Cisco Certified Design Expert (CCDE)



Exam Name: Cisco Certified Design Expert (CCDE)

Exam Code: 400-007 Exam Price: 450 USD Duration: 120 minutes Number of Questions: 102

Passing Score: 825

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QUESTION 1

In an OSPF network with routers connected together with Ethernet cabling, which topology typically takes the longest to converge?

- A. partial mesh
- B. full mesh
- C. ring
- D. squared
- E. triangulated

Correct Answer: B

QUESTION 2

Company XYZ is designing the network for IPv6 security and they have these design requirements:

- A switch or router must deny access to traffic from sources with addresses that are correct, but are topologically incorrect
- Devices must block Neighbor Discovery Protocol resolution for destination addresses that are not found in the binding table.

Which two IPv4 security features are recommended for this company? (Choose two)

- A. IPv6 DHCP Guard
- B. IPv6 Source Guard
- C. IPv6 Destination Guard
- D. IPv6 Prefix Guard
- E. IPv6 RA Guard

Correct Answer: CD

QUESTION 3

Which two impacts of adding the IP event dampening feature to a network design are true? (Choose two.)

- A. It protects against routing loops.
- B. It switches traffic immediately after a link failure.
- C. It speeds up link failure detection.
- D. It reduces the utilization of system processing resources.
- E. It improves overall network stability.

Correct Answer: DE

QUESTION 4

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. Scrum
- B. LEAN
- C. Kanban
- D. Six-Sigma

Correct Answer: C

QUESTION 5

Which technology is an open-source infrastructure automation tool that automates repetitive tasks for users who work in networks such as cloud provisioning and intraservice orchestration?

- A. Ansible
- B. Contrail
- C. Java
- D. Jinja2

Correct Answer: A

QUESTION 6

Company XYZ asks for design recommendations for Layer 2 redundancy. The company wants to prioritize fast convergence and resiliency elements in the design. Which two technologies are recommended? (Choose two.)

- A. Design MLAG/MC-LAG into the network wherever possible.
- B. Configure DHCP snooping on the switches.
- C. Use root guard.
- D. Use BPDU guard.
- E. Use UniDirectional Link Detection.

Correct Answer: AE

QUESTION 7

A European government passport agency considers upgrading its IT systems to increase performance and workload flexibility in response to constantly changing requirements. The budget manager wants to reduce capital expenses and IT staff and must adopt the lowest-cost technology. Which technology choice is suitable?

- A. on premises
- B. private cloud
- C. public cloud
- D. hybrid cloud

Correct Answer: B

QUESTION 8

Company XYZ needs advice in redesigning their legacy Layer 2 infrastructure. Which technology should be included in the design to minimize or avoid convergence delays due to STP or FHRP and provide a loop-free topology?

- A. Use switch clustering in the access layer.
- B. Use switch clustering in the core/distribution layer.
- C. Use spanning-tree PortFast.
- D. Use BFD.

Correct Answer: B

QUESTION 9

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

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

Correct Answer: AD

QUESTION 10

Company XYZ Is running a redundant private WAN network using OSPF as the underlay protocol.

The current design accommodates for redundancy. In the network, but it Is taking over 30 seconds for the network to reconverge upon failure. Which technique can be Implemented In the design to detect such a failure in a subsecond?

A. STP

- B. fate sharing
- C. OSPF LFA
- D. BFD
- E. flex links

Correct Answer: D

QUESTION 11

Company XYZ network runs IPv4 and IPv6 and they want to Introduce a multidomain, multicast- based network.

The new design should use a flavor of PIM that forwards traffic using SPT.

Which technology meets this requirement?

- A. PIM-DM
- B. PIM-SM
- C. PIM-SSM
- D. BIDIR-PIM

Correct Answer: C

QUESTION 12

Which three elements help network designers to construct secure systems that protect information and resources (such as devices, communication, and data) from unauthorized access, modification, inspection, or destruction? (Choose three.)

- A. confidential
- B. serviceability
- C. reliability
- D. availability
- E. integrity
- F. scalability

Correct Answer: ADE

QUESTION 13

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 host subinterface
- B. Control Plane Protection main interface
- C. Control Plane Protection transit subinterface

D. Control Plane Protection CEF-exception subinterface

Correct Answer: A

QUESTION 14

What is the most important operational driver in building a resilient and secure modular network design?

- A. Dependencies on hardware or software that is difficult to scale
- B. Minimize app downtime
- C. Reduce the frequency of failures requiring human intervention
- D. Increase time spent on developing new features

Correct Answer: B

QUESTION 15

Which BGP feature provides fast convergence?

- A. BGP PIC
- B. BGP-EVPN
- C. BGP FlowSpec
- D. BGP-LS

Correct Answer: A

QUESTION 16

An enterprise requires MPLS connected branches to access cloud-based Microsoft 365 services over an SD-WAN solution. Internet access Is available only at dual regional hub sites that are connected to the MPLS network.

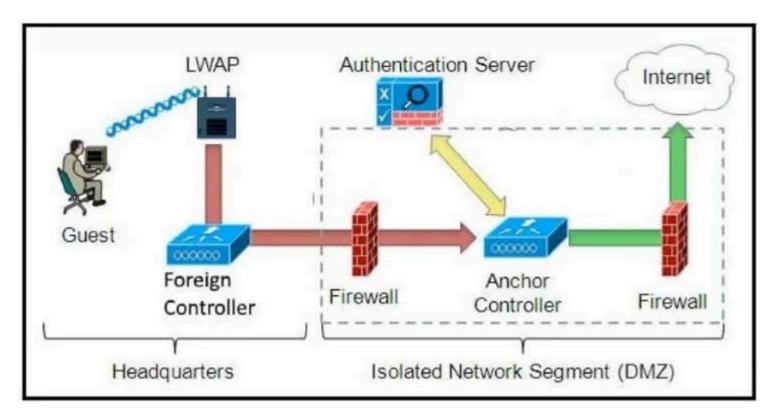
Which connectivity method provides an optimum access method to the cloud- based services If one ISP suffers loss or latency?

- A. Cloud onRamp gateway site
- B. Cloud on Ramp SWG
- C. Cloud onRamp
- D. Cloud onRamp SaaS

Correct Answer: D

QUESTION 17

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

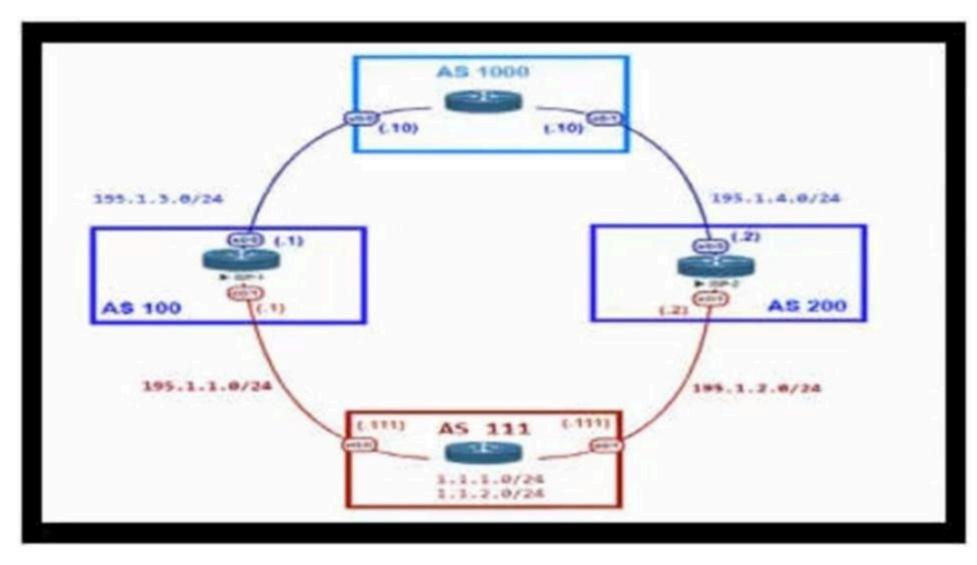


- A. Send packets from the foreign controller to the anchor controller via Layer 3 MPLS VPN or VRF-Lite
- B. Send packets without encapsulation to the anchor controller over the routed network.
- C. Encapsulate packets into an EoIP tunnel and send them to the anchor controller.
- D. Send packets from the foreign controller to the anchor controller via IPinIP or IPsec tunnel.

Correct Answer: C

QUESTION 18

Refer to the exhibit. An engineer is designing the network for a multihomed customer running in AS 111 does not have any other Ass connected to it. Which technology is more comprehensive to use in the design to make sure that the AS is not being used as a transit AS?



- A. Configure the AS-set attribute to allow only routes from AS 111 to be propagated to the neighbor ASs.
- B. Use the local preference attribute to configure your AS as a non-transit" AS.
- C. include an AS path access list to send routes to the neighboring ASs that only have AS 111 in the AS path field.
- $\label{eq:decomposition} \textbf{D. Include a prefix list to only receive routes from neighboring ASs.}$

Correct Answer: C

QUESTION 19

Organizations that embrace Zero Trust initiatives ranging from business policies to technology infrastructure can reap business and security benefits. Which two domains should be covered under Zero Trust initiatives? (Choose two)

- A. workload
- B. work domain
- C. workplace
- D. workgroup
- E. workspace

Correct Answer: AC

QUESTION 20

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

- A. cost optimization approach
- B. strategic planning approach
- C. modular approach
- D. tactical planning approach
- E. business optimization approach

Correct Answer: BD

QUESTION 21

An enterprise that runs numerous proprietary applications has major issues with its on-premises server estate hardware, to the point where business-critical functions are compromised. The enterprise accelerates plans to migrate services to the cloud. Which cloud service should be used if the enterprise wants to avoid hardware issues yet have control of its applications and operating system?

- A. SaaS
- B. PaaS
- C. laaS
- D. hybrid cloud

Correct Answer: C

QUESTION 22

Which two features control multicast traffic in a VLAN environment? (Choose two)

- A. IGMP snooping
- B. MLD snooping
- C. RGMP
- D. PIM snooping
- E. pruning

Correct Answer: AB

QUESTION 23

Company XYZ wants to secure the data plane of their network. Which two technologies can be included in the security design? (Choose two)

- A. DAI
- B. IP Source Guard
- C. BEEP
- D. CPPr
- E. MPP

Correct Answer: AB

QUESTION 24

Company XYZ has a new network based on IPv6. Some of the subnets that they are planning to use will be confidential and need an addressing scheme that confines them to the local campus network.

Which type of IPv6 addresses can be used for these networks in the IPv6 addressing design?

- A. local addresses
- B. private addresses
- C. link-local addresses
- D. unique local addresses

Correct Answer: D

QUESTION 25

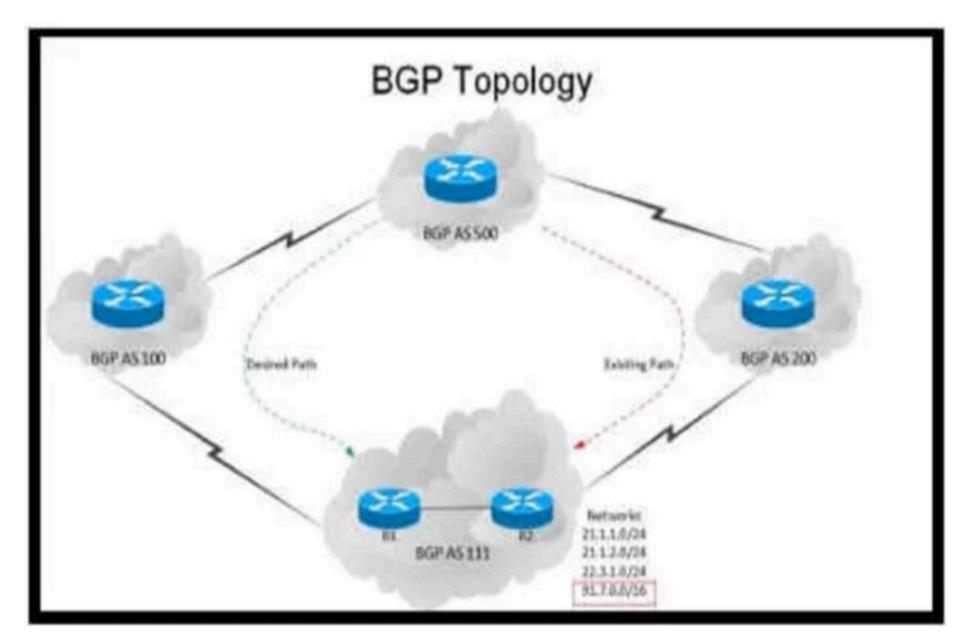
An architect receives a business requirement from a CTO that states the RTO and RPO for a new system should be as close as possible to zero. Which replication method and data center technology should be used?

- A. asynchronous replication over dual data centers via DWDM
- B. synchronous replication over geographically dispersed dual data centers via MPLS
- C. synchronous replication over dual data centers via Metro Ethernet
- D. asynchronous replication over geographically dispersed dual data centers via CWDM

Correct Answer: C

QUESTION 26

Refer to the exhibit. An engineer has been asked to redesign the traffic flow toward AS 111 coming from AS 500. Traffic destined to AS 111 network 91.7.0.0/16 should come in via AS 100. while traffic destined to all other networks in AS 111 should continue to use the existing path. Which BGP attributes are best suited to control this inbound traffic coming from BGP AS 500 Into the 91.7.0.0/16 network?



A. Prepend AS path for the 91.7.0.0/16 network and set it for neighbor in AS 200.

- B. Use extended community for the 91.7.0.0/16 network, not advertising it to the bi-lateral peer.
- C. Use local preference on R1 for the networks that AS 500 advertises to AS 111.
- D. Set higher MED for neighbor in AS 100 to influence incoming traffic for the 91. 7.0.0/16 network.

Correct Answer: A

QUESTION 27

A European national bank considers migrating its on-premises systems to a private cloud offering in a non-European location to significantly reduce IT costs.

What is a primary factor prior to migration?

- A. data governance
- B. additional latency
- C. security
- D. cloud connectivity

Correct Answer: A

QUESTION 28

Company XYZ has 30 sites running a legacy private WAN architecture that connects to the Internet via multiple high- speed connections. The company is now redesigning their network and must comply with these design requirements:

- Use a private WAN strategy that allows the sites to connect to each other directly and caters for future expansion.
- Use the Internet as the underlay for the private WAN. Securely transfer the corporate data over the private WAN.

Which two technologies should be Incorporated into the design of this network? (Choose two.)

- A. S-VTI
- B. IPsec
- C. DMVPN
- D. GET VPN
- E. PPTP

Correct Answer: BC

QUESTION 29

Company XYZ wants to improve the security design of their network to include protection from reconnaissance and DoS attacks on their sub interfaces destined toward next hop routers. Which technology can be used to prevent these types of attacks?

A. MPP

- B. CPPr
- C. CoPP
- D. DPP

Correct Answer: B

QUESTION 30

According to the CIA triad principles for network security design, which principle should be priority for a Zero Trust network?

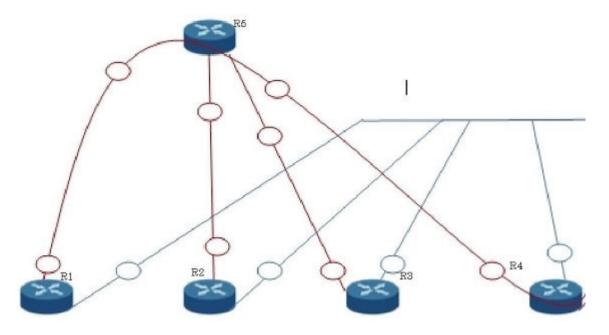
- A. requirement for data-in-motion encryption and 2FA authentication
- B. requirement for data-at-rest encryption foe user identification within the VPN termination hardware
- C. categorization of systems, data, and enterprise BYOD assets that are connected to network zones based on individual privacy needs
- D. ensuring that authorized users have high-availability system access from defined zones to defined systems or zones

Correct Answer: A

QUESTION 31

Refer to the exhibit. OSPF is running as the IGP to provide reachability to all AS100 networks. R3 and R4 are the current ABRs at the boundary of OSPF Area0 and Areal. Now BGP must be deployed within AS 100 because it will be receiving. Internet routes from its eBGP peers (the service provider) connected to R1 and R2.

What is an optimal solution for this deployment to configure BGP relationships and redistribute BGP learned routes into OSPF?



- A. R5 should be configured as a route reflector for R1, R2, R3 and R4. BGP routes must be redistributed at R1 and R2 into OSPF.
- B. Configuration should be set up with R1 and R2, and R3 in one sub AS, with and R4 in another, and redistribution at R1 and R2.
- C. A full mesh should be deployed between all the routers with mutual redistribution to take place at R1 and R2.
- D. R1, R2, R3 and R4 must be set up with a neighbor relationship with R5 only must not be a route reflector.

Correct Answer: C

QUESTION 32

Company ABC wants to minimize the risk of users plugging unauthorized switches and hubs into the network. Which two features can be used on the LAN access ports to support this design requirement? (Choose two.)

- A. Loop Guard
- B. PortFast
- C. DTF
- D. Root Guard
- E. BPDU Guard

Correct Answer: BE

QUESTION 33

You are tasked with the design of a high available network. Which two features provide fail closed environments? (Choose two.)

- A. EIGRP
- B. RPVST+
- C. MST
- D. L2MP

Correct Answer: AB

QUESTION 34

Which two characteristics apply to firewall transparent mode operations in a firewall solution design? (Choose two.)

- A. Changes in the existing IP addressing and subnets are required
- B. The firewall can participate actively on spanning tree.
- C. Multicast traffic can traverse the firewall.
- D. OSPF adjacencies can be established through the firewall
- E. The firewall acts like a router hop in the network.

Correct Answer: CD

QUESTION 35

Your company wants to deploy a new data center infrastructure. Based on the requirements you have chosen VXLAN as encapsulation technology. The customer is concerned about miss-configuration of Layer 2 devices and DC wide outages caused by Layer 2 loops.

What do you answer?

- A. VXLAN offers native loop avoidance mechanism
- B. Storm Control should be enabled on all ports
- C. VPC+ could prevent L2 loop on access ports
- D. BPDU Guard should be enabled on all VTEP access ports

Correct Answer: D

QUESTION 36

Which two statements describe the usage of the IS-IS overload bit technique? (Choose two)

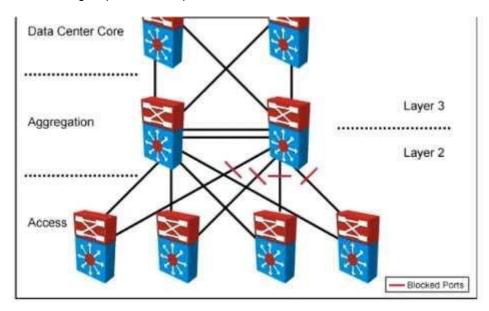
- A. If overload-bit is set on a Level 2 intermediate system, the other Level 2 intermediate systems in the topology will stop using the overloaded IS to forward Level 2 traffic However, the intermediate system can still forward Level 1 traffic
- B. It can be set in intermediate systems (IS-IS routers) to prioritize control plane CSNP packets.

- C. It can be used to automatically synchronize the link-state database between Level 1 intermediate systems
- D. It can be set in intermediate systems (IS-IS routers) to avoid traffic black holes until routing protocols are fully converged after a reload operation.
- E. It can be set in intermediate systems (IS-IS routers) to attract transit traffic from other intermediate systems

Correct Answer: AD

QUESTION 37

Refer to the exhibit. Your company designed a network to allow server VLANs to span all access switches in a data center. In the design, Layer 3 VLAN interfaces and HSRP are configured on the aggregation switches. Which two features improve STP stability within the network design? (Choose two.)

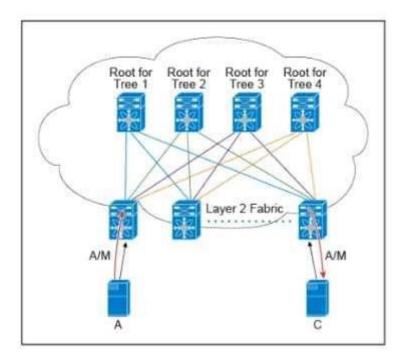


- A. BPDU guard on access ports
- B. BPDU guard on the aggregation switch downlinks toward access switches
- C. root guard on the aggregation switch downlinks toward access switches
- D. root guard on access ports
- E. edge port on access ports
- F. access switch pairs explicitly determined to be root and backup root bridges

Correct Answer: AE

QUESTION 38

Refer to the exhibit. There are multiple trees in the Cisco FabricPath. All switches in the Layer 2 fabric share the same view of each tree. Which two concepts describe how the multicast traffic is load-balanced across this topology? (Choose two)



- A. A specific (S.G) traffic is not load-balanced
- B. All trees are utilized at the same level of the traffic rate
- C. Every leaf node assigns the specific (S.G) to the same tree.
- D. A specific (S.G) multicast traffic is load-balanced across all trees due to better link utilization efficiency.
- E. The multicast traffic is generally load-balanced across all trees

Correct Answer: BD

QUESTION 39

Which mechanism provides Layer 2 fault isolation between data centers?

- A. fabric path
- B. OTL
- C. advanced VPLS

D. LISP

E. TRILL

Correct Answer: D

QUESTION 40

You have been tasked with designing a data center interconnect to provide business continuity. You want to encrypt the traffic over the DCI using IEEE 802.1AE MACsec to prevent the deployment of any firewall or IPS.

Which two interconnect technologies support MACsec? (Choose two.)

A. EoMPLS

B. MPLS Layer 3 VPN

C. DMVPN

D. GET VPN

E. KVPLS

Correct Answer: AE

QUESTION 41

While reviewing an existing network design, you are discussing the characteristics of different STP versions.

Which protocol minimizes unicast flooding during a Topology Change Notification in a Layer 2 switched network with many VLANs?

A. PVRSTP

B. MST

C. STP

D. PVSTP+

Correct Answer: A

QUESTION 42

A network design includes a long signaling delay in notifying the Layer 3 control plane that an interface has failed. Which two of these actions would reduce that delay? (Choose two.)

A. Increase network stability.

- B. Reduce the time for the network to reconverge.
- C. Increase the notification of interface flaps.
- D. Enable lower data link layer recovery systems to have an opportunity to restore the interface

Correct Answer: BD

QUESTION 43

Which two possible drawbacks should you consider when introducing Network Functions Virtualization in a network design? (Choose two)

- A. Bandwidth utilization increases
- B. Traffic flows are suboptimal
- C. High-end routers are required to support NFV
- D. OpenFlow must be supported in the network
- E. An SDN orchestration layer is required to support NFV

Correct Answer: CE

QUESTION 44

You are designing an Out of Band Cisco Network Admission Control. Layer 3 Real-IP Gateway deployment for a customer. Which VLAN must be trunked back to the Clean Access Server from the access switch?

- A. authentication VLAN
- B. user VLAN
- C. untrusted VLAN
- D. management VLAN

Correct Answer: D

QUESTION 45

A service provider hires you to design its new managed CE offering to meet these requirements:

- The CEs cannot run a routing protocol with the PE
- Provide the ability for equal or unequal ingress load balancing in dual-homed CE scenarios.
- Provide support for IPv6 customer routes
- Scale up to 250.000 CE devices per customer.
- Provide low operational management to scale customer growth.
- Utilize low-end (inexpensive) routing platforms for CE functionality.

Which tunneling technology do you recommend?

- A. FlexVPN
- B. point-to-point GRE
- C. DMVPN
- D. LISP

Correct Answer: D

QUESTION 46

Which design principal improves network resiliency?

- A. Added load-balancing
- B. Added redundancy
- C. Added confidentiality
- D. Added reliability

Correct Answer: B

QUESTION 47

When designing a WAN that will be carrying real-time traffic, what are two important reasons to consider serialization delay? (Choose two)

- A. Serialization delays are invariable because they depend only on the line rate of the interface
- B. Serialization delays are variable because they depend on the line rate of the interface and on the type of the packet being serialized.
- C. Serialization delay is the time required to transmit the packet on the physical media.
- D. Serialization delays are variable because they depend only on the size of the packet being serialized
- E. Serialization delay depends not only on the line rate of the interface but also on the size of the packet

Correct Answer: BD

QUESTION 48

Which two aspects are considered when designing a dual hub dual DMVPN cloud topology? (Choose two)

- A. will only work with single-tier headend architecture
- B. hub sites must connect to both DMVPN clouds
- C. recommended for high availability
- D. spoke-to-spoke traffic will transit the hub unless spokes exchange dynamic routing directly
- E. requires all sites to have dual Internet connections

Correct Answer: AC

QUESTION 49

A green data center is being deployed and a design requirement is to be able to readily scale server virtualization. Which IETF standard technology can provide this requirement?

A. data center bridging

- B. unified fabric
- C. Transparent Interconnection of Lots of Links
- D. fabric path

Correct Answer: C

QUESTION 50

Which two foundational aspects of IoT are still evolving and being worked on by the industry at large? (Choose two)

- A. WiFi protocols
- B. Regulatory domains
- C. Low energy Bluetooth sensors
- D. loT consortia
- E. Standards

Correct Answer: AC

QUESTION 51

Your network operations team is deploying Access Control Lists (ACLs) across your Internet gateways. They wish to place an ACL inbound on the Internet gateway interface facing the core network (the "trusted" interface).

Which IP address would the ACL need for traffic sourced from the inside interface, to match the source address of the traffic?

- A. inside global
- B. outside global
- C. inside local
- D. outside local

Correct Answer: C

QUESTION 52

You are designing a network for a branch office. In order to improve convergence time, you are required to use the BFD feature. Which four routing protocols can you use to facilitate this? (Choose four.)

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

Correct Answer: ABDE

QUESTION 53

A senior network designer suggests that you should improve network convergence times by reducing BGP timers between your CE router and the PE router of the service provider. Which two factors should you consider to adjust the timer values? (Choose two.)

- A. service provider agreement to support tuned timers
- B. manual updates to the peer groups
- C. service provider scheduling of changes to the PE
- D. number of routes on the CE router
- E. number of VRFs on the PE router

Correct Answer: AD

QUESTION 54

You were tasked to enhance the security of a network with these characteristics:

- A pool of servers is accessed by numerous data centers and remote sites
- The servers are accessed via a cluster of firewalls
- The firewalls are configured properly and are not dropping traffic
- The firewalls occasionally cause asymmetric routing of traffic within the server data center.

Which technology should you recommend to enhance security by limiting traffic that could originate from a hacker compromising a workstation and redirecting flows at the servers?

- A. Poison certain subnets by adding static routes to Null0 on the core switches connected to the pool of servers.
- B. Deploy uRPF strict mode.
- C. Limit sources of traffic that exit the server-facing interface of the firewall cluster with ACLs.
- D. Deploy uRPF loose mode

Correct Answer: C

QUESTION 55

A network architect must redesign a service provider edge, where multiservice and multitenant PEs are currently present. Which design feature should be minimized in the new design to achieve reliability?

- A. bridging
- B. fate sharing
- C. redundancy

D. unicast overlay routing

Correct Answer: B

QUESTION 56

You are designing a network running both IPv4 and IPv6 to deploy QoS. Which consideration is correct about the QoS for IPv4 and IPv6?

- A. IPv4 and IPv6 traffic types can use use queuing mechanisms such as LLQ, PQ and CQ.
- B. IPv6 packet classification is only available with process switching, whereas IPv4 packet classification is available with both process switching and CEF.
- C. IPv6 and IB/4 traffic types can use a single QoS policy to match both protocols
- D. Different congestion management mechanisms need to be used for IPv4 and IPv6 traffic types

Correct Answer: C

QUESTION 57

A company plans to use BFD between its routers to detect a connectivity problem inside the switched network.

An IPS is transparently installed between the switches. Which packets shold the IPS forward for BFD to work under all circumstances?

- A. Fragmented packet with the do-not-fragment bit set
- B. IP packets with broadcast IP source addresses
- C. IP packets with the multicast IP source address
- D. IP packet with the multicast IP destination address
- E. IP packets with identical source and destination IP addresses
- F. IP packets with the destination IP address 0.0.0.0.

Correct Answer: E

QUESTION 58

A Tier-3 Service Provider is evolving into a Tier-2 Service Provider due to the amount of Enterprise business it is receiving. The network engineers are re-evaluating their IP/MPLS design considerations in order to support duplicate/overlapping IP addressing from their Enterprise customers within each Layer3 VPN.

Which concept would need to be reviewed to ensure stability in their network?

- A. Assigning unique Route Distinguishers
- B. Assigning unique Route Target ID'S
- C. Assigning unique IP address space for the Enterprise NAT/Firewalls
- D. Assigning unique VRF ID's to each L3VPN

Correct Answer: A

QUESTION 59

Which three Cisco products are used in conjunction with Red Hat to provide an NFVi solution? (Choose three.)

- A. Cisco Prime Service Catalog
- B. Cisco Open Virtual Switch
- C. Cisco Nexus switches
- D. Cisco UCS
- E. Cisco Open Container Platform
- F. Cisco Virtual Network Function

Correct Answer: CDF

QUESTION 60

What are two key design principles when using a hierarchical core-distribution-access network model? (Choose two)

- A. A hierarchical network design model aids fault isolation
- B. The core layer is designed first, followed by the distribution layer and then the access layer
- C. The core layer provides server access in a small campus.
- D. A hierarchical network design facilitates changes
- E. The core layer controls access to resources for security

Correct Answer: AD

QUESTION 61

A Service Provider is designing a solution for a managed CE service to a number of local customers using a single CE platform and wants to have logical separation on the CE platform using Virtual Routing and Forwarding (VRF) based on IP address ranges or packet length. Which is the most scalable solution to provide this type of VRF Selection process on the CE edge device?

- A. Static Routes for Route Leaking
- B. Policy Based Routing
- C. OSPF per VRF Instance
- D. Multi-Protocol BGP

Correct Answer: B

QUESTION 62

An MPLS service provider is offering a standard EoMPLS-based VPLS service to CustomerA providing Layer 2 connectivity between a central site and

approximately 100 remote sites. CustomerA wants to use the VPLS network to carry its internal multicast video feeds which are sourced at the central site and consist of 20 groups at Mbps each. Which service provider recommendation offers the most scalability?

- A. EoMPLS-based VPLS can carry multicast traffic in a scalable manner
- B. Use a mesh of GRE tunnels to carry the streams between sites
- C. Enable snooping mechanisms on the provider PE routers.
- D. Replace VPLS with a Layer 3 MVPN solution to carry the streams between sites

Correct Answer: D

QUESTION 63

What best describes the difference between Automation and Orchestration?

- A. Automation refers to an automatic process for completing a single task and Orchestration refers to assembling and coordinating a set of tasks and conditions.
- B. Automation describes a hands-off configuration process while Orchestration refers to sets of automation tasks that require the network administrator to coordinate
- C. Automation refers to an automatic process for completing multiple tasks with conditions and Orchestration refers to executing tasks in parallel.
- D. Automation refers to scripting languages (Python. Ansible etc.) and Orchestration refers to commercial products that control configuration deployment

Correct Answer: A

QUESTION 64

A customer asks you to perform a high level review of their upcoming WAN refresh for remote sites.

The review is specially focused on their retail store operations consisting of 500+ locations connected via multipoint IPsec VPN solution.

- Which routing protocol would be valid but would also be the most restrictive for the expansion of this deployment model?
- A. EIGRP
- B. IS-IS
- C. OSPF
- D. BGP

Correct Answer: B

QUESTION 65

As part of a new network design documentation, you are required to explain the reason for choosing cisco FabricPath for Layer 2 loop avoidance. Which two elements help Cisco FabricPath mitigate Layer 2 loops if they happen in the Layer 2 MP network? (Choose two)

A. MAC tunneling

- B. IS-IS multipath
- C. RPF check
- D. TTL header

Correct Answer: CD

QUESTION 66

Which design benefit of PortF ast is true?

- A. PortFast does not generate a spanning tree topology change hen a station on a port is connected or disconnected
- B. PortFast disables spanning tree on the port, which puts the port into the forwarding state immediately after it is connected
- C. PortFast allows small, unmanaged switches to be plugged into ports of access switches without risking switch loops
- D. PortFast detects one-way communications on the physical port, which prevents switch loops
- E. PortFast prevents switch loops that are caused by a unidirectional point to point link condition on Rapid PVST+ and MST
- F. PortFast prevents switched traffic from traversing suboptimal paths on the network

Correct Answer: A

QUESTION 67

You are a network designer and you must ensure that the network you design is secure. How do you plan to prevent infected devices on your network from sourcing random DDoS attacks using forged source address?

- A. ACL based forwarding
- B. unicast RPF loose mode
- C. unicast RPF strict mode
- D. ACL filtering by destination

Correct Answer: C

QUESTION 68

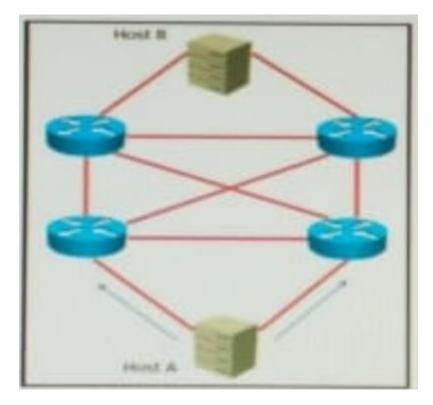
Which protocol does an SD-Access wireless Access Point use for its fabric data plane?

- A. GRE
- B. MPLS
- C. VXLAN
- D. LISP
- E. CAPWAP

Correct Answer: C

QUESTION 69

Refer to the exhibit. AJI links are P2P Layer 3. A high availability application is synchronizing data between host A and host B.



To increase chance of delivery the same data is sent twice from host A on two different NICs toward the two NICs on host B. Which solution must be deployed in the network to ensure that any failure in the network does not trigger data loss on host B?

- A. EIGRP with feasible successors
- B. BFD
- C. IP Fast Reroute
- D. Static routes

Correct Answer: C

QUESTION 70

Which encoding format does cisco ios XE software support for NETCONF?

- A. It supports HTML encoding for NETCONF
- B. It supports YAML encoding for NETCONF
- C. It supports XML encoding for NETCONF
- D. It supports JSON encoding for NETCONF

Correct Answer: C

QUESTION 71

Which two design solutions ensure sub 50 msec of the convergence time after a link failure in the network? (Choose two)

- A. BFD
- B. Ti-LFA
- C. minimal BGP scan time
- D. MPLS-FRR
- E. IGP fast hello

Correct Answer: BD

QUESTION 72

You want to split an Ethernet domain in two.

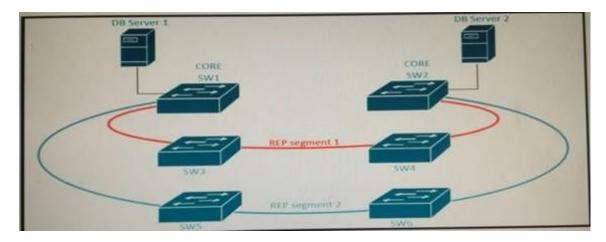
Which parameter must be unique in this design to keep the two domains separated?

- A. VTP domain
- B. VTP password
- C. STP type
- D. VLAN ID

Correct Answer: D

QUESTION 73

Refer to the exhibit. A new high availability DB sever cluster is installed in the network.



These two servers require high bandwidth and low latency Layer 2 connectivity for database replication. Which solution supports these requirements?

- A. Add two new links between SW1 and SW2 configured as LACP trunk with STP
- B. Add secondary links to REP segments 1 and 2
- C. Add two new links between SW1 and SW2 configured as REP segment 3
- D. Add two new links between SW1 and SW2 configured as REP segments 1 and 2 respectively

Correct Answer: C

QUESTION 74

VPLS is implemented in a Layer 2 network with 2000 VLANs. What is the primary concern to ensure successful deployment of VPLS?

- A. Flooding is necessary to propagate MAC address reachability information
- B. PE scalability
- C. The underlying transport mechanism
- D. VLAN scalability

Correct Answer: B

QUESTION 75

Which option is a fate-sharing characteristic in regards to network design?

- A. A failure of a single element causes the entire service to fail
- B. It protects the network against failures in the distribution layer

- C. It acts as a stateful forwarding device
- D. It provides data sequencing and acknowledgment mechanisms

Correct Answer: A

QUESTION 76

Drag and Drop Question

Drag and drop the design use cases from the left onto the correct uRPF techniques used to prevent spoofing attacks. Not all options are used.

to check whether a route to a given IP address exists without regard to its incoming interface

to filter Bogon IP addresses

feasible mode

to ensure the incoming interface is the best reverse path to a given IP address

when there are alternate routes to a given IP address

to check whether a route to a given IP address exists without regard to its incoming interface

to filter Bogon IP addresss

when there are alternate routes to a given IP address exists without given IP address

to ensure the incoming interface is the best reverse path to a given IP address exists without regard to its incoming interface

when there are alternate routes to a given IP address exists without regard to its incoming interface

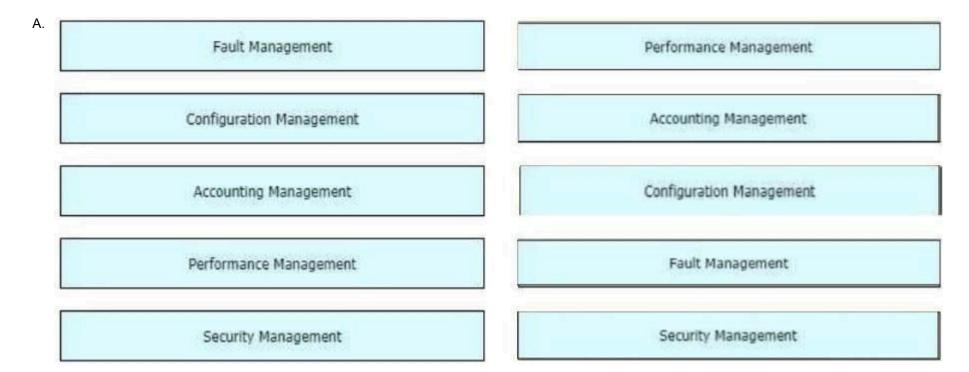
Correct Answer: A

QUESTION 77

Drag and Drop Question

Drag and drop the FCAPS network management reference models from the left onto the correct definitions on the right.

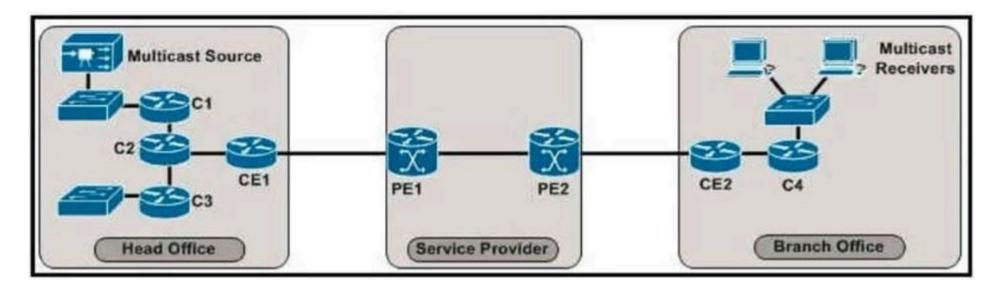
Fault Management	ensures that network transit quality remains at acceptable level
Configuration Management	gathers usage statistics for users and business units
Accounting Management	gathers and stores configuration code from network devices
Performance Management	recognizes, isolates, corrects, and logs events that occur in the network
Security Management	controls access to assets in the network



Correct Answer: A

QUESTION 78

Refer to the exhibit. The enterprise customer wants to stream one-way video from their head office to eight branch offices using multicast. Their current service provider provides a Layer3 VPN solution and manages the CE routers, but they do not currently support multicast. Which solution quickly allows this multicast traffic to go through while allowing for future scalability?



- A. Enable a GRE tunnel between nodes CE1 and CE2
- B. Enable a GRE tunnel between nodes C2 and C4
- C. Enable a GRE tunnel between nodes C1 and C4
- D. Implement hub and spoke MPLS VPN over DMVPN (also known as 2547o DMVPN) between CE1 and CE2
- E. The service provider must provide a Draft Rosen solution to enable a GRE tunnel between nodes PE1 and PE2

Correct Answer: B

QUESTION 79

An enterprise network has two core routers that connect to 200 distribution routers and uses full- mesh IBGP peering between these routers as its routing method. The distribution routers are experiencing high CPU utilization due to the BGP process. Which design solution is the most cost effective?

- A. Implement route reflectors on the two core routers
- B. Increase the memory on the core routers
- C. Implement e BGP between the core and distribution routers
- D. Increase the memory on the distribution routers
- E. Increase bandwidth between the core routers

Correct Answer: A

QUESTION 80

You want to mitigate failures that are caused by STP loops that occur before UDLD detects the failure or that are caused by a device that is no longer sending BPDUs.

Which mechanism do you use along with UDLD?

- A. Root guard
- B. BPDU guard
- C. Loop guard
- D. BPDU filtering

Correct Answer: C

QUESTION 81

How many fully established neighbour relationships exist on an Ethernet with five routers running OSPF as network type broadcast?

- A. 5
- B. 6
- C. 7
- D. 10
- E. 20

Correct Answer: C

QUESTION 82

An existing wireless network was designed to support data traffic only. You must now install context Aware services for location tracking changes must be applied to the existing wireless network to increase the location accuracy? (Chose two)

- A. Add access points along the perimeter of the coverage area.
- B. Increase the access point density to create an average inter-access point distance of less than 40 feet or 12.2 meters
- C. Use directional antennas to provide more cell overlapping
- D. Install additional access points in monitor mode where the co-channel interference would otherwise be affected
- E. Fine tune the radio configuration of the access point to have a higher average transmission power to achieve better coverage

Correct Answer: BE

QUESTION 83

Which statement about hot-potato routing architecture design is true?

- A. Hot-potato routing is the preferred architecture when connecting to content providers
- B. Hop-potato keeps traffic under the control of the network administrator for longer

- C. OSPF uses hot-potato routing if all ASBRs use the same value for the external metric
- D. Hot-potato routing is prone to misconfiguration as well as poor coordination between two networks

Correct Answer: A

QUESTION 84

Two enterprise networks must be connected together. Both networks are using the same private IP addresses.

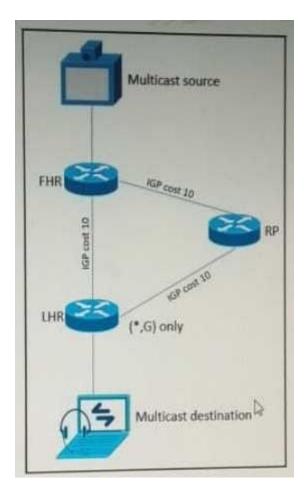
The client requests from both sides should be translated using hide NAT (dynamic NAT) with the overload feature to save IF addresses from the NAT pools. Which design addresses this requirement using only one Cisco I OS NAT router for both directions?

- A. This is not possible, because two Cisco IOS NAT routers are required to do dynamic NAT, with overload in both directions.
- B. The ip nat inside and ip nat outside commands must be configured at the interfaces with the overload option in both directions.
- C. The overload feature is the default and does not have to be configured.
- D. Two different NAT pools must be used for the ip nat inside source and the ip nat outside source commands for the overload feature in both directions.
- E. The Nat Virtual interface must be used to achieve this requirement.

Correct Answer: D

QUESTION 85

Refer to the exhibit. As part of a redesign project, you must predict multicast behavior. What happens to the multicast traffic received on the shared tree (*,G), if it is received on the LHR interface indicated*?



- A. It is dropped due to an unsuccessful RPF check against the multicast source
- B. It is switched give that no RPF check is performed
- C. It is switched due to a successful RPF check against the routing table
- D. It is dropped due to an unsuccessful RPk8t8ck against the multicast receiver.

Correct Answer: C

QUESTION 86

A BGP route reflector in the network is taking longer than expected to coverage during large network changes. Troubleshooting shows that the router cannot handle all the TCP acknowledgements during route updates. Which action can be performed to tune the device performance?

- A. Increase the size of the hold gueue.
- B. Increase the size of the large buffers.
- C. Decrease the size of the small buffers.
- D. Increase the keepalive timers for each BGP neighbor.

Correct Answer: A

QUESTION 87

Which two application requirements are mandatory tor traffic to receive proper treatment when placed in the priority queue? (Choose two.)

- A. small transactions (HTTP-like behavior)
- B. WRED drop treatment
- C. tolerance to packet loss
- D. intolerance to jitter
- E. TCP-based application

Correct Answer: AD

QUESTION 88

Which two conditions must be met for EIGRP to maintain an alternate loop-free path to a remote network? (Choose two.)

- A. The Reported Distance from a successor is lower than the local Feasible Distance.
- B. The Reported Distance from a successor is higher than the local Feasible Distance.
- C. The feasibility condition does not need to be met.
- D. The Feasible Distance from a successor is lower than the local Reported Distance.
- E. A feasible successor must be present.

Correct Answer: AE

QUESTION 89

You are designing a new Ethernet-based metro-area network for an enterprise customer to connect 50 sites within the same city OSPF will be the routing protocol used. The customer is primarily concerned with IPv4 address conservation and convergence time. Which two combined actions do you recommend? (Choose two)

- A. Use a multipoint Metro-E service for router connections
- B. Use a single address per router for all P2P links
- C. Use P2P links between routers in a hub-and-spoke design
- D. Configure address aggregation at each site router

E. Determine which OSPF routers will be DR/BDR

Correct Answer: AC

QUESTION 90

Which two statements about MLD snooping are true? (Choose two)

- A. When MLD snooping is enabled, QoS is automatically enabled.
- B. A VLAN can support multiple active MLD snooping queries, as long as each one is associated to a different multicast group.
- C. AN MLD snooping querier election occurs when any MLD snooping querier goes down or if there is an IP address change on the active querier.
- D. When multiple MLD snooping queriers are enabled in a VLAN, the querier with the lowest IP address in the VLAN is elected as the active MLD snooping querier.

Correct Answer: CD

QUESTION 91

Which two design option are available to dynamically discover the RP in an IPv6 multicast network? (Choose two)

- A. embedded RP
- B. MSDP
- C. BSR
- D. Auto-RP
- E. MLD

Correct Answer: AC

QUESTION 92

Company A has a hub-and spoke topology over an SP-managed infrastructure. To measure traffic performance metrics. IP SLA senders on all spoke CE routers and an IP SLA responder on the hub CE router.

What must they monitor to have visibility on the potential performance impact due to the constantly increasing number of spoke sites?

- A. memory usage on the hub router
- B. interface buffers on the hub and spoke routers
- C. CPU and memory usage on the spoke routers
- D. CPU usage on the hub router

Correct Answer: D

QUESTION 93

Which two descriptions of CWDM are true? (Choose two)

- A. typically used over long distances, but requires optical amplification
- B. uses the 850nm band
- C. allows up to 32 optical earners to be multiplexed onto a single fiber
- D. shares the same transmission window as DWDM
- E. Passive CWDM devices require no electrical power

Correct Answer: DE

QUESTION 94

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. TLS
- B. DTLS
- C. IPsec
- D. GRE

Correct Answer: C

QUESTION 95

Company XYZ runs OSPF in their network. A design engineer decides to implement hot-potato routing architecture. How can this implementation be achieved?

- A. Enable iBGP and apply prepend to ensure all prefixes will have the same length of the AS path attribute value.
- B. Redistribute the external prefixes onto OSPF and ensure the total metric calculation includes only the ext value and the value is the same in all ASBRs.
- C. Enable OSPF load-balancing over unequal cost path.
- D. Redistribute the external prefixes onto OSPF and ensure that the total metric calculation includes external internal values.

Correct Answer: D

QUESTION 96

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

- A. monitoring capabilities
- B. project time frame

- C. staff experience
- D. component availability
- E. total cost

Correct Answer: BE

QUESTION 97

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

Correct Answer: BD

QUESTION 98

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. controller state consistency
- C. control path reliability
- D. controller clustering

Correct Answer: B

QUESTION 99

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 routed between sites to isolate fault domains and increase overall availability.
- C. Synchronous data replication must be used to meet the business requirements
- D. Asynchronous data replication should be used in this scenario to avoid performance impact in the primary site.
- E. VSANs must be extended from the primary to the secondary site to improve performance and availability.

Correct Answer: BD

QUESTION 100

Which undesired effect of increasing the jitter compensation buffer is true?

- A. The overall transport jitter decreases and quality improves.
- B. The overall transport jitter increases and quality issues can occur.
- C. The overall transport delay increases and quality issues can occur.
- D. The overall transport delay decreases and quality improves.

Correct Answer: C

QUESTION 101

Which three tools are used for ongoing monitoring and maintenance of a voice and video environment? (Choose three.)

- A. flow-based analysis to measure bandwidth mix of applications and their flows
- B. call management analysis to identify network convergence-related failures
- C. call management analysis to identify CAC failures and call quality issues
- D. active monitoring via synthetic probes to measure loss, latency, and jitter
- E. passive monitoring via synthetic probes to measure loss, latency, and jitter
- F. flow-based analysis with PTP time-stamping to measure loss, latency, and jitter

Correct Answer: ACD

QUESTION 102

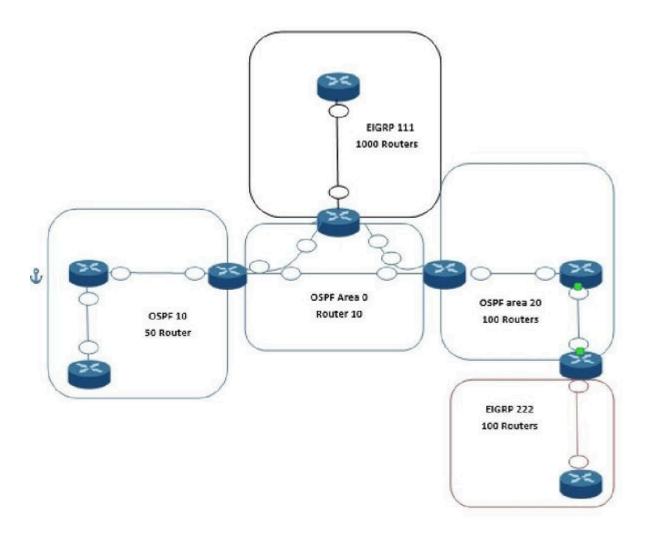
Which two advantages of using DWDM over traditional optical networks are true? (Choose two.)

- A. inherent topology flexibility and service protection provided without penalty through intelligent oversubscription of bandwidth reservation
- B. ability to expand bandwidth over existing optical Infrastructure
- C. inherent topology flexibility with built-in service protection
- D. inherent topology flexibility with intelligent chromatic dispersion
- E. inherent topology flexibility with a service protection provided through a direct integration with an upper layer protoco

Correct Answer: AB

QUESTION 103

Retef to the exhibit. This network is running OSPF and EIGRP as the routing protocols. Mutual redistribution of the routing protocols has been contoured on the appropriate ASBRs. The OSPF network must be designed so that flapping routes in EIGRP domains do not affect the SPF runs within OSPF. The design solution must not affect the way EIGRP routes are propagated into the EIGRP domains. Which technique accomplishes the requirement?



- A. route summarization the ASBR interfaces facing the OSPF domain
- B. route summarization on the appropriate ASBRS.
- C. route summarization on the appropriate ABRS.
- D. route summarization on EIDRP routers connecting toward the ASBR

Correct Answer: B

QUESTION 104

Company XYZ is running OSPF in their network. They have merged with another company that is running EIGRP as the routing protocol. Company XYZ now needs the two domains to talk to each other with redundancy, while maintaining a loop free environment. The solution must scale when new networks are added into the network in the near future. Which technology can be used to meet these requirements?

- A. multipoint route-redistribution with route filtering using ACLs
- B. multipoint route-redistribution with route filtering using route tags
- C. single point route-redistribution with route filtering using route tags
- D. single point route-redistribution with route filtering using ACLs

Correct Answer: B

QUESTION 105

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

Correct Answer: A

QUESTION 106

Which MPLS TE design consideration is true?

- A. MPLS TE replaces LDP and the dependency of the IGP to identify the best path.
- B. MPLS TE provides link and node protection
- C. MPLS TE optimizes the routing of IP traffic, given the constraints imposed by backbone capacity and application requirements.
- D. MPLS TE requires Layer 3 VPN full-mesh topology deployment

Correct Answer: C

QUESTION 107

The network designer needs to use GLOP IP address in order make them unique within their ASN, which multicast address range will be considered?

- A. 239.0.0.0 to 239.255.255.255
- B. 224.0.0.0 to 224.0.0.255
- C. 233.0.0.0 to 233.255.255.255
- D. 232.0.0.0 to 232.255.255.255

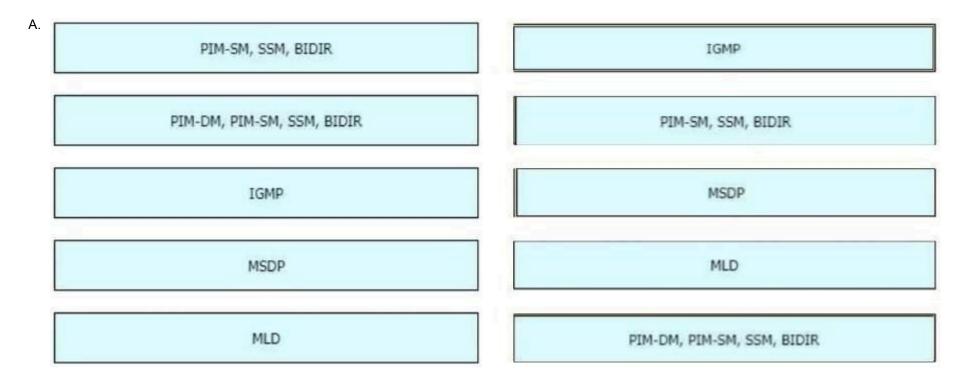
Correct Answer: C

QUESTION 108

Drag and Drop Question

Drag and drop the multicast protocols from the left onto the current design situation on the right.

PIM-SM, SSM, BIDIR	IPv4 Group Management	
PIM-DM, PIM-SM, SSM, BIDIR	IPv4 Forwarding	
IGMP	1Pv4 Interdomain Source Discovery	
MSDP	IPv6 Group Management	
MLD	IPv6 Forwarding	

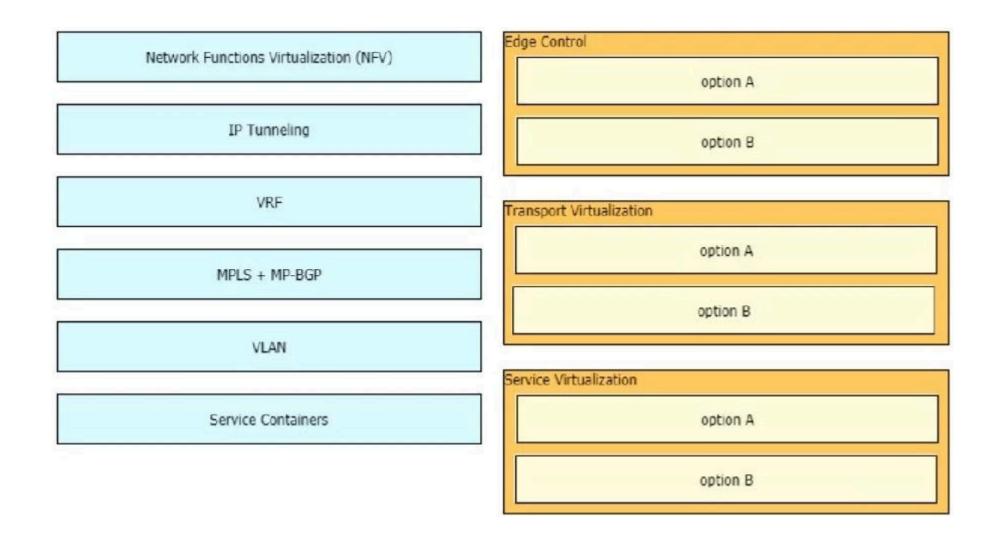


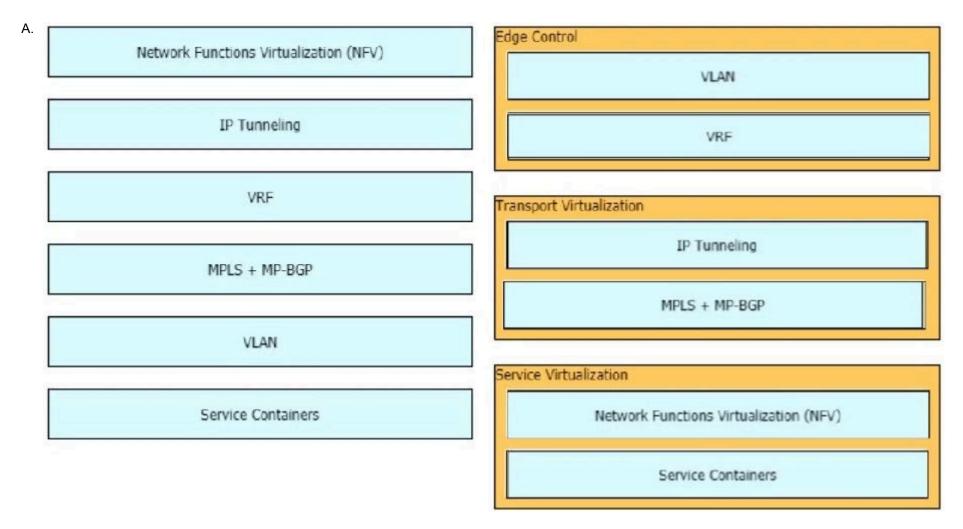
Correct Answer: A

QUESTION 109

Drag and Drop Question

Drag and drop the end-to-end network virtualization elements from the left onto the correct network areas on the right.





Correct Answer: A

QUESTION 110

Which two data plane hardening techniques are true? (Choose two)

- A. warning banners
- B. redundant AAA servers
- C. Control Plane Policing

- D. SNMPv3
- E. infrastructure ACLs
- F. disable unused services
- G. routing protocol authentication

Correct Answer: EF

QUESTION 111

You have been asked to design a high-density wireless network for a university campus. Which two principles would you apply in order to maximize the wireless network capacity? (Choose two.)

- A. Implement a four-channel design on 2.4 GHz to increase the number of available channels
- B. Choose a high minimum data rate to reduce the duty cycle.
- C. increases the number of SSIDs to load-balance the client traffic.
- D. Make use of the 5-GHz band to reduce the spectrum utilization on 2.4 GHz when dual-band clients are used.
- E. Enable 802.11n channel bonding on both 2.4 GHz and 5 GHz to increase the maximum aggregated cell throughput.

Correct Answer: CE

QUESTION 112

Company XYZ is redesigning their QoS policy. Some of the applications used by the company are real-time applications. The QoS design must give these applications preference in terms of transmission. Which QoS strategy can be used to fulfill the requirement?

- A. weighted fair queuing
- B. weighted random early detection
- C. low-latency queuing
- D. first-in first-out

Correct Answer: C

QUESTION 113

As part of workspace digitization, a large enterprise has migrated all their users to Desktop as a Sen/ice (DaaS), by hosting the backend system in their on-premises data center. Some of the branches have started to experience disconnections to the DaaS at periodic intervals, however, local users in the data center and head office do not experience this behavior. Which technology can be used to mitigate this issue?

- A. tail drop
- B. traffic shaping
- C. WRED
- D. traffic policing

Correct Answer: B

QUESTION 114

A healthcare provider discovers that protected health information of patients was altered without patient consent. The healthcare provider is subject to HIPAA compliance and is required to protect PHI data.

Which type of security safeguard should be implemented to resolve this issue?

- A. technical and physical access control
- B. administrative security management processes
- C. physical device and media control
- D. technical integrity and transmission security

Correct Answer: B

QUESTION 115

Which two technologies enable multilayer segmentation? (Choose two.)

- A. policy-based routing
- B. segment routing
- C. data plane markings
- D. firewalls
- E. filter lists

Correct Answer: AD

QUESTION 116

IPFIX data collection via standalone IPFIX probes is an alternative to flow collection from routers and switches. Which use case is suitable for using IPFIX probes?\

- A. performance monitoring
- B. security
- C. observation of critical links
- D. capacity planning

Correct Answer: A

QUESTION 117

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. fault management
- B. accounting management
- C. performance management
- D. security management

Correct Answer: C

QUESTION 118

While designing a switched topology, in which two options is UplinkFast recommended? (Choose two)

- A. when switches of different spanning-tree types are connected (for example. 802.1d connecting to 802.1w)
- B. on distribution layer switches
- C. when hello timers are changed to more aggressive values
- D. on access layer switches
- E. on the core switches

Correct Answer: AD

QUESTION 119

You are using iSCSI to transfer files between a 10 Gigabit Ethernet storage system and a 1 Gigabit Ethernet server. The performance is only approximately 700 Mbps and output drops are occurring on the server switch port.

Which action will improve performance in a cost-effective manner?

- A. Change the protocol to CIFS.
- B. Increase the queue to at least 1 GB
- C. Use a WRED random drop policy
- D. Enable the TCP Nagle algorithm on the receiver

Correct Answer: A

QUESTION 120

Customer XYZ network consists of an MPLS core. IS-IS running as IGP a pair of BGP route reflectors for route propagation, and a few dozens of MPLS-TE tunnels for specific tactical traffic engineering requirements. The customer's engineering department has some questions about the use of the Overload Bit in the IS-IS networks and how it could be used to improve their current network design. Which two concepts about the Overload Bit are true? (Choose two.)

A. It can be set on a router during the startup process for a fixed period of time

- B. Networks advertised within the LSPs of the respective node will become unreachable
- C. It forces the midpoint MPLS-TE node to reoptimize the primary tunnels going through the OL node.
- D. It can be set on a router until other interacting protocols have signaled convergence.
- E. It is not recommended on BGP Route Reflectors

Correct Answer: AD

QUESTION 121

You have been tasked with designing a data center interconnect as part of business continuity. You want to use FCoE over this DCI to support synchronous replication. Which two technologies allow for FCoE via lossless Ethernet or data center bridging? (Choose two.)

- A. DWDM
- B. EoMPLS
- C. SONET/SDH
- D. Multichassis EtherChannel over Pseudowire
- E. VPLS

Correct Answer: AC

QUESTION 122

You are designing a large-scale DMVPN network with more than 500 spokes using EIGRP as the IGP protocol. Which design option eliminates potential tunnel down events on the spoke routers due to the holding time expiration?

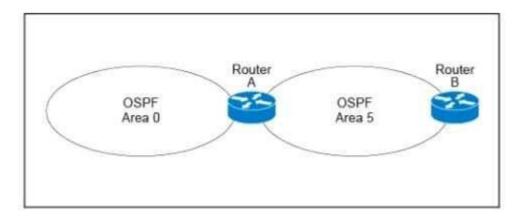
- A. Increase the hold queue on the physical interface of the hub router.
- B. Increase the hold gueue on the tunnel interface of the spoke routers
- C. Increase the hold queue on the tunnel interface of the hub router
- D. Apply QoS for pak_priority class
- E. Increase the hold queue on the physical interface of the spoke routers.

Correct Answer: C

QUESTION 123

Refer to the exhibit. A customer runs OSPF with Area 5 between its aggregation router and an internal router.

When a network change occurs in the backbone. Area 5 starts having connectivity issues due to the SPF algorithm recalculating an abnormal number of times in Area 5. You are tasked to redesign this network to increase resiliency on the customer network with the caveat that Router B does not support the stub area. How can you accomplish this task?



- A. Increase the bandwidth on the connection between Router A and Router B
- B. Implement LSA filtering ontheAB, allowing summary routes and preventing more specific routes into Area 5
- C. Create a virtual link to Area 0 from Router B to the ABR
- D. Turn on LSA throttling on all devices in Area 5
- E. Set Area 5 to stubby at the ABR anyway

Correct Answer: B

QUESTION 124

The network designer needs to use GLOP IP addresses in order to make them unique within their ASN. Which multicast address range should be used?

- A. 232.0.0.0 to 232 255.255.255
- B. H233.0.0 0 to 233.255.255 255
- C. 239000 to 239255255.255
- D. 224000 to 2240.0 255

Correct Answer: B

QUESTION 125

You are tasked to design a QoS policy for a service provider so they can include it in the design of their MPLS core network. If the design must support an MPLS network with six classes, and CEs will be managed by the service provider, which QoS policy should be recommended?

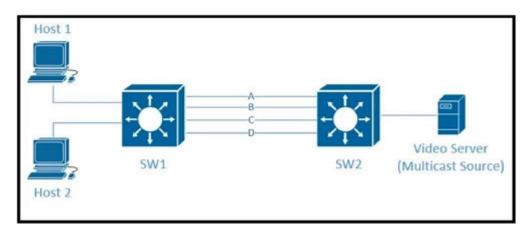
- A. map IP CoS bits into the IP Precedence field
- B. map flow-label bits into the Exp field

- C. map IP precedence bits into the DSCP field
- D. map DSCP bits into the Exp field

Correct Answer: D

QUESTION 126

Refer to the exhibit. Traffic was equally balanced between Layer 3 links on core switches SW1 and SW2 before an introduction of the new video server in the network. This video server uses multicast to send video streams to hosts and now one of the links between core switches is over utilized. Which design solution solves this issue?



- A. Add more links between core switches.
- B. Aggregate links Layer 2 link aggregation.
- C. Apply a more granular load- balancing method on SW1.
- D. Apply a more granular load-balancing method on SW2.
- E. Filter IGMP joins on an over -utilized link.

Correct Answer: B

QUESTION 127

How must the queue sizes be designed to ensure that an application functions correctly?

- A. Each individual device queuing delay in the chain must be less than or equal to the application required delay.
- B. The queuing delay on every device in the chain must be exactly the same to the application required delay.
- C. The default queue sizes are good for any deployment as it compensates the serialization delay.
- D. The sum of the queuing delay of all devices plus serialization delay in the chain must be less than or equal to the application required delay

Correct Answer: D

QUESTION 128

Which two mechanisms avoid suboptimal routing in a network with dynamic mutual redistribution between multiple OSPFv2 and EIGRP boundaries? (Choose two.)

- A. AD manipulation
- B. matching OSPF external routes
- C. route tagging
- D. route filtering
- E. matching EIGRP process ID

Correct Answer: CD

QUESTION 129

Company XYZ has a hub-and-spoke topology over an SP-managed infrastructure. To measure traffic performance metrics, they implemented IP SLA senders on all spoke CE routers and an IP SLA responder on the hub CE router.

What must they monitor to have visibility on the potential performance impact due to the constantly increasing number of spoke sites?

- A. CPU and memory usage on the spoke routers
- B. memory usage on the hub router
- C. CPU usage on the hub router
- D. interface buffers on the hub and spoke routers

Correct Answer: C

QUESTION 130

Which optimal use of interface dampening on a fast convergence network design is true?

- A. When occasional flaps of long duration occur
- B. when numerous adjacent flaps of very short duration occur
- C. when the router hardware it slower than the carrier delay down detection
- D. when the switch hardware is faster than the debounce timer down detection

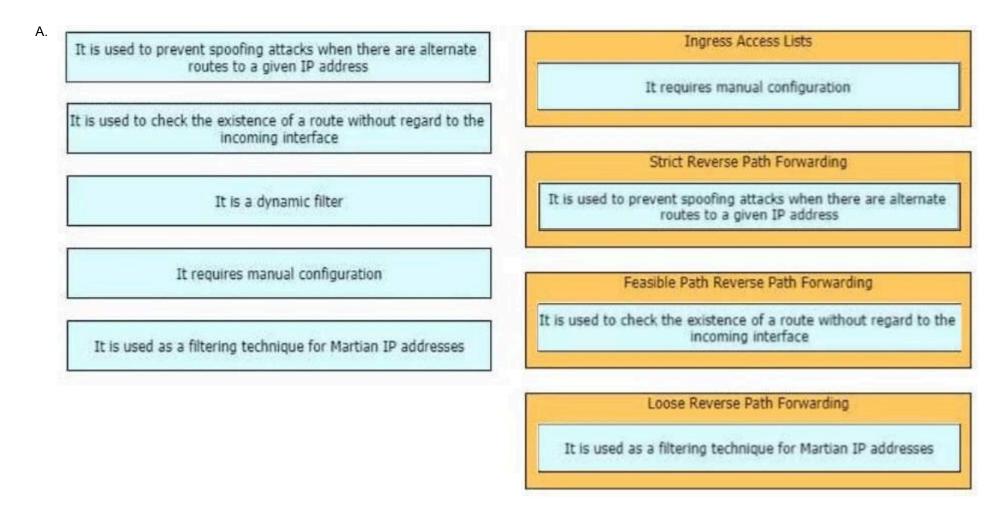
Correct Answer: B

QUESTION 131

Drag and Drop Question

Drag and drop the design characteristics from the left onto the correct network filter techniques on the right. Not all options are used.

Ingress Access Lists It is used to prevent spoofing attacks when there are alternate routes to a given IP address target 1 It is used to check the existence of a route without regard to the incoming interface Strict Reverse Path Forwarding It is a dynamic filter target 2 It requires manual configuration Feasible Path Reverse Path Forwarding target 3 It is used as a filtering technique for Martian IP addresses Loose Reverse Path Forwarding target 4



Correct Answer: A

QUESTION 132

Which Interconnectivity method offers the fastest convergence in the event of a unidirectional issue between three Layer 3 switches connected together with routed links in the same rack in a data center?

- A. Copper Ethernet connectivity with BFD enabled
- B. Copper Ethernet connectivity with UDLD enabled
- C. Fiber Ethernet connectivity with BFD enabled

D. Fiber Ethernet connectivity with UDLD enabled

Correct Answer: C

QUESTION 133

Which two actions ensure voice quality in a branch location with a low-speed, high-latency WAN connection? (Choose two.)

- A. Increase WAN bandwidth
- B. Increase memory branch switch.
- C. Fragment data packets.
- D. Replace any electrical links with optical links
- E. Prioritize voice packets

Correct Answer: CE

QUESTION 134

Which function is performed at the access layer of the three-layer hierarchical network design model?

- A. fault isolation
- B. QoS classification and marking boundary
- C. reliability
- D. fast transport
- E. redundancy and load balancing

Correct Answer: B

QUESTION 135

Which management category is not part of FCAPS framework?

- A. Configuration
- B. Security
- C. Performance
- D. Authentication
- E. Fault-management

Correct Answer: D

QUESTION 136

What is a characteristic of a secure cloud architecture model?

- A. limited access to job function
- B. dedicated and restricted workstations
- C. multi-factor authentication
- D. software-defined network segmentation

Correct Answer: D

QUESTION 137

Which best practice ensures data security in the private cloud?

- A. Use IPsec for communication between unsecured network connection
- B. Encrypt data at rest and in transition.
- C. Use the same vendor for consistent encryption.
- D. Anonymize data ownership to comply with privacy rules.

Correct Answer: B

QUESTION 138

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

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

Correct Answer: BE

QUESTION 139

Which three items do you recommend for control plane hardening of an infrastructure device? (Choose three.)

- A. redundant AAA servers
- B. Control Plane Policing
- C. warning banners
- D. to enable unused .services
- E. SNMPv3
- F. routing protocol authentication

Correct Answer: BEF

QUESTION 140

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

Correct Answer: C

QUESTION 141

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 increases convergence time.
- D. It reduces convergence time.

Correct Answer: B

QUESTION 142

What are two common approaches to analyzing and designing networks? (Choose two.)

- A. bottom-up approach
- B. high-low security approach
- C. top-down approach
- D. left-right approach
- E. three-tier approach

Correct Answer: AC

QUESTION 143

A multicast network is sing Bidirectional PIM.

Which two combined actions achieve high availability so that two RPs within the same network can act in a redundant manner? (Choose two)

- A. Use two phantom RP addresses
- B. Manipulate the administration distance of the unicast routes to the two RPs
- C. Manipulate the multicast routing table by creating static mroutes to the two RPs
- D. Advertise the two RP addresses in the routing protocol
- E. Use anycast RP based on MSDP peering between the two RPs
- F. Control routing to the two RPs through a longest match prefix

Correct Answer: AF

QUESTION 144

Which purpose of a dynamically created tunnel interface on the design of IPv6 multicast services Is true?

- A. first-hop router registration to the RP
- B. multicast client registration to the RP
- C. multicast source registration to the RP
- D. transport of all IPv6 multicast traffic

Correct Answer: D

QUESTION 145

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. Santiago and Cape Town
- C. Santiago and Mumbai
- D. Cape Town and Mumbai
- E. Cape Town and Beijing
- F. Santiago and Beijing

Correct Answer: D

QUESTION 146

How can EIGRP topologies be designed to converge as fast as possible in the event of a point-to- point link failure?

- A. Limit the query domain by use of distribute lists.
- B. Build neighbor adjacencies in a triangulated fashion.
- C. Build neighbor adjacencies in squared fashion.

- D. Limit the query domain by use of summarization.
- E. Limit the query domain by use of default routes.

Correct Answer: D

QUESTION 147

Which effect of using ingress filtering to prevent spoofed addresses on a network design is true?

- A. It reduces the effectiveness of DDoS attacks when associated with DSCP remarking to Scavenger.
- B. It protects the network Infrastructure against spoofed DDoS attacks.
- C. It Classifies bogon traffic and remarks it with DSCP bulk.
- D. It filters RFC 1918 IP addresses.

Correct Answer: B

QUESTION 148

Which relationship between IBGP and the underlying physical topology is true?

- A. iBGP full mesh requirement does not dictate any specific network topology.
- B. iBGP can worn only on a ring network topology with a link-state protocol like OSPF or IS-IS
- C. iBGP full mesh requires an underlying fully meshed network topology.
- D. iBGP does not work on a ring network topology even with an underlying IGP.

Correct Answer: A

QUESTION 149

Which two statements describe the hierarchical LAN design model? (Choose two)

- A. It is a well-understood architecture that provides scalability
- B. It is the best design for modern data centers
- C. It is the most optimal design but is highly complex
- D. It provides a simplified design
- E. Changes, upgrades, and new services can be introduced in a controlled and stagged manner

Correct Answer: AE

QUESTION 150

Which two points must network designers consider when designing a new network design or when evaluating an existing network design to help them understand the high-level design direction with regards to the security aspects? (Choose two)

- A. Consider Business objectives and goals
- B. Consider organization's security policy standards
- C. Consider for only multi-site networks
- D. Consider for only new network technologies and components

Correct Answer: AB

QUESTION 151

A healthcare customer requested that SNMP traps must be sent over the MPLS Layer 3 VPN service. Which protocol must be enabled?

- A. SNMPv3
- B. Syslog
- C. Syslog TLS
- D. SNMPv2
- E. SSH

Correct Answer: A

QUESTION 152

Refer to the table. 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 the scenario?

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. Metro Ethernet
- B. DWDM
- C. CWDM

D. MPLS

Correct Answer: A

QUESTION 153

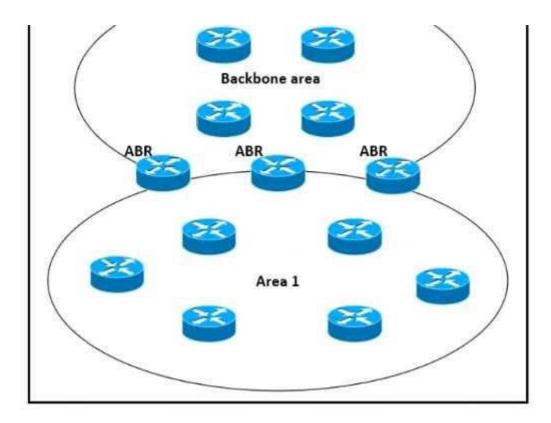
Which architecture does not require an explicit multicast signaling protocol, such as PIM or P2MP, to signal the multicast state hop-by-hop, but instead uses a link state protocol to advertise the multicast forwarding state?

- A. Binary indexed explicit routing
- B. Binary intermediate enhanced routing
- C. Bit indexed explicit replication
- D. Bi-directional implicit replication

Correct Answer: C

QUESTION 154

Refer to the exhibit. Which impact of using three or more ABRs between the backbone area and area 1 is true?



- A. In a large-scale network LSA replication by all ABRs can cause serious scalability issues
- B. Multiple ABRs reduce the CPU processing on each A6R due to splitting prefix advertisement
- $\hbox{C. In a large-scale network multiple ABRs can create microloops.}\\$
- D. Prefixes from the non-backbone area are advertised by one ABR to the backbone

Correct Answer: A

QUESTION 155

Refer to the table. 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?

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. CWDM over dark fiber

B. MPLS

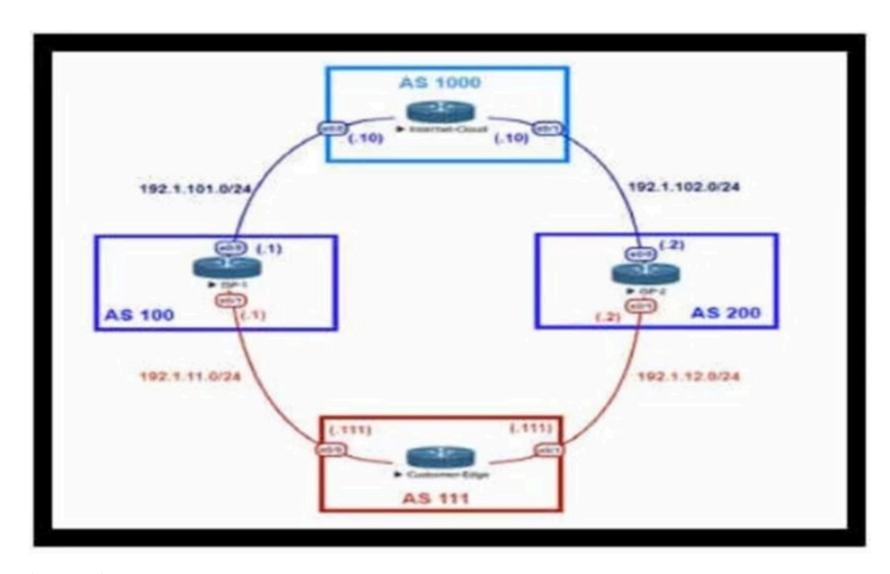
C. DWDM over dark fiber

D. Metro Ethernet

Correct Answer: D

QUESTION 156

Refer to the exhibit. An engineer is designing the traffic flow for AS 111. Traffic from AS 111 should be preferred via AS 100 for all external routes. A method must be used that only affects AS 111. Which BGP attributes are best suited to control outbound traffic?



- A. community
- B. MED
- C. local preference
- D. As path

Correct Answer: C

QUESTION 157

Refer to the table. 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?

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. MPLS wires only

B. CWDM over dark fiber

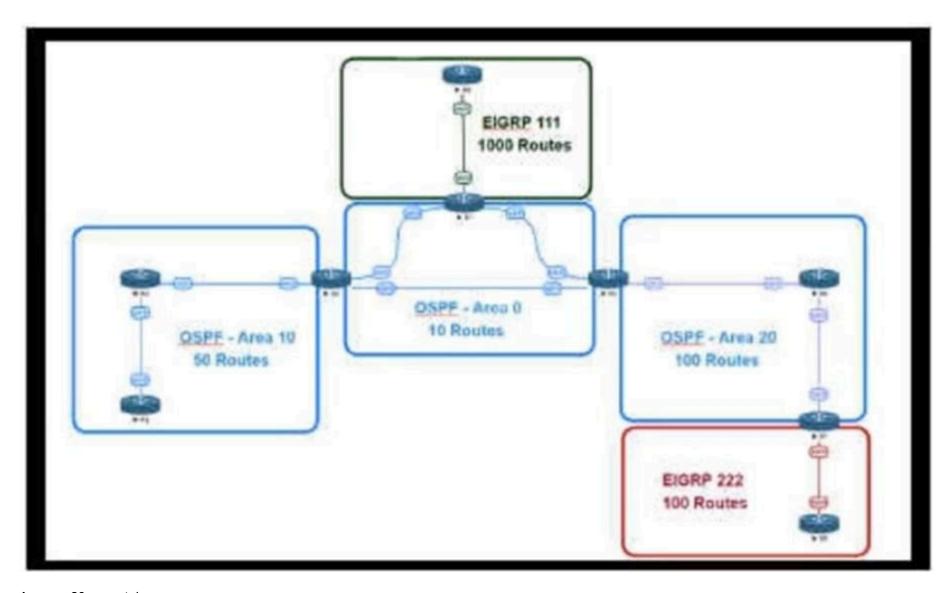
C. DWDM over dark fiber

D. Metro Ethernet

Correct Answer: D

QUESTION 158

Retef to the exhibit. An engineer is designing a multiarea OSPF network for a client who also has a large EIGRP domain EIGRP routes are getting redistributed into OSPF, OSPF area 20 has routers with limited memory and CPU resources. The engineer wants to block routes from EIGRP 111 from propagating into area 20 and allow EIGRP 222 routes to How in. Which OSPF area type fulfills this design requirement?

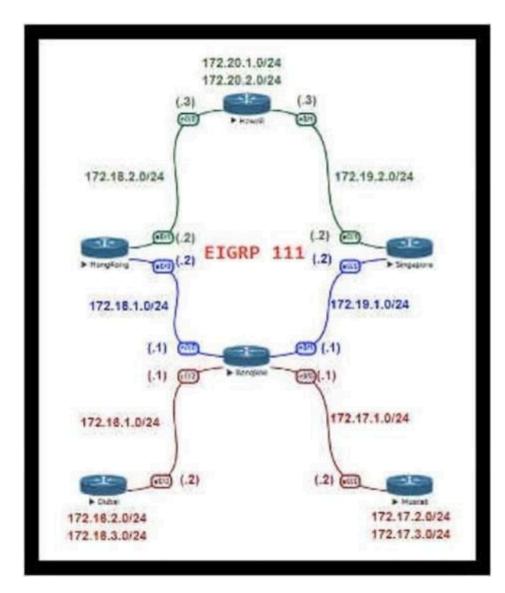


- A. area 20 as a stub area
- B. type 5 LSA filtering on the ASBR between EIGRP 111 and area a
- C. area 20 as a NSSA area
- D. type 3 LSA filtering on the ABR between area 0 area 20

Correct Answer: C

QUESTION 159

Refer to the exhibit. For Company XYZ Bangkok is using ECMP to reach the 172.20.2.0/24 network. The company wants a design that would allow them to forward traffic from 172.16.2.0/24 toward 172.20.2.0/24 via the Singapore router as the preferred route. The rest of the traffic should continue to use ECMP. Which technology fulfills this design requirement?

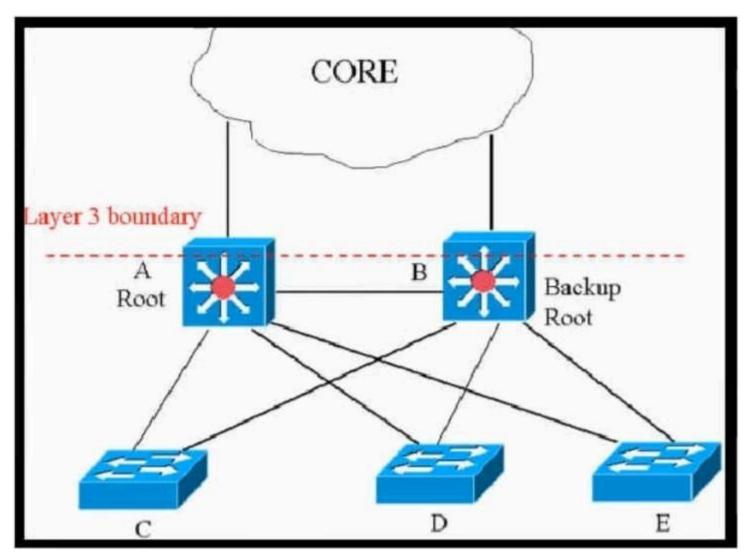


- A. policy-based routing
- B. route summarization
- C. unequal-cost load balancing using variance
- D. LFA

Correct Answer: A

QUESTION 160

Refer to the exhibit. This network is running legacy STP 802.1 d. Assuming "hello_timer" is fixed to 2 seconds, which parameters can be modified to speed up convergence times after single link/node failure?



- A. The transit_delay=5 and dpdu_delay=20 are recommended values, considering helto_timer=2 and specified
- B. Only the maximum_transmission_halt_delay and diameter parameters are configurable parameters in 802. to speed up STP convergence process
- C. The max_age and forward delay parameters can be adjusted to speed up STP convergence process.
- D. Only the transit_delay and bpdu_delay timers are configurable parameters in 802.1d to speed up STP convergence process.

Correct Answer: C

QUESTION 161

Company XYZ, a global content provider, owns data centers on different continents. Their data center design involves a standard three-layer design with a Layer 3-only core. HSRP is used as the FHRP. They require VLAN extension across access switches in all data centers, and they plan to purchase a Layer 2 interconnection between two of their data centers in Europe. In the absence of other business or technical constraints, which termination point is optimal for the layer 2 interconnection?

- A. at the access layer because the STP root bridge does not need to align with the HSRP active node
- B. at the core layer, to offer the possibility to isolate STP domains
- C. at the core layer because all external connections must terminate there for security reasons
- D. at the aggregation layer because it is the Layer 2 to Layer 3 demarcation point

Correct Answer: D

QUESTION 162

Which actions are performed at the distribution layer of the three-layer hierarchical network design model? (Choose two)

- A. Fast transport
- B. Reliability
- C. QoS classification and marking boundary
- D. Fault isolation
- E. Redundancy and load balancing

Correct Answer: DE

QUESTION 163

An enterprise campus is adopting a network virtualization design solution with these requirements It must include the ability to virtualize the data plane and control plane by using VLANs and VRFs It must maintain end-to-end logical path transport separation across the network resources available grouped at the access edge.

Which two primary models can this network virtualization design be categorized? (Choose two)

- A. Path isolation
- B. Session isolation

- C. Group virtualization
- D. Services virtualization
- E. Edge isolation

Correct Answer: AD

QUESTION 164

Which design benefit of bridge assurance is true?

- A. It supposes a spanning-tee topology change upon connecting and disconnecting a station on a port
- B. It prevents switched traffic from traversing suboptimal paths on the network.
- C. It allows small, unmanaged switches to be plugged into ports of access switches without the risk of switch loops.
- D. It prevents switch loops caused by unidirectional point-to-point link condition on Rapid PVST + and MST

Correct Answer: D

QUESTION 165

Which DCI technology utilizes a "flood and learn" technique to populate the Layer2 forwarding table?

- A. LISP
- B. OTV
- C. VPLS
- D. EVPN

Correct Answer: C

QUESTION 166

What advantage of placing the IS-IS layer 2 flooding domain boundary at the core Layer in a three- layer hierarchical network is true?

- A. The Layer 1 and Layer 2 domains can easily overlap
- B. It reduces the complexity of the Layer 1 domains
- C. It can be applied to any kind of topology
- D. The Layer 2 domain is contained and more stable

Correct Answer: D

QUESTION 167

A network engineering team is in the process of designing a lab network for a customer demonstration. The design engineer wants to show that the resiliency of the MPLS traffic Engineering Fast Reroute solution has the same failover/failback times as a traditional SONET/SDH network (around

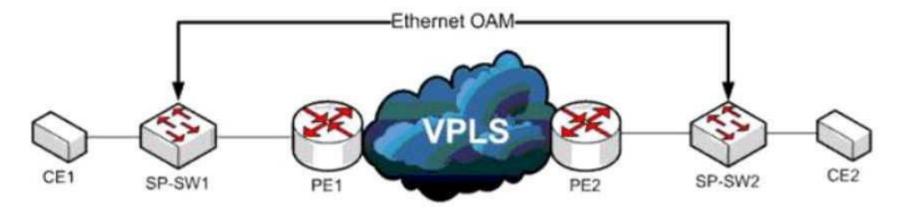
50MSEC). In order to address both link failure and node failure within the lab typology network, which type of the MPLS TE tunnels must be considered for this demonstration?

- A. TE backup tunnel
- B. Next-hop (NHop) tunnel
- C. FRR Backup tunnel
- D. next-next-hop (NNHop) tunnel

Correct Answer: D

QUESTION 168

Refer to the exhibit A service provider has a requirement to use Ethernet OAM to detect end-to- end connectivity failures between SP-SW1 and SP-SW2. Which two ways to design this solution are true? (Choose two)



- A. Enable unicast heartbeat messages to be periodically exchanged between MEPs
- B. Enable Connectivity Fault Management on the SP switches
- C. Use upward maintenance endpoints on the SP switches
- D. Forward E-LMI PDUs over VPLS
- E. Forward LLD PDUs over the VPLS

Correct Answer: BC

QUESTION 169

Which design consideration is valid when you contrast fabricPath and trill?

A. FabricPath uses IS-IS, but TRILL uses VxLAN

- B. FabricPath permits active-active FHRP and TRILL support anycast gateway.
- C. FabricPath Permits ECMP, but TRILL does not
- D. FabricPath permits active-active mode, but TRILL supports only active-standby mode.

Correct Answer: B

QUESTION 170

Which mechanism enables small, unmanaged switches to plug into ports of access switches without risking switch loops?

- A. PortFast
- B. UDLD
- C. Root guard
- D. BPDU guard

Correct Answer: D

QUESTION 171

Which main IoT migration aspect should be reviewed for a manufacturing plant?

- A. Sensors
- B. Security
- C. Applications
- D. Wi-Fi Infrastructure
- E. Ethernet Switches

Correct Answer: A

QUESTION 172

Which two pain points are the most common for container technology adoption? (Choose two)

- A. Performance
- B. Security
- C. Cost
- D. Container deployment
- E. Skilled staff
- F. Compliance

Correct Answer: DE

QUESTION 173

Company ABC uses IPv4-only. Recently they started deploying new endpoint devices. For operational reasons, IPv6 cannot be disabled on these new endpoint devices. Which security measure prevents the new endpoint from learning an IPv6 prefix from an attacker?

- A. Source Guard and Prefix Guard
- B. Router Advertisement Guard
- C. Prefix Guard
- D. Secure Neighbor Discovery

Correct Answer: B

QUESTION 174

You have been asked to design a remote access VPN solution to support up to 2000 devices. You must ensure that only corporate assets are allowed to connect to the VPN, and users must authenticate to gain access of their based on their user role. Users must use a password that they are already using to access existing applications. A user may not always use the same device to access the VPN. Which two options combined meet the requirements? (Choose two)

- A. Use local usernames and passwords on the VPN device
- B. Deploy a central authentication directory that users can be authenticated and authorized against
- C. Deploy certificates that are unique to each user
- D. Deploy an IPsec VPN solution
- E. Deploy certificates that are unique to each device
- F. Deploy a SSL VPN solution

Correct Answer: BF

QUESTION 175

As network designer, which option is your main concern with regards to virtualizing multiple network zones into a single hardware device?

- A. Fate sharing
- B. CPU resource allocation
- C. Congestion control
- D. Security
- E. Bandwidth allocation

Correct Answer: A

QUESTION 176

You are designing the routing design for two merging companies that have overlapping IP address space. Which of these must you consider when developing the routing and NAT design?

- A. Local to global NAT translation is done after routing
- B. Global to local NAT translation is done before routing.
- C. Local to global NAT translation is done before policy-based routing
- D. Global to local NAT translation is done after policy-based routing.

Correct Answer: B

QUESTION 177

Which feature must be part of the network design to wait a predetermined amount of time before notifying the routing protocol of a change in the path in the network?

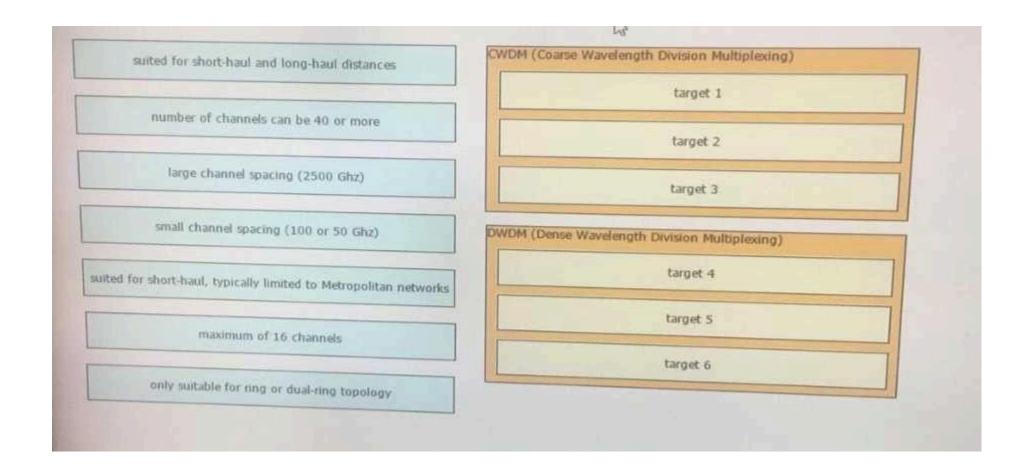
- A. Transmit delay
- B. Throttle timer
- C. SPF hold time
- D. Interface dampening

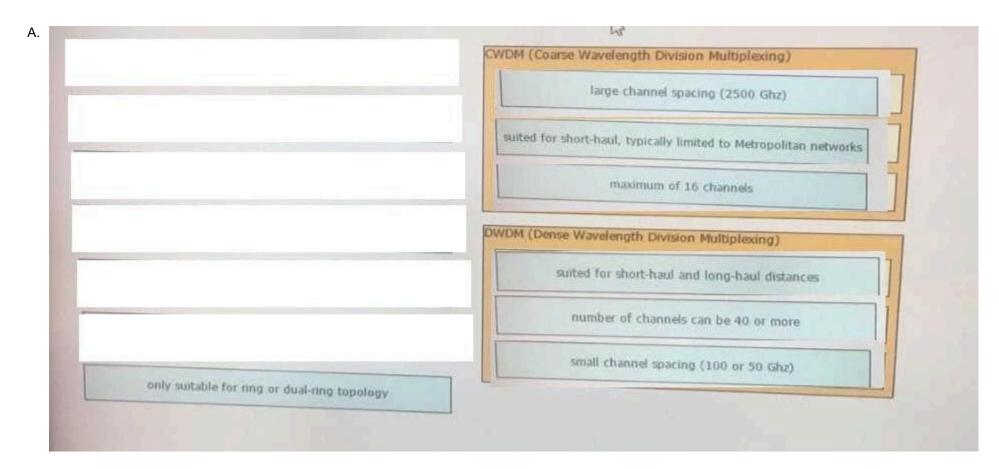
Correct Answer: B

QUESTION 178

Drag and Drop Question

Drag and drop the optical technology design characteristics on the left to the correct optical technologies on the right. Not all options are used.



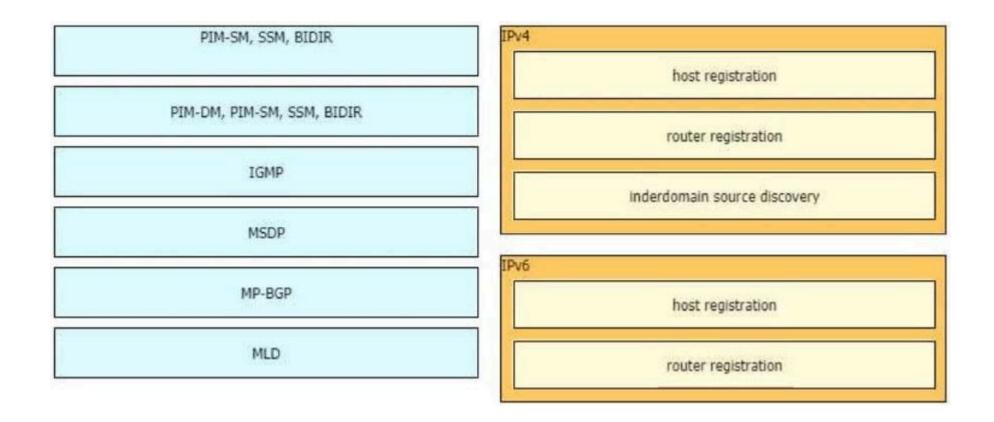


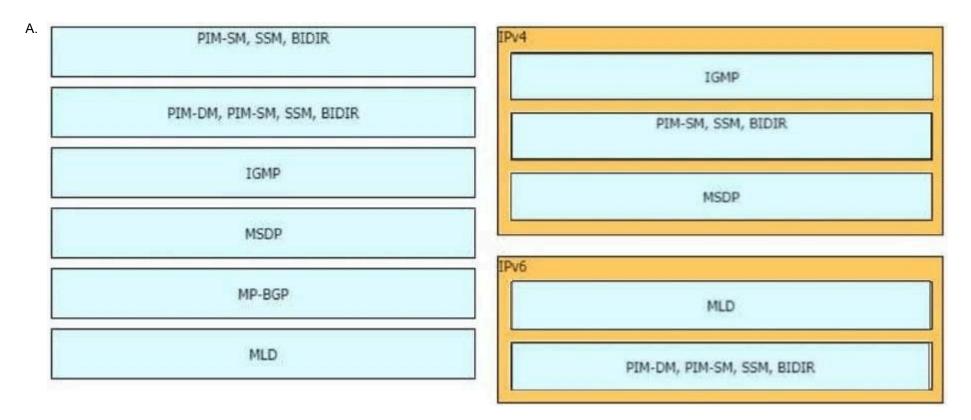
Correct Answer: A

QUESTION 179

Drag and Drop Question

Drag and drop the multicast protocols from the left onto the correct design situations on the right. Not all options are used.





Correct Answer: A

QUESTION 180

What is a disadvantage of the traditional three-tier architecture model when east west traffic between different pods must go through the distribution and core layers?

- A. low bandwidth
- B. security
- C. scalability
- D. high latency

Correct Answer: A

QUESTION 181

Which two actions must merchants do to be compliant with the Payment Card Industry Data Security Standard? (Choose two.)

- A. conduct risk analyses
- B. install firewalls
- C. use antivirus software
- D. establish monitoring policies
- E. establish risk management policies

Correct Answer: BC

QUESTION 182

Which solution component helps to achieve comprehensive threat protection and compliance for migration to multicloud SDX architectures?

- A. system-oriented architecture
- B. OSASE architecture
- C. platform-oriented architecture
- D. SASE architecture

Correct Answer: D

QUESTION 183

What are two descriptions of network optimization? (Choose two.)

- A. identify network requirements
- B. network redesign
- C. proactive network management
- D. network health maintenance
- E. maintain high availability

Correct Answer: DE

QUESTION 184

An engineer is designing the QoS strategy for Company XYZ. Based on initial analysis, a lot of scavenger type of traffic is traversing the network's 20Mb Internet link toward the service provider. The new design must use a QoS technique that limits scavenger traffic to 2 Mbps, which helps avoid oversubscription of the link during times of congestion. Which QoS technique can be used to facilitate this requirement?

- A. class-based traffic policing
- B. class-based traffic shaping
- C. CBWFQ
- D. LLQ

Correct Answer: C

QUESTION 185

A legacy enterprise is using a Service Provider MPLS network to connect its head office and branches. Recently, they added a new branch to their network. Due to physical security concerns, they want to extend their existing IP CCTV network of the head office to the new branch, without any routing changes in the network. They are also under some time constraints. What is the best approach to extend the existing IP CCTV network to the new branch, without incurring any IP address changes?

- A. GRE
- B. L2TPv3
- C. VXLAN
- D. EoMPLS

Correct Answer: B

QUESTION 186

Identity and access management between multiple users and multiple applications has become a mandatory requirement for Company XYZ to fight against ever increasing cybersecurity threats. To achieve this, federated identity services have been deployed in the Company XYZ network to provide single sign-on and Multi-Factor Authentication for the applications and services. Which protocol can be used by Company XYZ to provide authentication and authorization services?

- A. OAuth2
- B. OpenID Connect
- C. OpenID
- D. SAML 2.0

Correct Answer: D

QUESTION 187

A network security team uses a purpose-built tool to actively monitor the campus network, applications, and user activity. The team also analyzes enterprise telemetry data from IPFIX data records that are received from devices in the campus network. Which action can be taken based on the augmented data?

- A. reduction in time to detect and respond to threats
- B. integration with an incident response plan
- C. adoption and improvement of threat-detection response
- D. asset identification and grouping decisions

Correct Answer: A

QUESTION 188

An enterprise has identified these causes for inefficient CAPEX spending:

- CAPEX planning is driven by technology and not by business objectives.
- The CAPEX planning team lacks the data it needs to perform due diligence tasks.
- The organizational structure lacks sufficient accountability and incentives.

Which corporate cultural change contributes to improving the effectiveness of CAPEX spending?

- A. Build a financial control function that delivers high-quality reports on operational expenses for business insight and financial reporting.
- B. CxO-level staff must have a full technical understanding but the should not trust their technical leaders fully.
- C. Adopt new organizational models that promote real accountability for ROI, not just revenue, EBITDA, and cash.
- D. Marketing and product management divisions must reduce their CAPEX budgets significantly to drive the change.

Correct Answer: C

QUESTION 189

Which design solution reduces the amount of IGMP state in the network?

- A. one multicast group address thorough network regardless of IGMP version
- B. multiple multicast domains
- C. IGMP filtering
- D. IGMPv3 with PIM-SSM

Correct Answer: C

QUESTION 190

Company XYZ wants design recommendations for Layer 2 redundancy (using Layer 2 technologies). The company wants to prioritize flexibility and scalability elements in the new design. Which two technologies help meet these requirements? (Choose two.)

- A. Configure DHCP snooping on the switches
- B. Use switch clustering at the distribution layer where possible
- C. Use Unidirectional Link Detection
- D. Avoid stretching VLANs across switches
- E. Use root guard

Correct Answer: CE

QUESTION 191

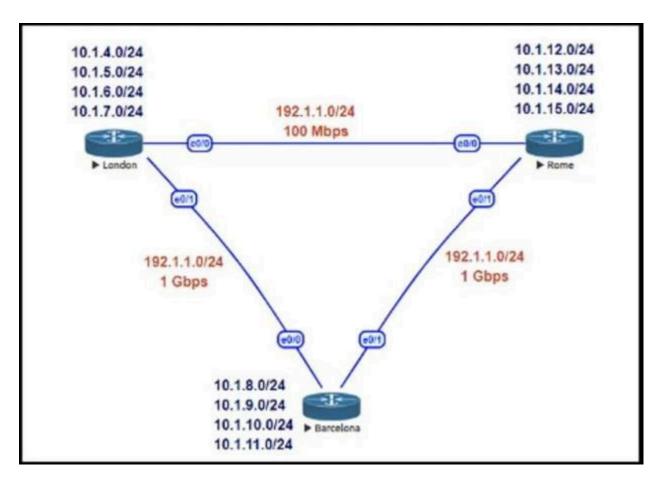
Which action must be taken before new VoIP systems are implemented on a network to ensure that the network is ready to handle the traffic?

- A. Evaluate bandwidth utilization and connection quality
- B. Enable special requirements such as direct DID lines on pickup
- C. Make recommendations to limit the size of the half-open session table on routers
- D. Check if anomaly detection is enabled for SIP and H.323 on Layer 3 devices

Correct Answer: B

QUESTION 192

Refer to the exhibit. This network is running EIGRP as the routing protocol and the internal networks are being advertised in EIGRP. Based on the link speeds, all traffic between London and Rome is getting propagated via Barcelona and the direct link between London and Rome is not being utilized under normal working circumstances. The EIGRP design should allow for efficiency in the routing table by minimizing the routes being exchanged. The link between London and Rome should be utilized for specific routes. Which two steps accomplish this task? (Choose two.)



- A. Configure EIGRP route summarization on all the interfaces to summarize the internal LAN routes
- B. Filter the routes on the link between London and Barcelona
- C. Filter the routes on the link between London and Rome
- D. Configure route leaking of summary routes on the link between London and Rome

Correct Answer: AD

QUESTION 193

What are two top cloud-native security challenges faced by today's cloud-oriented organizations? (Choose two.)

A. polymorphism

- B. lack of visibility and tracking
- C. establishing user roles
- D. increased attack surface
- E. user credential validation

Correct Answer: BD

QUESTION 194

In the case of outsourced IT services, the RTO is defined within the SLA. Which two support terms are often included in the SLA by IT and other service providers? (Choose two.)

- A. resolution time
- B. network reliability
- C. network size and cost
- D. network sustainability
- E. support availability

Correct Answer: AE

QUESTION 195

Which two statements explain the operation of BFD asynchronous mode? (Choose two.)

- A. BFD asynchronous mode with echo packets uses separate control packets and echo packets
- B. BFD asynchronous mode with and without echo packets use control packets
- C. BFD asynchronous mode with echo packets combines the control packets and echo packets into a single packet
- D. BFD asynchronous without echo packets has control packets sent back to the originating router, which echoes the control packet to detect failures
- E. BFD asynchronous mode without echo packets uses control packets, and BFD asynchronous mode with echo packets does not

Correct Answer: AB

QUESTION 196

Various teams in different organizations within an enterprise are preparing low-level design documents to capture network parameters using a Waterfall project model:

- hardware sizing and power consumption
- Layer 2 and layer 3 services parameters
- configuration of all control plane protocols

Input from relevant stakeholders was captured at the start of the project, and the project scope has been defined based on the parameters above. What impact will it have on documentation and project deliverables if the stakeholders ask to have changes earned out in the network before the information

has been captured?

- A. Significant effort and time are required
- B. Rework is expected before the delivery
- C. This provides more opportunity to think outside the box
- D. This provides a flexible approach to incorporate changes

Correct Answer: B

QUESTION 197

Which two benefits can software defined networks provide to businesses? (Choose two.)

- A. provides additional redundancy
- B. decentralized management
- C. reduced latency
- D. enables innovation
- E. reduction of OpEx/CapEx
- F. meets high traffic demands

Correct Answer: DE

QUESTION 198

Company XYZ is migrating their existing network to IPv6 and they must plan for Layer 2 and Layer 3 devices. Some of the access layer switches do not support IPv6, however, core and distribution switches fully support unicast and multicast routing. The company wants to minimize cost of the migration. Which migration strategy should be used in the design?

- A. The access layer switches must support IGMP snooping at a minimum. Any switches that do not support IGM snooping must be replaced.
- B. The access layer switches must support DHCPv6. Any switches that do not support DHCPv6 must be replaced.
- C. Upgrade the nonsupporting switches. Otherwise, it will cause an issue with the migration.
- D. Layer 2 switches will not affect the implementation of IPv6. They can be included in the design in their current state.

Correct Answer: D

QUESTION 199

Which two features describe controller-based networking solutions compared to traditional networking solutions? (Choose two.)

- A. inflate licensing costs
- B. reduce network configuration complexity
- C. provide centralization of primary IT functions

D. allow for fewer network failures

E. increase network bandwidth usage

Correct Answer: BC

QUESTION 200

Which two characteristics are associated with 802.1s? (Choose two.)

A. 802.1s provides for faster convergence over 802.1D and PVST+

B. 802.1s is a Cisco enhancement to 802.1w

C. 802.1s supports up to 1024 instances of 802.1w

D. 802.1s maps multiple VLANs to the same spanning-tree instance

E. CPU and memory requirements are the highest of all spanning-tree STP implementations

Correct Answer: AD

QUESTION 201

What are two advantages of controller-based networks versus traditional networks? (Choose two.)

A. more consistent device configuration

B. the ability to have forwarding tables at each device

C. programmatic APIs that are available per device

D. the ability to configure the features for the network rather than per device

E. more flexible configuration per device

Correct Answer: AD

QUESTION 202

What are two design constraints in a standard spine and leaf architecture? (Choose two.)

A. Spine switches can connect to each other

B. Endpoints connect only to the spine switches

C. Each spine switch must connect to every leaf switch

D. Leaf switches must connect to each other

E. Each leaf switch must connect to every spine switch

Correct Answer: CE

QUESTION 203

What is a description of a control plane action?

- A. de-encapsulating and re-encapsulating a packet in a data-link frame
- B. matching the destination MAC address of an Ethernet frame to the MAC address table
- C. matching the destination IP address of an IP packet to the IP routing table
- D. hosts locating routers that reside on attached links using the IPv6 Neighbor Discover Protocol

Correct Answer: D

QUESTION 204

A network architect in an enterprise is designing a network policy for certain database applications. The goal of the policy is to allow these applications to access the internet directly, whereas other user and network applications that communicate with systems or users outside their own network must be routed through the data center. The focus is on achieving higher availability and a better user experience for the database applications, but switching between different network paths based on performance characteristics must be supported.

Which solution meets these requirements?

- A. MPLS direct connect
- B. Cloud onRamp for SaaS
- C. Cloud onRamp for laaS
- D. MPLS L3VPN with QoS

Correct Answer: C

QUESTION 205

Which two statements describe network automation and network orchestration? (Choose two.)

- A. Provisioning network services is an example of network automation
- B. Network orchestration is used to run single, low-level tasks without human intervention
- C. Network automation does not provide governance or policy management
- D. Network automation spans multiple network services, vendors, and environments
- E. Network orchestration is done through programmatic REST APIs enabling automation across devices and management platforms

Correct Answer: CE

QUESTION 206

When an SDN-based model is used to transmit multimedia traffic, which aspect should an architect consider while designing the network?

- A. security
- B. QoE estimation

- C. traffic patterns
- D. flow forwarding

Correct Answer: B

QUESTION 207

A customer has a functional requirement that states HR systems within a data center should be segmented from other systems that reside in the same data center and same VLAN. The systems run legacy applications by using hard-coded IP addresses with all HR systems dedicated to .129 to .254 of the 10.20.20.0/24 prefix. Which segmentation method is optimal for the customer?

- A. data center perimeter firewalling
- B. routed firewalls
- C. VACLs on data center switches
- D. ACLs on data center switches

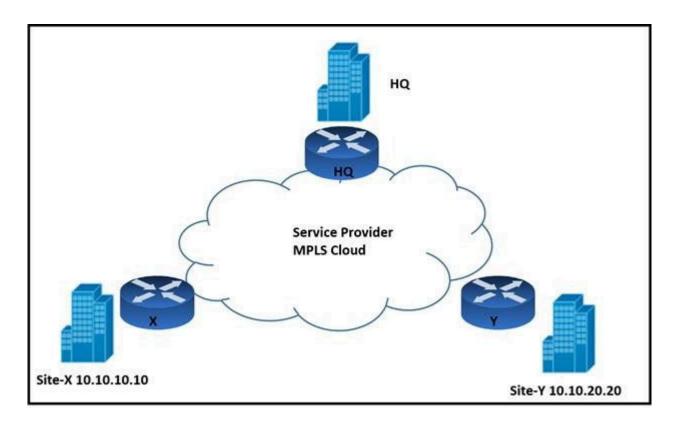
Correct Answer: C

QUESTION 208

Refer to the exhibit. An architect must design an enterprise WAN that connects the headquarters with 22 branch offices. The number of remote sites is expected to triple in the next three years. The final solution must comply with these requirements:

- Only the loopback address of each of the enterprise CE X and Y routers must be advertised to the interconnecting service provider cloud network.
- The transport layer must carry the VPNv4 label and VPN payload over the MP-BGP control plane.
- The transport layer must not be under service provider control.

Which enterprise WAN transport virtualization technique meets the requirements?



- A. EIGRP Over the Top
- B. MPLS over BGP over multipoint GRE
- C. DMVPN per VRF
- D. point-to-point GRE per VRF

Correct Answer: B

QUESTION 209

Router R1 is a BGP speaker with one peering neighbor over link "A". When the R1 link/interface "A" fails, routing announcements are terminated, which results in the tearing down of the state for all BGP routes at each end of the link. What is this a good example of?

- A. fault isolation
- B. resiliency
- C. redundancy

D. fate sharing

Correct Answer: D

QUESTION 210

An architect receives a functional requirement for a NAC system from a customer security policy stating that if a corporate Wi-Fi device does not meet current AV definitions, then it cannot access the corporate network until the definitions are updated. Which component should be built into the NAC design?

- A. posture assessment with remediation VLAN
- B. quarantine SGTs
- C. dACLs with SGTs
- D. quarantine VLAN

Correct Answer: A

QUESTION 211

Which solution component helps to achieve rapid migration to the cloud for SaaS and public cloud leveraging SD-WAN capabilities?

- A. service-oriented cloud architecture
- B. Cloud onramp
- C. cloud registry
- D. microservices in the cloud

Correct Answer: B

QUESTION 212

A company uses equipment from multiple vendors in a data center fabric to deliver SDN, enable maximum flexibility, and provide the best return on investment. Which YANG data model should be adopted for comprehensive features to simplify and streamline automation for the SDN fabric?

- A. proprietary
- B. OpenConfig
- C. native
- D. IETF

Correct Answer: B

QUESTION 213

Which development model is closely associated with Agile project management?

- A. lifecycle model
- B. starfish model
- C. static model
- D. evolutionary delivery model

Correct Answer: D

QUESTION 214

Company XYZ wants to use the FCAPS ISO standard for network management design. The focus of the design should be to minimize network outages by employing a set of procedures and activities to detect and isolate network issues and the appropriate corrective actions to overcome current issues and prevent them from occurring again. Which layer accomplishes this design requirement?

- A. fault management
- B. accounting management
- C. security management
- D. performance management

Correct Answer: A

QUESTION 215

A business wants to refresh its legacy Frame Relay WAN. It currently has product specialists in each of its 200 branches but plans to reduce and consolidate resources. The goal is to have product specialists available via video link when customers visit the nationwide branch offices. Which technology should be used to meet this objective?

- A. DMVPN phase 1 network over the Internet
- B. Layer 3 MPLS VPN hub and spoke
- C. Layer 2 VPLS
- D. Layer 3 MPLS VPN full mesh

Correct Answer: D

QUESTION 216

Which development model is closely associated with traditional project management?

- A. Agile model
- B. lifecycle model
- C. static model
- D. evolutionary delivery model

Correct Answer: B

QUESTION 217

You are designing the QoS policy for a company that is running many TCP-based applications. The company is experiencing tail drops for these applications. The company wants to use a congestion avoidance technique for these applications. Which QoS strategy can be used to fulfill the requirement?

- A. weighted fair queuing
- B. weighted random early detection
- C. first-in first-out
- D. low-latency queuing

Correct Answer: B

QUESTION 218

Which technology supports antispoofing and does not have any impact on encryption performance regardless of packet size?

- A. MACsec
- B. IP source guard
- C. DHCP snooping with DAI
- D. IPsec

Correct Answer: A

QUESTION 219

Which three components are part of the foundational information security principles of the CIA triad? (Choose three.)

- A. cryptography
- B. confidentiality
- C. authorization
- D. identification
- E. integrity
- F. availability

Correct Answer: BEF

QUESTION 220

What is an architectural framework created by ETSI that defines standards to decouple network functions from proprietary hardware-based appliances and have them run in software on standard x86 servers?

- A. NPIV
- B. NFVIS
- C. NFV
- D. VNF

Correct Answer: C

QUESTION 221

Which two features are advantages of SD-WAN compared to MPLS-based connectivity? (Choose two.)

- A. uses FEC constructs for traffic forwarding, thereby improving efficiency
- B. separates infrastructure and policy
- C. uses policy-based forwarding of real-time traffic with less complexity
- D. unifies the WAN backbone
- E. manages failures through backup links

Correct Answer: CD

QUESTION 222

Which two factors must be considered for high availability in campus LAN designs to mitigate concerns about unavailability of network resources? (Choose two.)

- A. device resiliency
- B. device type
- C. network type
- D. network resiliency
- E. network size

Correct Answer: AD

QUESTION 223

A key to maintaining a highly available network is building in the appropriate redundancy to protect against failure. This redundancy is carefully balanced with the inherent complexity of redundant systems. Which design consideration is relevant for enterprise WAN use cases when it comes to resiliency?

- A. Design in a way that expects outages and attacks on the network and its protected resources
- B. The design approach should consider simple and centralized management aspect
- C. Design in a way that it simplifies and improves ease of deployment
- D. Design automation tools wherever it is appropriate for greater visibility

Correct Answer: A

QUESTION 224

Company XYZ is designing the IS-IS deployment strategy for their multiarea IS-IS domain. They want IS-IS neighbor relationships to be minimized on each network segment and want to optimize the size of the IS-IS LSDB on each router. Which can design can be used to meet these requirements?

- A. Design all routers as Level 2 routers. Set the links between the routers as Level 1 with the area
- B. Design the network so that the routers connecting to other areas are Level 2 routers and internal routers are Level 1
- C. Design the network so that all routers are Level 1 routers
- D. Design the network so that the routers connecting to other areas are Level 1/Level 2 routers and internal routers are Level 1

Correct Answer: D

QUESTION 225

An international media provider is an early adopter of Docker and micro services and is using an open-source homegrown container orchestration system. A few years ago. they migrated from on-premises data centers to the cloud. Now they are faced with challenges related to management of the deployed services with their current homegrown orchestration system.

Which platform is well-suited as a state-aware orchestration system?

- A. Kubernetes
- B. Puppet
- C. Ansible
- D. Terraform

Correct Answer: A

QUESTION 226

An engineer must design a network for a company that uses OSPF LFA to reduce loops. Which type of loop would be reduced by using this design?

- A. DTP
- B. micro loops
- C. STP
- D. REP

Correct Answer: B

QUESTION 227

An engineer is designing a DMVPN network where OSPF has been chosen as the routing protocol. A spoke-to-spoke data propagation model must be set up. Which two design considerations must be taken into account? (Choose two.)

- A. The hub should be the DR by changing the priority of the spokes to 0
- B. The hub should be set as the DR by specifying the priority to 255
- C. The network type on all sites should be point-to-multipoint
- D. The network type should be point-to-multipoint for the hub and point-to-point for the spokes
- E. Configure all the sites as network type broadcast

Correct Answer: AE

QUESTION 228

Company XYZ is designing their network using the three-layer hierarchical model. At which layer must the QoS design classify or mark the traffic?

- A. access
- B. distribution
- C. core
- D. collapsed core

Correct Answer: A

QUESTION 229

The controller has a global view of the network, and it can easily ensure that the network is in a consistent and optimal configuration. Which two statements describe a centralized SDN control path? (Choose two.)

- A. It significantly improves the latency when performing reactive handling of PACKET_IN events
- B. Integrating smart NIC capabilities on the local host level is made easier through rest APIs
- C. A centralized controller can support all southbound APIs, which allows for easy integration with legacy equipment
- D. It is highly-available by design with no single-point-of-failure risks present
- E. Scaling of the centralized controller cluster is challenging for services like DHCP and load-balancing

Correct Answer: CE

QUESTION 230

Company XYZ uses an office model where the employees can use any open desk and plug their laptops in. They want to authenticate the end users using their domain username and password before allowing them access to the network. The design must also accommodate the ability of controlling traffic within the same group or subnet if a macro (or micro) segmentation-based model is adopted in the future. Which protocol can be recommended for this design to authenticate end users?

- A. LDAP
- B. EAP

C. TACACS+

D. RADIUS

Correct Answer: B

QUESTION 231

An architect receives a business requirement from a CTO that states the RTO for a new system should be 4 hours, and the RPO should be less than 1 hour. Business continuity must also be ensured in the event of a natural disaster. Which replication method and data center technology should be used?

- A. asynchronous replication over dual data centers via DWDM
- B. asynchronous replication over geographically dispersed dual data centers via CWDM
- C. synchronous replication over dual data centers via Metro Ethernet
- D. synchronous replication over geographically dispersed dual data centers via MPLS

Correct Answer: D

QUESTION 232

A business customer deploys workloads in the public cloud. Now the customer network faces governance issues with the flow of IT traffic and must ensure the security of data and intellectual property. Which action helps to identify the issue for further resolution?

- A. Set up a secure tunnel from customer routers to ensure that traffic is protected as it travels to the cloud service providers
- B. Send IPFIX telemetry data from customer routers to a centralized collector to identify traffic to cloud service providers
- C. Build a zone-based firewall policy on Internet edge firewalls that collects statistics on traffic sent to cloud service providers
- D. Apply workload policies that dictate the security requirements to the workloads that are placed in the cloud

Correct Answer: B

QUESTION 233

A UK-based private hospital group with various levels of systems security considers upgrading its IT systems to increase performance and workload flexibility in response to constantly changing requirements. The CTO wants to reduce capital expenses and adopt the lowest-cost technology. Which technology choice is suitable?

- A. public cloud
- B. hybrid cloud
- C. on premises
- D. private cloud

Correct Answer: B

QUESTION 234

Company XYZ wants to redesign the Layer 2 part of their network and wants to use all available uplinks for increased performance. They also want to have end host reachability supporting conversational learning. However, due to design constraints, they cannot implement port-channel on the uplinks. Which other technique can be used to make sure the uplinks are in active/active state?

- A. TRILL
- B. LISP
- C. MSTP
- D. switch stack

Correct Answer: B

QUESTION 235

Company XYZ was not satisfied with the reconvergence time OSPF is taking. BFD was implemented to try to reduce the reconvergence time, but the network is still experiencing delays when having to reconverge. Which technology will improve the design?

- A. OSPF fast hellos
- B. BFD echo
- C. Change the protocol to BGP
- D. Change the OSPF hello and dead intervals

Correct Answer: B

QUESTION 236

An enterprise plans to evolve from a traditional WAN network to a software-defined WAN network. The existing devices have limited capability when it comes to virtualization. As the migration is carried out, enterprise applications and services must not experience any traffic impact. Which implementation plan can be used to accommodate this during the migration phase?

- A. Deploy controllers, deploy SD-WAN edge routers. In the data center, and migrate branch sites.
- B. Migrate data center WAN routers, migrate branch sites, and deploy SD-WAN edge routers.
- C. Migrate branch sites, migrate data center WAN routers, and deploy controllers.
- D. Deploy SD-WAN edge routers in the data center, deploy controllers, and migrate branch sites

Correct Answer: A

QUESTION 237

A security architect receives reports of these incidents:

- An attacker exploits printers and medical devices in the organization to gain control of the network.
- An attacker disrupts operations through attacks on networked business infrastructure.

What is the next step to address these issues after discovery and classification of devices?

- A. Ensure trustworthiness of devices
- B. Assess continuous security health monitoring
- C. Apply a context-based network access control policy
- D. Enforce risk-based and adaptive access policies

Correct Answer: C

QUESTION 238

Which two protocols are used by SDN controllers to communicate with switches and routers? (Choose two.)

- A. NetFlash
- B. NetFlow
- C. Open vSwitch Database
- D. OpenFlash
- E. OpenFlow

Correct Answer: CE

QUESTION 239

Which SDN architecture component is used by the application layer to communicate with the control plane layer to provide instructions about the resources required by applications?

- A. southbound APIs
- B. northbound APIs
- C. orchestration layer
- D. SDN controller

Correct Answer: B

QUESTION 240

Hybrid cloud computing allows organizations to take advantage of public and private cloud models. Which best practice should organizations follow to ensure data security in the private cloud?

- A. Use standard protocols for data transmission over the network
- B. Use standard network protocols for data communication between unsecured network connections
- C. Communicate all data security risks to customers and end users
- D. Encrypt data when it is at rest and in motion

Correct Answer: D

QUESTION 241

A customer has a functional requirement that states HR systems within a data center should be segmented from other systems that reside in the same data center and same VLAN. The systems run legacy applications by using hard-coded IP addresses. Which segmentation method is suitable and scalable for the customer?

- A. data center perimeter firewalling
- B. routed firewalls
- C. VACLs on data center switches
- D. transparent firewalling

Correct Answer: C

QUESTION 242

Which feature is supported by NETCONF but is not supported by SNMP?

- A. distinguishing between configuration data and operational data
- B. taking administrative actions
- C. collecting the status of specific fields
- D. changing the configuration of specific fields

Correct Answer: A

QUESTION 243

Two routers R1 and R2 are directly connected through an Ethernet link. Both routers are running OSPF over the Ethernet link and OSPF has been registered with BFD. R1 has been set up to transmit BFD at a 50 ms interval, but R2 can receive only at a 100 ms rate due to platform limitations. What does this mean?

- A. After the initial timer exchange, R2 sets its transmission rate to the R1 Desired Min TX interval
- B. After the initial timer exchange, R1 sets its transmission rate to the R2 Required Min RX interval
- C. Timers renegotiate indefinitely, so the timer exchange phase never converges
- D. R2 sets the P-bit on all BFD control packets until R2 sends a packet with the F-bit set

Correct Answer: B

QUESTION 244

Which extensions to GRE tunneling provide session tracking and in-order packet delivery in exchange for additional state stored in tunnel endpoints?

A. GRE Key and Sequence number extensions

- B. GRE Protocol Type and Checksum extension fields
- C. GRE Version and Reserved0 extension fields
- D. No extension fields are available in the GRE header to track session data and packet sequences

Correct Answer: A

QUESTION 245

In search of a system capable of hosting, monitoring compiling, and testing code in an automated way, what can be recommended to the organization?

- A. Jenkins
- B. Ansible
- C. Perl
- D. Chef

Correct Answer: A

QUESTION 246

An enterprise solution team is performing an analysis of multilayer architecture and multicontroller SDN solutions for multisite deployments. The analysis focuses on the ability to run tasks on any controller via a standardized interface. Which requirement addresses this ability on a multicontroller platform?

- A. Build direct physical connectivity between different controllers
- B. Use the East-West API to facilitate replication between controllers within a cluster
- C. Use OpenFlow to implement and adapt new protocols
- D. Deploy a root controller to gather a complete network-level view

Correct Answer: C

QUESTION 247

A product manufacturing organization is integrating cloud services into their IT solution. The IT team is working on the preparation phase of the implementation approach, which includes the Define Strategy step. This step defines the scope of IT, the application, and the service. What is one topic that should be considered in the Define Strategy step?

- A. due diligence and financial scenarios
- B. innovate and align with business according to volume
- C. contingency exit strategy steps
- D. financial and governance models

Correct Answer: C

QUESTION 248

A banking customer determines that it is operating POS and POI terminals that are noncompliant with PCI DSS requirements, as it is running TLSv1.0. The customer plans to migrate the terminals to TLSv1.2. What are two requirements to complete the migration? (Choose two.)

- A. Ensure that strong cryptography is applied for users who have administrative access through networks
- B. Apply strong cryptography and security protocols to safeguard sensitive cardholder data.
- C. Apply strong encryption for transmission of cardholder data across public networks.
- D. Protect all user systems against malware and frequently update antivirus software
- E. Maintain a policy that addresses information security for employees and third parties.

Correct Answer: BC

QUESTION 249

Agile and Waterfall are two popular methods for organizing projects. What describes any Agile network design development process?

- A. working design over comprehensive documentation
- B. contract negotiation over customer collaboration
- C. processes and tools over individuals and interactions over time
- D. following a plan over responding to change

Correct Answer: A

QUESTION 250

A business invests in SDN and develops its own SDN controller that, due to budget constraints, runs on a single controller. The controller actively places an exclusive lock on the configuration of the devices to ensure it is the only source of changes to the environment. What is the result if the controller fails?

- A. Manual changes are only possible until the controller is restored
- B. All device configurations are in read-only mode until the controller is restored
- C. The control plane is unavailable until the controller is restored
- D. If a device fails, the configuration backup is unavailable

Correct Answer: C

QUESTION 251

A network attacker exploits application flaws to compromise critical systems in the organization with these objectives:

- Obtain sensitive data and export the data out of the network
- Compromise developer and administrator credentials to potentially gain access

What is the next step after application discovery is completed in Zero Trust networking?

- A. Enforce policies and microsegmentation
- B. Establish visibility and behavior modeling
- C. Ensure trustworthiness of systems
- D. Assess real-time security health

Correct Answer: B

QUESTION 252

Company XYZ must design a strategy to protect their routers from DoS attacks such as traffic destined to the router's own route processor, using separate control plane categories. Which two capabilities can be used to achieve this requirement? (Choose two.)

- A. Control Plane Protection using queue thresholding on the transit subinterface
- B. Control Plane Protection using queue thresholding on the host subinterface
- C. Control Plane Protection using port filtering on the host subinterface
- D. Control Plane Protection using port filtering on the transit subinterface
- E. Control Plane Protection using port filtering on the main interface

Correct Answer: BC

QUESTION 253

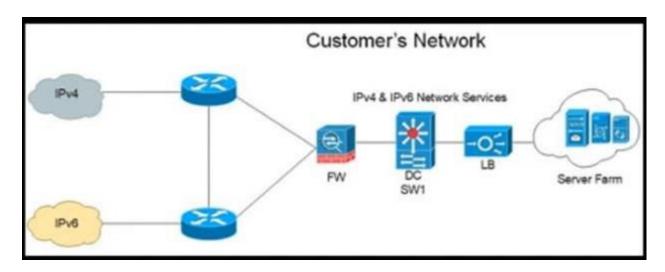
What statement describes the application layer as defined in the software-defined networking architecture?

- A. This layer is responsible for handling packets based on the rules provided by the controller
- B. This layer is responsible for collecting the network status such as network usage and topology
- C. This layer contains programs that communicate their desired network behavior to controllers
- D. This layer processes the instructions and requirements sent by networking components

Correct Answer: C

QUESTION 254

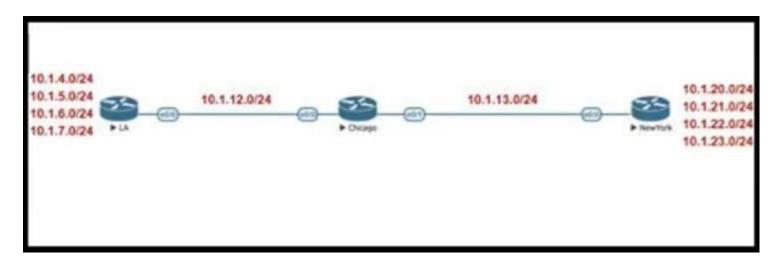
Refer to the exhibit. Company XYZ is currently running IPv4 but has decided to start the transition into IPv6. The initial objective is to allow communication based on IPv6 wherever possible and there should still be support in place for devices that only support IPv4. These devices must be able to communicate to IPv6 devices as well. Which solution must be part of the design?



- A. address family translation
- B. host-to-host tunneling
- C. dual stack
- D. 6rd tunneling

QUESTION 255

Refer to the exhibit. Company XYZ BGP topology is as shown in the diagram. The interface on the LA router connected toward the 10.1.5.0/24 network is faulty and is going up and down, which affects the entire routing domain. Which routing technique can the network administrator use so that the rest of the network is not affected by the flapping issue?



- A. The LA administrator should use route dampening for the 10.1.5.0/24 network so that it does not get propagated when it flaps up and down.
- B. The Chicago administrator should use route filtering to block the 10.1.5.0/24 network from coming in from the LA router.
- C. The LA administrator should use route aggregation to summarize the 10.1.4.0/24, 10.1.5 0/24, 10.1.6.0/24, and 10.1.7.0/24 networks toward Chicago.
- D. The LA administrator should use route filtering to block the 10.1.5.0/24 network from getting propagated toward Chicago and New York.

QUESTION 256

Which two factors provide multifactor authentication for secure access to applications and data no matter where the users are or which devices they are on? (Choose two.)

- A. possession-based
- B. pull-based
- C. push-based
- D. power-based
- E. persona-based

Correct Answer: AC

QUESTION 257

During evaluation of migrating current on-premises infrastructure to add cloud-based infrastructure, a network planning team must meet three core requirements as they make recommendations on which cloud strategy to adopt going forward.

- Technology is changing rapidly, therefore the enterprise must be open to adopting new ways of doing things, and be ready to invest CapEx- funds in the next three years.
- Network bandwidth capacity requirements are dynamic and are expected to change over the next year.
- If new technologies are to be introduced operational expenses must be kept at a minimum.

Which cloud strategy meets these requirements?

- A. private
- B. hybrid
- C. public
- D. multicloud

Correct Answer: D

QUESTION 258

As a network designer you need to support an enterprise with hundreds of remote sites connected over a single WAN network that carries different types of traffic, including VoIP, video, and data applications, which of following design considerations will not impact design decision?

- A. Focus on the solution instead of the problem, which helps to reduce downtime duration
- B. Identify traffic types and top talkers over this link
- C. The location of the data collection
- D. What direction the data or flows should be metered

Correct Answer: A

QUESTION 259

A business requirement stating that failure of WAN access for dual circuits into an MPLS provider for a Data Centre cannot happen due to related service credits that would need to be paid has led to diversely routed circuits to different points of presence on the providers network. What should a network designer also consider as part of the requirement?

- A. Dual PSUs & Supervisors on each MPLS router
- B. Provision of an additional MPLS provider
- C. Out of band access to the MPLS routers
- D. Ensuring all related remote branches are dual homed to the MPLS network

Correct Answer: B

QUESTION 260

Which methodology is the leading lifecycle approach to network design and implementation?

- A. Waterfall model
- B. PPDIOO
- C. Spiral model
- D. V model

QUESTION 261

An external edge router provides connectivity from a service provider to an enterprise. Which two Internet edge best practices meet compliance regulations? (Choose two.)

- A. Send logs to a centralized logging collection server
- B. Implement EBGP to advertise all owned IP blocks
- C. Enable and use only secure protocols
- D. Implement filtering to control traffic that is sourced from the infrastructure IP space
- E. Use login banners and interface access lists to restrict administrative access to the system

Correct Answer: CE

QUESTION 262

Which service abstracts away the management of the operating system, middleware, and runtime?

- A. laaS
- B. PaaS
- C. SaaS
- D. BMaaS

Correct Answer: B

QUESTION 263

What is a web-based model in which a third-party provider hosts applications that are available to customers over the Internet?

- A. PaaS
- B. WaaS
- C. laaS
- D. SaaS

Correct Answer: D

QUESTION 264

A customer migrates from a traditional Layer 2 data center network into a new SDN-based spine- and-leaf VXLAN EVPN data center within the same location. The networks are joined to enable host migration at Layer 2. Which activity should be completed each time a legacy network is migrated?

- A. The migrated network should be added to the EVPN BGP routing
- B. The migrated network should have a VXLAN VNID configured within the new network
- C. The migrated VLAN should be pruned from the Layer 2 interconnects
- D. The migrated network should be advertised to the EVPN network as a Type 2 network

Correct Answer: D

QUESTION 265

SDN emerged as a technology trend that attracted many industries to move from traditional networks to SDN. Which challenge is solved by SDN for cloud service providers?

- A. need for intelligent traffic monitoring
- B. exponential growth of resource-intensive application
- C. complex and distributed management flow
- D. higher operating expense and capital expenditure

Correct Answer: B

QUESTION 266

Company XYZ connects its sites over a private WAN. Their overlay network is running a DMVPN setup where the headquarters site is the hub. The company is planning on implementing multicast routing on the network. What should be used in the multicast routing design?

- A. PIM dense mode with RP located at the hub
- B. PIM sparse mode with RP located at each remote site
- C. PIM dense mode with RP located at each remote site
- D. PIM sparse mode with RP located at the hub

Correct Answer: B

QUESTION 267

An enterprise wants to provide low-cost delivery of network systems that can be scaled on business demand, followed by an initiative to reduce capital expenses for new IT equipment.

Which technology meets these goals?

- A. laaS within an on-premises location
- B. SaaS within an on-premises location

- C. IaaS within a private cloud
- D. PaaS within a public cloud

QUESTION 268

Which two actions must be taken when assessing an existing wireless network implementation for its readiness to support voice traffic? (Choose two.)

- A. Check for high channel utilization.
- B. Check for high roaming delay
- C. Check for latency over wireless
- D. Check for uniform radio coverage across the floors.
- E. Identify frequent TX power changes

Correct Answer: BD

QUESTION 269

Company XYZ has two routing domains in their network EIGRP and OSPF. The company wants to provide full reachability between the two domains by implementing redistribution on a router running both protocols. They need to design the redistribution in a way that the OSPF routers will see link costs added to external routes. How must the redistribution strategy be designed for this network?

- A. Redistribute using metric type 2 into OSPF
- B. Redistribute using metric type 1 into OSPF
- C. Redistribute using metric type 2 into EIGRP
- D. Redistribute using metric type 1 into EIGRP

Correct Answer: D

QUESTION 270

The administrator of a small branch office wants to implement the Layer 2 network without running STP. The office has some redundant paths. Which mechanism can the administrator use to allow redundancy without creating Layer 2 loops?

- A. Use two port channels as Flex links
- B. Use double-sided VPC on both switches
- C. Use fabric path with ECMP
- D. Use 802.3ad link bundling

Correct Answer: A

QUESTION 271

Company XYZ has a multicast domain that spans across multiple autonomous systems. The company wants to choose a technology that provides a simplified and controlled approach to interconnecting the multicast domains. Which technology is the best fit for this purpose?

- A. PIM SSM
- B. MSDP
- C. PIM sparse mode
- D. MPLS

Correct Answer: B

QUESTION 272

A financial company requires that a custom TCP-based stock-trading application be prioritized over all other traffic for the business due to the associated revenue. The company also requires that VoIP be prioritized for manual trades. Which directive should be followed when a QoS strategy is developed for the business?

- A. Interleave the custom application with other TCP applications in the same CBWFQ queue
- B. Allow VoIP and the custom application to share the same priority queue
- C. Avoid placing the custom application in a CBWFQ queue that contains other UDP applications
- D. The custom application and VoIP must be assigned their own separate priority queue

Correct Answer: A

QUESTION 273

A company requires an RPO of less than 10 seconds to ensure business continuity. Which technology should be deployed?

- A. a single data center with duplicated infrastructure, dual PSUs, and a UPS
- B. geographically dispersed data centers with asynchronous replication
- C. geographically dispersed data centers with synchronous replication
- D. a single data center with duplicated infrastructure and dual PSUs

Correct Answer: C

QUESTION 274

Company XYZ is running BGP as their routing protocol. An external design consultant recommends that TCP path MTU discovery be enabled. Which effect will this have on the network?

- A. It will create a loop free path
- B. It will enhance the performance of TCP-based applications

- C. It will improve the convergence time
- D. It will increase the convergence time

QUESTION 275

Which parameter is the most important factor to consider when deciding service placement in a cloud solution?

- A. data replication cost
- B. security framework Implementation time
- C. application structure
- D. data confidentiality rules

Correct Answer: D

QUESTION 276

Company XYZ branch offices connect to the headquarter sites using two links, MPLS and Internet. The company wants to design the traffic flow so that voice traffic goes through the MPLS link and all other traffic uses either the MPLS link or the Internet link. Which technique can the company use in their design to ensure that the traffic is not process switched?

- A. policy-based routing
- B. floating static route
- C. virtual links
- D. virtualization

Correct Answer: A

QUESTION 277

An architect prepares a network design for a startup company. The design must be able to meet business requirements while the business grows and divests due to rapidly changing markets.

What is the highest priority in this design?

- A. The network should be scalable
- B. The network should be modular
- C. The network should have a dedicated core
- D. The network should be hierarchical

Correct Answer: D

QUESTION 278

Software-defined networking architecture is used for cost-effective, adaptable and easily manageable applications. In which two software-defined networks is SDN commonly used? (Choose two.)

- A. control network
- B. mobile network
- C. wide area network
- D. application network
- E. metro network

Correct Answer: AC

QUESTION 279

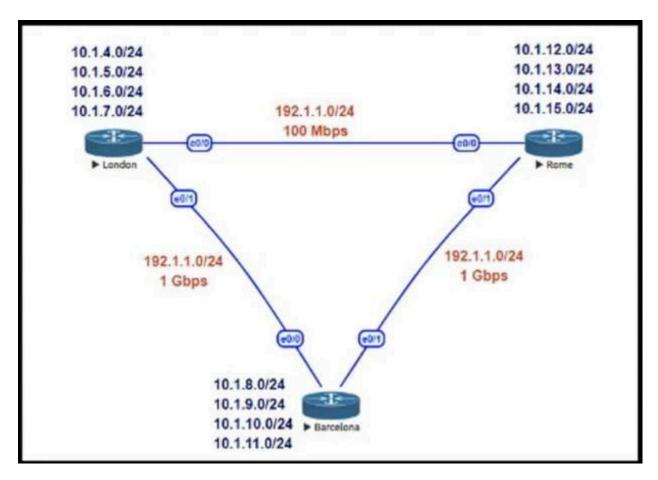
Sometimes SDN leverages various overlay networking technologies to create layer(s) of network abstraction. What describes an overlay network?

- A. It transmits packets that traverse over network devices like switches and routers
- B. It encapsulates packets at source and destination, which incurs additional overhead
- C. Packet delivery and reliability occurs at Layer 3 and Layer 4
- D. It is responsible for the delivery of packets; NAT- or VRF-based segregation is required

Correct Answer: B

QUESTION 280

Refer to the exhibit. This network is running OSPF as the routing protocol. The internal networks are being advertised in OSPF London and Rome are using the direct link to reach each other although the transfer rates are better via Barcelona. Which OSPF design change allows OSPF to calculate the proper costs?



- A. Implement OSPF summarization to fix the issue
- B. Change the OSPF reference bandwidth to accommodate faster links
- C. Filter the routes on the link between London and Rome
- D. Change the interface bandwidth on all the links

QUESTION 281

Company XYZ wants to deploy OSPF. The design plan requires that two OSPF networks be mutually redistributed at multiple locations and ensure end-to-end connectivity to all of the company's networks. Which technology can be used to fulfill the requirements while avoiding the creation of routing loops?

- A. Redistribute routes as external type 2 routes
- B. Create a virtual link between ASBRs
- C. Use route maps on ASBRs to filter routes with tags so they are not redistributed
- D. Change the router ID for both ASBRs

QUESTION 282

Company XYZ has designed their network to run GRE over IPsec on their Internet-based VPN to connect two sites. Which IPsec tunneling feature can they enable to optimize the data flow while ensuring that the headers contain no duplicate IP addresses?

- A. Tunnel Mode in IPsec Phase I
- B. Transport Mode in IPsec Phase I
- C. Transport Mode in IPsec Phase II
- D. Tunnel Mode in IPsec Phase II

Correct Answer: C

QUESTION 283

An IT service provider is upgrading network infrastructure to comply with PCI security standards. The network team finds that 802.1X and VPN authentication based on locally-significant certificates are not available on some legacy phones.

Which workaround solution meets the requirement?

- A. Enable phone VPN authentication based on end-user username and password
- B. Replace legacy phones with new phones because the legacy phones will lose trust if the certificate is renewed
- C. Temporarily allow fallback to TLS 1.0 when using certificates and then upgrade the software on legacy phones
- D. Use authentication-based clear text password with no EAP-MD5 on the legacy phones

Correct Answer: A

QUESTION 284

Which tool automates network implementation activities and shortens the implementation lifecycle?

- A. Python
- B. Conclusion
- C. Java
- D. LISP

QUESTION 285

A network security team observes phishing attacks on a user machine from a remote location. The organization has a policy of saving confidential data on two different systems using different types of authentication. What is the next step to control such events after the security team verifies all users in Zero Trust modeling?

- A. Assess real-time security health of devices
- B. Enforce risk-based and adaptive access policies
- C. Ensure trustworthiness of devices
- D. Apply a context-based network access control policy for users

Correct Answer: A

QUESTION 286

A service provider recently migrated to an SD-WAN solution for delivering WAN connections to its customers. One of the main challenges with the SD-WAN deployment is that branch site volume increases every year, which causes management complexity. Which action resolves the issue?

- A. Set up a dedicated team to monitor and provision new customers
- B. Build a service orchestration platform on top of the network controller
- C. Implement a scalable network management system to manage all sites
- D. Adopt a well-structured SD-WAN service management lifecycle model

Correct Answer: B

QUESTION 287

Company XYZ is revisiting the security design for their data center because they now have a requirement to control traffic within a subnet and implement deep packet inspection. Which technology meets the updated requirements and can be incorporated into the design?

- A. zone-based firewall on the Layer 3 device
- B. routed firewall
- C. transparent firewall
- D. VLAN ACLs on the switch

Correct Answer: B

QUESTION 288

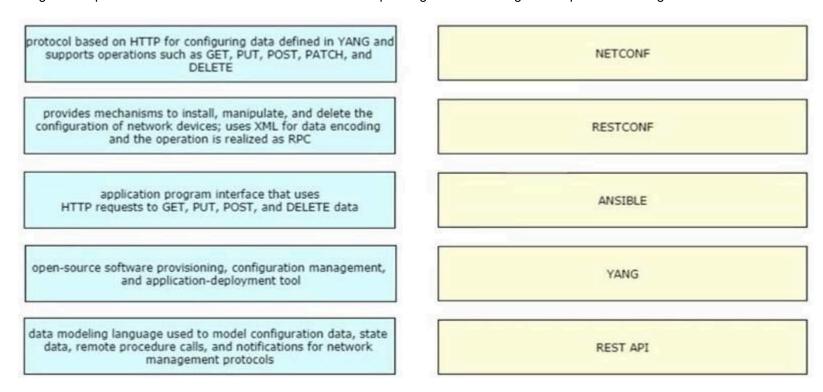
The Layer 3 control plane is the intelligence over the network that steers traffic toward its intended destination. Which two techniques can be used in service provider-style networks to offer a more dynamic, flexible, controlled, and secure control plane design? (Choose two.)

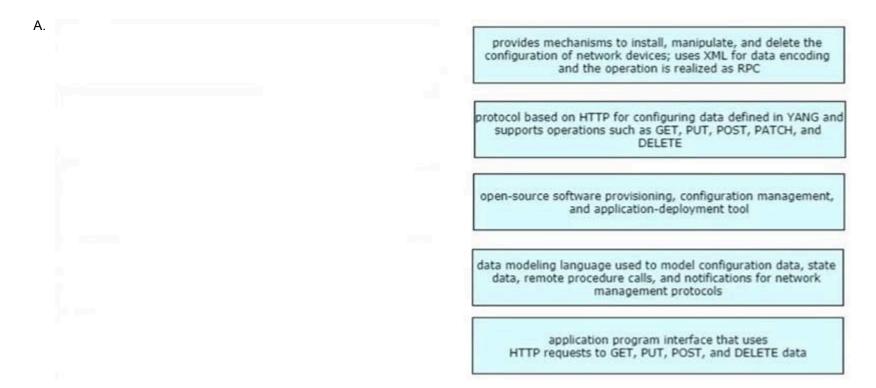
- A. QoS policy propagation with BGP
- B. remote black-holing trigger
- C. prefix lists
- D. access control lists
- E. firewalls

QUESTION 289

Drag and Drop Question

Drag and drop the characteristics from the left onto the corresponding network management options on the right.





QUESTION 290

Drag and Drop Question

The network team in XYZ Corp wants to modernize their infrastructure and is evaluating an implementation and migration plan to allow integration MPLS-based, Layer 2 Ethernet services managed by a service provider to connect branches and remote offices. To decrease OpEx and improve response times when network components fail, XYZ Corp decided to acquire and deploy new routers. The network currently is operated over E1 leased lines (2 Mbps) with a managed CE service provided by the telco.

Drag and drop the implementation steps from the left onto the corresponding targets on the right in the correct order.

	Step 1
Monitor performance of the Ethernet service for a predefined period of time.	Step 2
Decomission E1 leased line.	Step 3
Deployment of new branch routers.	Step 4
Test and validation of SLA parameters in the L2VPN.	Step 5
Migrate E1 to the new Ethernet service.	Step 6
	Deployment of new branch routers.
	To the second se
	Activation of the MPLS-based L2VPN service.
	Activation of the MPLS-based L2VPN service. Test and validation of SLA parameters in the L2VPN Migrate E1 to the new Ethernet service.
	Test and validation of SLA parameters in the L2VPN

QUESTION 291

Drag and Drop Question

An enterprise organization currently provides WAN connectivity to their branch sites using MPLS technology, and the enterprise network team is considering rolling out SD-WAN services for all sites.

With regards to the deployment planning, drag and drop the actions from the left onto the corresponding steps on the right.

Select deployment models between virtual server software and hardware-based SD-WAN appliances.	step 1
Conduct a pilot test to observe and record unexpected issues.	step 2
Make an assessment of running protocols and application usage in the network.	step 3
Evaluate existing circuits and performance to get details of connectivity cost and reliability.	step 4
Layout transport plan based on business prioritizes traffic and the unique bandwidth requirements of each specific application.	step 5
Understand the traffic monitoring requirements and capabilities.	step 6

A.

Make an assessment of running protocols and application usage in the network.

Evaluate existing circuits and performance to get details of connectivity cost and reliability.

Select deployment models between virtual server software and hardware-based SD-WAN appliances.

Layout transport plan based on business prioritizes traffic and the unique bandwidth requirements of each specific application.

Understand the traffic monitoring requirements and capabilities.

Conduct a pilot test to observe and record unexpected issues.

Correct Answer: A

QUESTION 292

Drag and Drop Question

An enterprise wants to migrate an on-premises network to a cloud network, and the design team is finalizing the overall migration process. Drag and drop the options from the left into the correct order on the right.

Identify the right applications and portfolio for cloud migration and cloud viability.	step 1
Maintain data integrity and operational continuity.	step 2
adopt end-to-end approach and transition workloads to the cloud environment.	step 3
Develop cloud strategy and ensure alignment with business requirements.	step 4
ecure the cloud by setting up a secure cloud environment based on the workload requirements.	step 5
Monitor and manage cloud-based systems, including customer services.	step 6

Develop cloud strategy and ensure alignment with business requirements.

Identify the right applications and portfolio for cloud migration and cloud viability.

Secure the cloud by setting up a secure cloud environment based on the workload requirements.

Adopt end-to-end approach and transition workloads to the cloud environment.

Monitor and manage cloud-based systems, including customer services.

Maintain data integrity and operational continuity.

Correct Answer: A