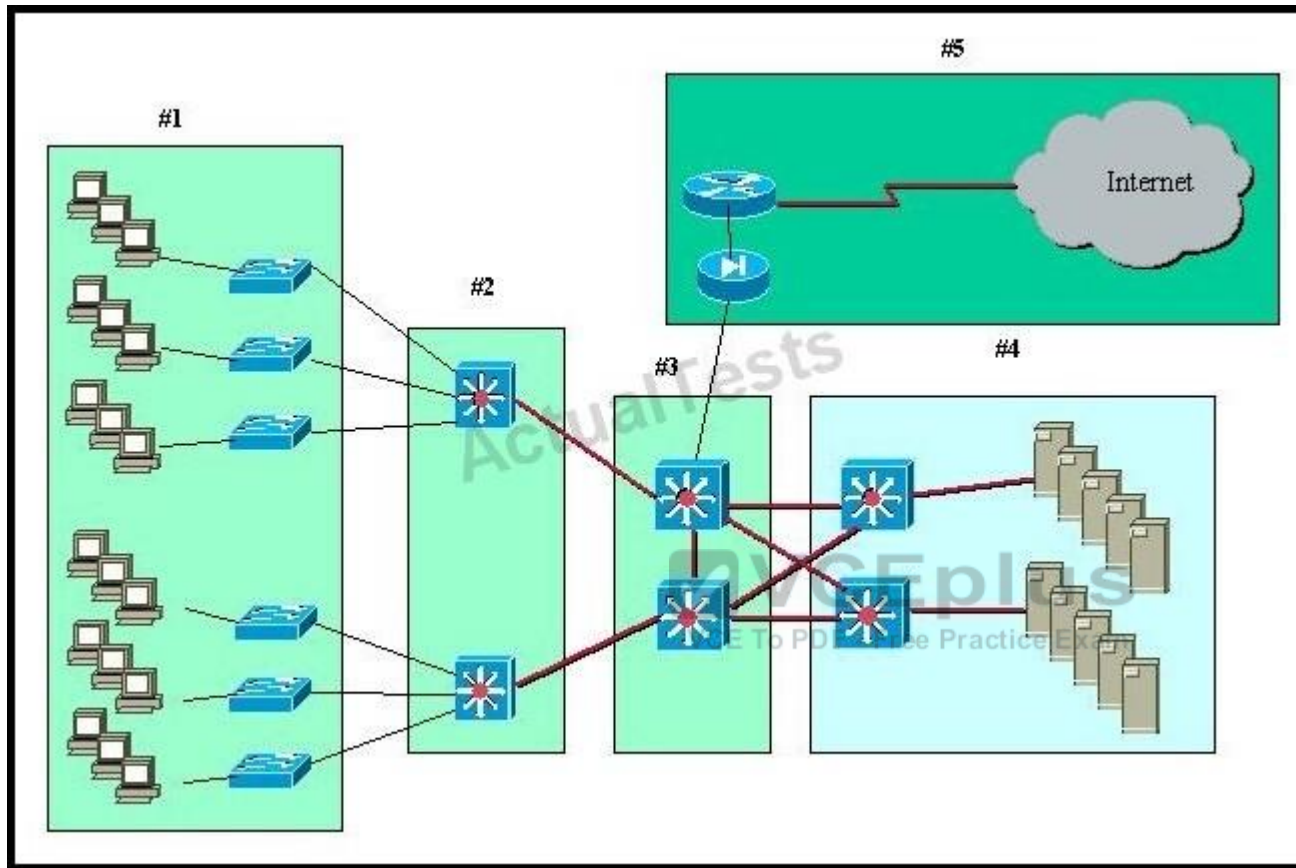
**Correct Answer:** DE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 191**

Refer to the exhibit.



A standard Layer 2 campus network design is pictured. Which numbered box represents the core layer?

A. #1
B. #2
C. #3
D. #4
E. #5

**Correct Answer:** C
**Section: (none)**

**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 192**
Which two design criteria require VLANs in a proposed solution? (Choose two.)

A.  video streaming on the LAN
B.  security between departments
C.  the segmenting of collision domains
D.  the segmenting of broadcast domains
E.  the use of multivendor equipment
F.  a limited corporate budget

**Correct Answer:** BD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 193**
Which three sources does a network designer use to collect information for characterizing an existing network? (Choose three.)

A.  staff input
B.  visual inventory
C.  network audit
D.  traffic analysis
E.  server statistics

**Correct Answer:** ACD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 194**
Which Cisco security mechanism has the attributes listed below?

· It is a sensor appliance

· It searches for potential attacks by capturing and analyzing traffic

· It is a "purpose-built device"

· It is installed passively

· It introduces no delay or overhead

A. IKE
B. PIX
C. HIPS
D. NIDS
E. HMAC

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 195**
Which three pieces of information should be documented for each step in a design implementation plan? (Choose three.)

A. step description
B. design document references
C. easy guidelines in case of failure
D. estimated implementation time
E. simple implementation guidelines
F. estimated rollback time in case of failure

**Correct Answer:** ABD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 196**
Which Cisco device management feature is most suited to metering network traffic and providing data for billing network usage?

A. BGP
B. Cisco Discovery Protocol
C. QoS
D. RMON
E. NetFlow

**Correct Answer:** E
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 197**
What are three valid methods of gathering information about an existing data network? (Choose three.)

A. Use organizational input.
B. Perform a traffic analysis.
C. Analyze the user-mapping of a running application.
D. Perform a packet-level audit to verify carrier service guarantees.
E. Perform a network audit to gather more detail about the network.
F. Use reports that analyze the metrics of the customer's existing network.

**Correct Answer:** ABE
**Section: (none)**
**Explanation**

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Explanation:

**QUESTION 198**
What is the benefit of VLSM?

A.  reduces configuration complexity by using the same subnet mask length
B.  reduces the routing table size by using automatic route summarization
C.  reduces the routing table size by using manual route summarization
D.  allows the subnet mask and classful routing updates to be advertised
E.  secures the hosts on a subnet by using RFC 1918 addresses
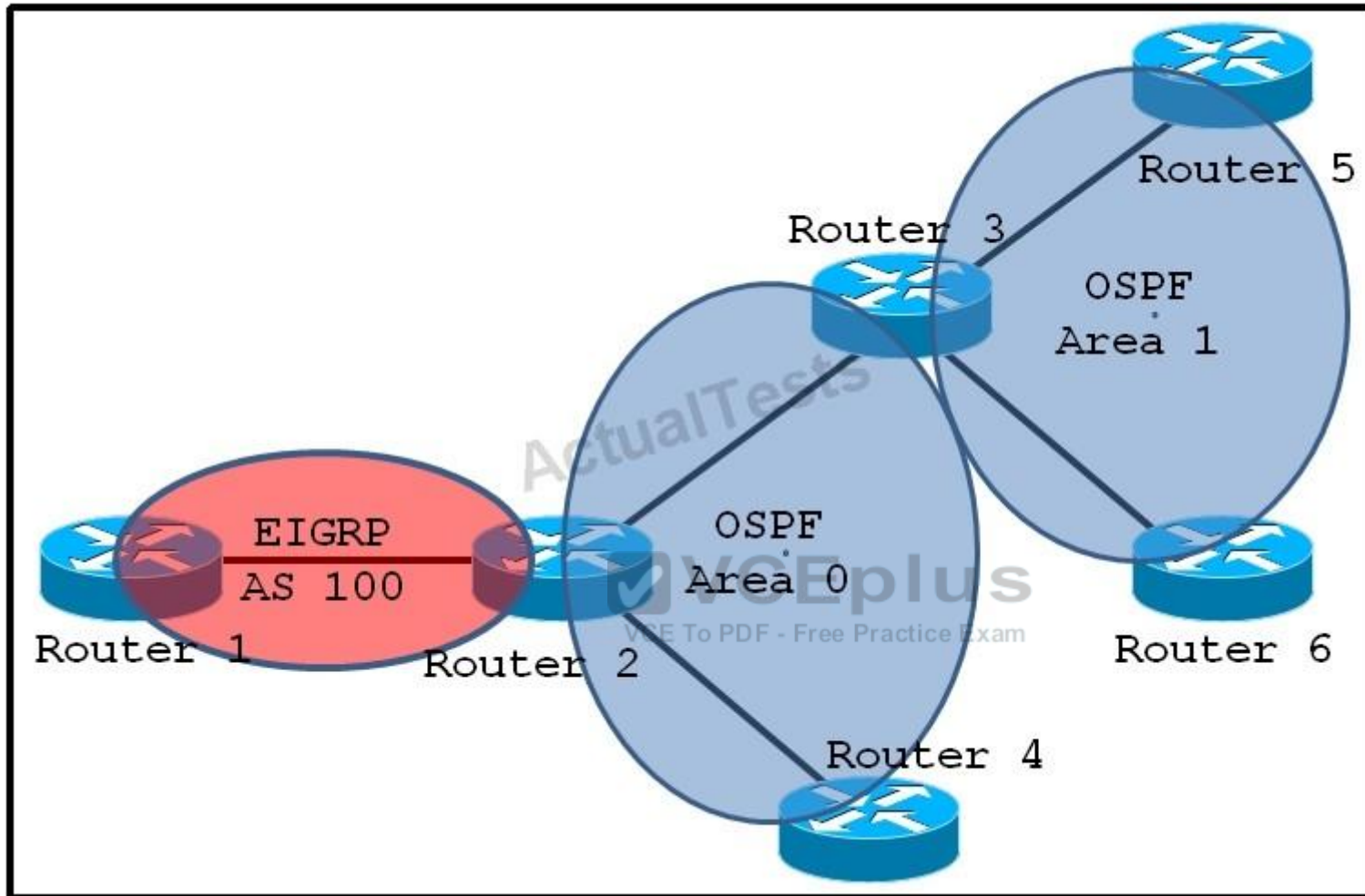
**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 199**
Refer to the exhibit. On which router should you configure redistribution?

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A. Router 1
B. Router 2
C. Router 3
D. Router 4
E. Router 5

**Correct Answer:** B
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 200**
Which three Cisco technologies can you use to detect and mitigate threats? (Choose three.)

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A. NetFlow
B. FWSM
C. ISE
D. VRRP
E. sFLOW

**Correct Answer:** ABC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 201**
Which technology allows remote networks to be connected via site-to-site tunnels?

A. IPsec VPN
B. AnyConnect VPN
C. SSL VPN
D. EasyConnect VPN

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 202**

Which RFC defines the IPv6 standard?

A. RFC 1918
B. RFC 2338
C. RFC 2460
D. RFC 2740

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 203**
What is the maximum RIPv2 hop count for a reachable route?

A. 13
B. 14
C. 15
D. 16

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 204**
Which Cisco Wireless LAN Controller interface is used for out-of-band management?

A. service port
B. management port
C. controller port
D. virtual port

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 205**
In which operation mode does the AP act as a dedicated sensor for location-based and intrusion detection services?

A.  monitor mode
B.  promiscuous mode
C.  discovery mode
D.  sniffer mode

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 206**
Which HSRP parameters must match, to ensure proper functionality?

A.  group parameters
B.  priority parameters
C.  preempt parameters
D.  tracking parameters

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 207**
What three primary sources of information are needed to perform a network audit? (Choose three.)

A.  existing documentation
B.  new documentation

C. existing network management software

D. new network management tools

E. management personnel

F. technical personnel

**Correct Answer:** ACD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 208**
Which three layers comprise the traditional hierarchical model? (Choose three.)

A. core layer

B. distribution layer

C. access layer

D. aggregation layer

E. network layer

F. Internet layer

**Correct Answer:** ABC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 209**
Which first-hop redundancy protocol dynamically distributes client traffic between multiple routers?

A. HSRP

B. VRRP

C. GLBP

D. IGRP

**Correct Answer:** C
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 210**
Which three options are characteristics of data center evolution? (Choose three.)

A. consolidation
B. virtualization
C. automation
D. standardization
E. optimization
F. modulation

**Correct Answer:** ABC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 211**
Which option is a benefit of the modular approach to network design?

A. higher availability
B. repeatable scalability
C. increased security
D. improved resiliency

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 212**
Which statement describes the methodology that supports the Cisco Enterprise Architecture models?

A. It divides the network into functional network modules.
B. It divides the network into role-based network modules.
C. It divides the network into regional network modules.
D. It divides the network into operational network modules.

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 213**
Which design is the recommended geometric design for routed topologies?

A. linear
B. triangular
C. rectangular
D. circular

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 214**
Which statement describes an advantage of the Layer 2 access model over the Layer 3 access model in the data center?

A. It enables NIC teaming.
B. It removes STP dependency.
C. It increases scalability.
D. It decreases convergence.

**Correct Answer:** A
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 215**
Router A has three feasible successors to the 192.168.1.0/24 network, which are listed here:

Option 1 has a metric of 8123228.

Option 2 has a metric of 2195467.

Option 3 has a metric of 8803823.

The variance 4 command was issued on Router A. How many active entries does Router A have in its routing table for the 192.168.1.0/24 network?

A. 0
B. 1
C. 2
D. 3

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 216**
Which two mechanisms are used by distance vector protocols to prevent routing loops? (Choose two.)

A. split horizon
B. route summarization
C. route poisoning
D. tuned timers

**Correct Answer:** AC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 217**
Which interior routing protocol has the most preferable administrative distance by default?

A.  RIP
B.  OSPF
C.  EIGRP
D.  BGP
E.  IS-IS

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 218**
What two SAN protocols will allow a customer to utilize 10GbE for SAN access? (Choose two.)

A.  ISCSI
B.  FCoE
C.  SATA
D.  Fiber Channel
E.  AoE

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 219**
Application servers require load balancing and security services. Where in the data center network should these services be provisioned?

A.  core

B. aggregation

C. Layer 3 access

D. distribution

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 220**
A data center is reaching its power and cooling capacity. What two virtualization technologies can address the problem by directly reducing the number of physical devices? (Choose two.)

A. virtual switching systems

B. virtual device contexts

C. virtual servers

D. virtual routing and forwarding

E. virtual port channels

F. virtual LANs

**Correct Answer:** BC
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 221**
A dynamically routed private line and a statically routed IPsec tunnel connect two offices. What routing configuration prefers the IPsec tunnel only in the event of a private line failure?

A. floating static entry

B. EIGRP variance

C. bandwidth metric

D. OSPF maximum paths

**Correct Answer:** A
**Section: (none)**

**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 222**
When designing a new enterprise campus network, what topology should be used for maximum scalability?

A. flat
B. three-layer
C. star
D. partial mesh
E. full mesh

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 223**
A spanning tree topology can be simplified by deploying what Cisco IOS technology in the distribution block?

A. VDC
B. vPC
C. Rapid PVST+
D. VSS
E. Flex Links

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 224**
An organization is deciding what routing protocol to use throughout their network. What must be considered if routing is to be performed at the access

layer?

A. reduced scalability of the network when introducing a large number of switch blocks into the routing table
B. centralized management of access control lists at the distribution layer
C. reliability when implementing routing over spanning-tree at the access layer
D. performance differences between core, distribution and access layer equipment

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 225**
A routing protocol neighbor relationship has been established between two routers across the public Internet using GRE. What technology can be used to encrypt this communication channel?

A. access lists
B. IP security
C. context based access
D. intrusion prevention system

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 226**
Your company uses OSPF for internal routing. The company will be connected to VendorA via a single dedicated link and to VendorB via redundant dedicated links. Both vendors also use OSPF for internal routing.

Which of the following deployments describes the best intra-domain routing practice in this situation?

A. Connect your company to both VendorA and VendorB using existing OSPF.
B. Redistribute the routes on each link between your company and the vendors to a shared EIGRP routing protocol.
C. Use IBGP to reach VendorA and EBGP to reach VendorB.
D. Use static routes to reach VendorA and EBGP to reach VendorB.

E.  Use static routes to reach both VendorA and VendorB.

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 227**
You design a network with the following network addresses:

192.168.168.0

192.168.169.0

192.168.170.0

192.168.171.0

192.168.172.0

192.168.173.0

192.168.174.0

192.168.175.0

Which route address is the best summary of these network addresses?

A.  192.168.0.0/24
B.  192.168.171.128/3
C.  192.168.168.0/21
D.  192.168.175.0/3
E.  192.168.0.0/16

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 228**
A network engineer must collect application-level information passing through a router. What two tools can provide this information? (Choose two.)

A. NBAR
B. CiscoWorks
C. SNMP collector
D. NetFlow collector
E. Syslog

**Correct Answer:** AD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 229**
Which option is an advantage of the bottom-up design model?

A. focuses on the needs of user communities
B. includes a thorough analysis of customer requirements
C. facilitates a quick response to client requests
D. produces a "big-picture" of the desired outcome

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 230**
A large company requests a hierarchical design model. What tier should be free of physically connected hosts?

A. core
B. access
C. aggregation
D. distribution

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 231**
Which two options are benefits of using a modular network architecture? (Choose two.)

A. facilitates troubleshooting
B. accurate monitoring
C. consistent documentation
D. increased flexibility
E. reduced cabling requirements

**Correct Answer:** AD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 232**
An organization is redesigning a 3-tier hierarchical network into a collapsed core. What design issue is a primary concern per Cisco best practices?

A. services delineation
B. port density
C. feature availability
D. resource utilization

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 233**
A network engineer is using the traditional switched hierarchical design. The client has asked to increase uplink utilization from the access layer to the distribution. How can the engineer attain this new requirement without adding new physical connections?

A. enable spanning-tree portfast
B. enable VSS at the distribution layer
C. increase the MTU size on the uplink interfaces
D. ensure the root bridge priority is equal on both distribution switches

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 234**
What three design best practices are key functions of the distribution layer? (Choose three.)

A. fault domain isolation
B. admission control
C. access switch aggregation
D. QoS tagging
E. address summarization
F. end user and application isolation

**Correct Answer:** ACE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 235**
What design requirement is necessary for campus network access layer switching?

A. high cost per port
B. high availability
C. high scalability
D. high performance

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 236**
A network engineer requires that an OSPF ASBR must only flood external LSAs only within its own area. What OSPF area type should be configured?

A. Backbone Area
B. Totally Stub Area
C. Not So Stubby Area
D. Stub Area

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

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**QUESTION 237**
A network engineer is tasked to upgrade and expand a large existing production network. From the IOS CLI, what two protocols can be used to build a topology map of the existing network? (Choose two.)

A. SNMP
B. IP SLA
C. ICMP Echo
D. LLDP
E. Traceroute

**Correct Answer:** DE

**Explanation/Reference:**
Explanation:

**QUESTION 238**
A network engineer has finished designing and implementing a new network. What two protocols would they use to gain insight into the network and determine the components that require optimization? (Choose two.)

A. CDP
B. NetFlow
C. ICMP Echo
D. NMAP
E. SNMP

**Correct Answer:** BE
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 239**
Which option is an example of physical device virtualization?

A. VSS
B. VPN
C. VRF
D. VLAN

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 240**
In which two places is redundancy recommended in an enterprise campus network design? (Choose two.)

A.  building distribution
B.  campus core
C.  building access
D.  e-commerce
E.  Internet connectivity

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 241**
What are two purposes of route redundancy? (Choose two.)

A.  minimize the effect of link failures
B.  minimize the effect of internetworking device failures
C.  minimize the convergence time of STP
D.  reduce router CPU utilization
E.  save network costs
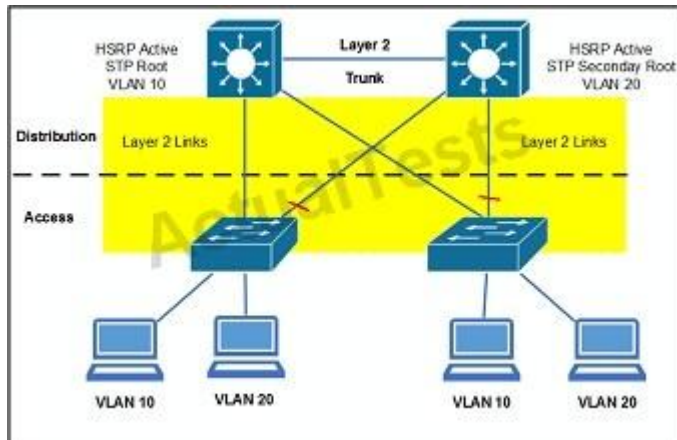
**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 242**
Refer to the exhibit.

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The red lines refer to STP blocked ports. What happens if the HSRP active moves to the right distribution, and the STP root remains on the left distribution?

A. The STP root becomes the gateway.
B. The interdistribution link is used for transit.
C. The HSRP standby becomes the gateway.
D. The interaccess link is used for transit.
E. Host traffic is unable to reach the HSRP active.

**Correct Answer:** B
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 243**
Which three QoS levels should VoIP clients be set to on a Cisco WLC? (Choose three.)

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A. Platinum
B. Bronze
C. Gold
D. Silver

E.  Premier

F.  Critical

**Correct Answer:** ACD
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 244**
What is the optimal device and location to fulfill these requirements?

A.  IPS inline outside of the firewall

B.  IPS inline inside the firewall

C.  Cisco IOS IPS on the border router

D.  passive IPS connected to a SPAN port outside of the firewall

E.  passive IPS connected to a SPAN port inside the firewall
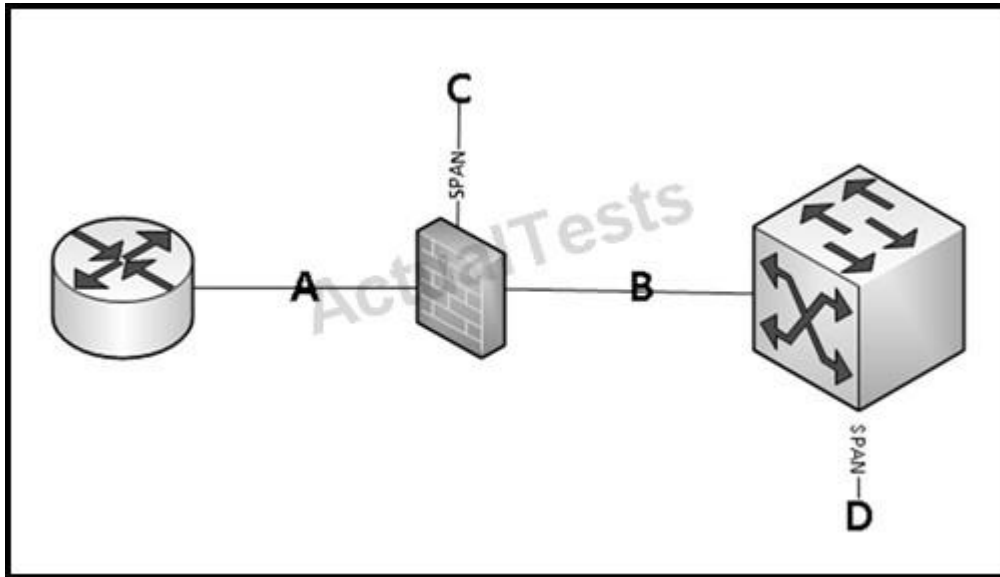
**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 245**
Refer to the exhibit.

Which location is best for placing a monitor-only IPS that has visibility into the most data center traffic?

A.  (A) inline before the firewall
B.  (B) inline after the firewall
C.  (C) passive off the firewall
D.  (D) passive off the internal switch

**Correct Answer:** D
**Section: (none)**
**Explanation**

**Explanation/Reference:**
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Explanation:

**QUESTION 246**
For a VLAN that requires 70 hosts, which subnet is the most efficient?

A.  10.0.0.1/8
B.  172.31.17.0/26

C. 192.168.1.0/25
D. 192.168.15.0/24

**Correct Answer:** C
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 247**
If two routing protocols have the same route and prefix, which effect do they have on the routing table?

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A. Only the route with the lowest administrative distance is added.
B. Only the route with the highest administrative distance is added.
C. Both routes are added.
D. Neither route is added, and a loop is formed.

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 248**
Which benefit is an advantage of route summarization?

A. It reduces the size of the routing table.
B. It causes routes to be updated more frequently.
C. It lowers the cost metric.
D. It enables neighbor discovery.

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**

Explanation:

**QUESTION 249**
Which two states are RSTP port states? (Choose two.)

A. discarding

B. learning

C. blocking

D. listening

E. disabled

**Correct Answer:** AB
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation:

**QUESTION 250**
When is the Cisco FlexConnect design model recommended?

A. when remote-site APs are centrally managed

B. when each remote site has its own wireless controller

C. when each remote site runs VSS

D. when the remote sites use WAN optimization

**Correct Answer:** A
**Section: (none)**
**Explanation**

**Explanation/Reference:**
Explanation: