Cisco Certified Design Expert v3.0

1. Company XYZ is planning to deploy primary and secondary (disaster recovery) data center sites. Each of these sites will have redundant SAN fabrics and data protection is expected between the data center sites. The sites are 100 miles (160 km) apart and target RPO/RTO are 3 hrs and 24 hrs, respectively. Which two considerations must Company XYZ bear in mind when deploying replication in their scenario? (Choose two.)

- [ ] A. Target RPO/RTO requirements cannot be met due to the one-way delay introduced by the distance between sites.
- [ ] B. VSANs must be extended from the primary to the secondary site to improve performance and availability.
- [ ] C. VSANs must be routed between sites to isolate fault domains and increase overall availability.
- [ ] D. Synchronous data replication must be used to meet the business requirements.
- [ ] E. Asynchronous data replication should be used in this scenario to avoid performance impact in the primary site.

Answer(s): B D

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2. An architect receives a business requirement from a CTO that states the RTO and RPO for a new system should be as close as possible to zero. Which replication method and data center technology should be used?

A. synchronous replication over geographically dispersed dual data centers via MPLS

B. synchronous replication over dual data centers via Metro Ethernet

C. asynchronous replication over geographically dispersed dual data centers via CWDM

D. asynchronous replication over dual data centers via DWDM

Answer(s): A

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3. What are two primary design constraints when a robust infrastructure solution is created? (Choose two.)

- ☐ A. component availability
- ☐ B. monitoring capabilities
- ☐ C. project time frame
- ☐ D. staff experience
- ☐ E. total cost

Answer(s): C E

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4. Which network management framework can be used to develop a network architecture that contains business requirements analysis, gap analysis, and network diagrams as artifacts to be used for design and implementation later?

- A. FCAPS
- B. Cobit
- C. TOGAF
- D. ITIL

Answer(s): C

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5. Which two types of planning approaches are used to develop business-driven network designs and to facilitate the design decisions? (Choose two.)

- ☐ A. strategic planning approach

- [ ] B. business optimization approach
- [ ] C. tactical planning approach
- [ ] D. modular approach
- [ ] E. cost optimization approach

Answer(s): A C

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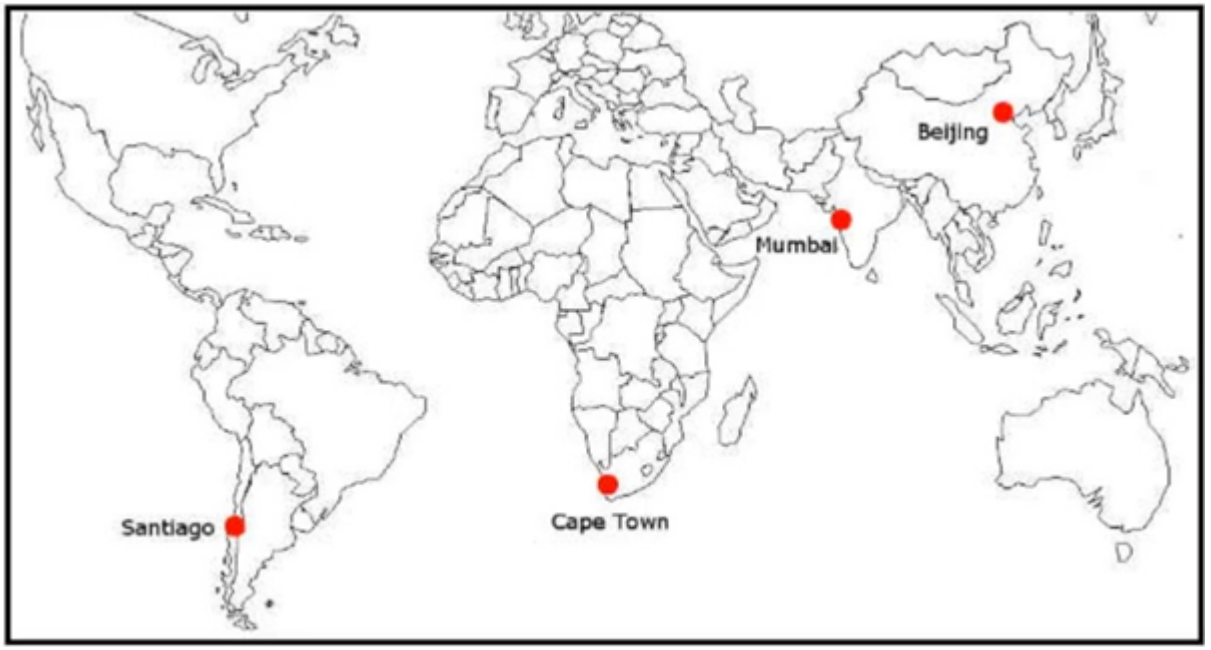
6. Refer to the exhibit.



ACME Mining has four data centers in Santiago, Cape Town, Mumbai, and Beijing, full-mesh connected via a 400 Mb/s EVP-LAN. They want to deploy a new mission-critical application with these requirements:

* cluster heartbeat 2 MB/s continuous (250 KB/s)
* cluster heartbeat one-way maximum latency 100 ms

These are the current ping tests results between the four data centers:

	Santiago	Cape Town	Mumbai	Beijing
Santiago	-	280 ms	378 ms	409 ms
Cape Town	280 ms	-	185 ms	445 ms
Mumbai	383 ms	176 ms	-	443 ms
Beijing	430 ms	448 ms	442 ms	-

Which hosting data center pair can host the new application?

A. Mumbai and Beijing

B. Cape Town and Mumbai

C. Cape Town and Beijing

D. Santiago and Mumbai

E. Santiago and Beijing

F. Santiago and Cape Town

Answer(s): B

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7. Refer to the table.

CONNECTIVITY	CAPEX	OPEX ANNUAL	INSTALLATION FEE	TERM
DWDM over dark fiber	$250,000	$100,000	$30,000	12 months
CWDM over dark fiber	$150,000	$100,000	$25,000	18 months
MPLS wires only	$50,000	$80,000	$5,000	24 months
Metro Ethernet	$45,000	$100,000	$5,000	36 months

A customer investigates connectivity options for a DCI between two production data centers to aid a large-scale migration project. The solution must provide a single 10G connection between locations and be able to run its own varying QoS profiles without service provider interaction based on the migration stages. All connectivity methods are at 10 Gbps. Which transport technology costs the least if the connectivity is required for just one year?

A. DWDM over dark fiber

B. Metro Ethernet

C. MPLS wires only

D. CWDM over dark fiber

Answer(s): D

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8. Refer to the table.

CONNECTIVITY	CAPEX	OPEX ANNUAL	INSTALLATION FEE	TERM
DWDM over dark fiber	$250,000	$100,000	$30,000	60 months
CWDM over dark fiber	$150,000	$100,000	$25,000	60 months
MPLS	$50,000	$150,000	$75,000	12 months
Metro Ethernet	$45,000	$125,000	$5,000	36 months

A customer investigates connectivity options for a DCI between two production data centers. The solution must provide dual 10G connections between locations with no single points of failure for Day 1 operations. It must also include an option to scale for up to 20 resilient connections in the second year to accommodate isolated SAN over IP and isolated dedicated replication IP circuits. All connectivity methods are duplex 10 Gbps. Which transport technology costs the least over two years in this scenario?

A. CWDM

B. DWDM

C. MPLS

D. Metro Ethernet

Answer(s): B

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9. What are two examples of business goals to be considered when a network design is built? (Choose two.)

- [ ] A. integrate endpoint posture
- [ ] B. ensure faster obsolescence
- [ ] C. minimize operational costs
- [ ] D. reduce complexity
- [ ] E. standardize resiliency

Answer(s): C D

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10. Refer to the table.

CONNECTIVITY	CAPEX	OPEX ANNUAL	INSTALLATION FEE	TERM
DWDM over dark fiber	$200,000	$100,000	$30,000	12 months
CWDM over dark fiber	$150,000	$100,000	$25,000	18 months
MPLS wires only	$50,000	$180,000	$5,000	12 months
Metro Ethernet	$65,000	$100,000	$5,000	36 months

A customer investigates connectivity options for a DCI between two production data centers to aid a large-scale migration project. The migration is estimated to take 20 months to complete but might extend an additional 10 months if issues arise. All connectivity options meet the requirements to migrate workloads. Which transport technology provides the best ROI based on cost and flexibility?

A. DWDM over dark fiber

B. MPLS

C. CWDM over dark fiber

D. Metro Ethernet

Answer(s): C

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11. SDWAN networks capitalize the usage of broadband Internet links over traditional MPLS links to offer more cost benefits to enterprise customers. However, due to the insecure nature of the public Internet, it is mandatory to use encryption of traffic between any two SDWAN edge devices installed behind NAT gateways.
Which overlay method can provide optimal transport over unreliable underlay networks that are behind NAT gateways?

A. DTLS

B. TLS

C. IPsec

D. GRE

Answer(s): C

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12. Company XYZ wants to use the FCAPS ISO standard for network management design. The focus of the design should be to monitor and keep track of any performance issues by continuously collecting and analyzing statistical information to monitor, correct, and optimize any reduced responsiveness across the network. Which layer accomplishes this design requirement?

A. security management

B. performance management

C. accounting management

D. fault management

Answer(s): B

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13. Company XYZ has implemented policy-based routing in their network. Which potential problem must be kept in mind about network reconvergence and PBR?

A. It can limit network scalability.

B. It can create microloops during reconvergence.

C. It reduces convergence time.

D. It increases convergence time.

Answer(s): B

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14. SD-WAN can be used to provide secure connectivity to remote offices, branch offices, campus networks, data centers, and the cloud over any type of IP-based underlay transport network. Which two statements describe SD-WAN solutions? (Choose two.)

- [ ] A. Control and data forwarding planes are kept separate.
- [ ] B. Solutions allow for variations of commodity and specialized switching hardware.
- [ ] C. SD-WAN networks are inherently protected against slow performance.
- [ ] D. Solutions include centralized orchestration, control, and zero-touch provisioning.
- [ ] E. Improved operational efficiencies result in cost savings.

Answer(s): A D

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15. Company XYZ is in the process of identifying which transport mechanism(s) to use as their WAN technology. Their main two requirements are:
-a technology that could offer DPI, SLA, secure tunnels, privacy, QoS, scalability, reliability, and ease of management
-a technology that is cost-effective
Which WAN technology(ies) should be included in the design of company XYZ?

A. Both technologies should be used. Each should be used to back up the other one; where the primary links are MPLS, the Internet should be used as a backup link with IPsec (and vice versa).

B. MPLS meets all these requirements and it is more reliable than using the Internet. It is widely used with clearly defined best practices and an industry standard.

C. Software-defined WAN should be the preferred choice because it complements both technologies, covers all the required features, and it is the most cost- effective solution.

D. Internet should be the preferred option because it is cost effective and supports BFD, IP SLA, and IPsec for secure transport over the public Internet.

Answer(s): C

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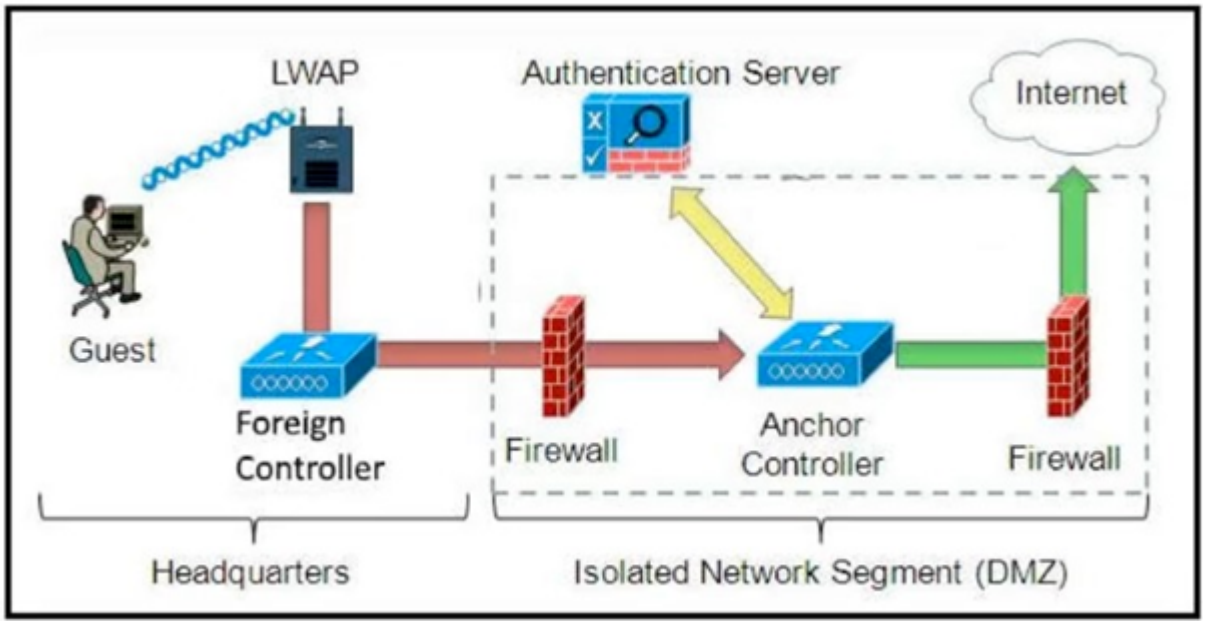
16. Refer to the diagram. Which solution must be used to send traffic from the foreign wireless LAN controller to the anchor wireless LAN controller?



A. Send packets without encapsulation to the anchor controller over the routed network.

B. Encapsulate packets into an EoIP tunnel and send them to the anchor controller.

C. Send packets from the foreign controller to the anchor controller via Layer 3 MPLS VPN or VRF-Lite.

D. Send packets from the foreign controller to the anchor controller via IPinIP or IPsec tunnel.

Answer(s): B

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17. The Company XYZ network is experiencing attacks against their router. Which type of Control Plane Protection must be used on the router to protect all control plane IP traffic that is destined directly for one of the router interfaces?

A. Control Plane Protection transit subinterface

B. Control Plane Protection host subinterface

C. Control Plane Protection CEF-exception subinterface

D. Control Plane Protection main interface

Answer(s): B

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18. An architect designs a multi-controller network architecture with these requirements:
-Achieve fast failover to control traffic when controllers fail.
-Yield a short distance and high resiliency in the connection between the switches and the controller.
-Reduce connectivity loss and enable smart recovery to improve the SDN survivability.
-Improve connectivity by adding path diversity and capacity awareness for controllers.
Which control plane component of the multi-controller must be built to meet the requirements?

A. control node reliability

B. control path reliability

C. controller state consistency

D. controller clustering

Answer(s): B

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19. Which two control plane policer designs must be considered to achieve high availability? (Choose two.)

- [ ] A. Control plane policers are really needed only on externally facing devices.
- [ ] B. Control plane policers can cause the network management systems to create false alarms.
- [ ] C. Control plane policers require that adequate protocols overhead are factored in to allow protocol convergence.
- [ ] D. Control plane policers must be processed before a forwarding decision is made.
- [ ] E. Control plane policers are enforced in hardware to protect the software path, but they are hardware platform-dependent in terms of classification ability.

Answer(s): D E

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20. A small organization of 20 employees is looking to deliver a network design service for modernizing customer networks to support advanced solutions.
-Project scope and weekly progress should be visualized by the management.

-Always consider feedback and make changes accordingly during the project.
-Should consider flexibility to change scope at the point of time.
Which project methodology meets the requirements and have the least impact on the outcome?

A. LEAN

B. Six-Sigma

C. Scrum

D. Kanban

Answer(s): C
