Which two functions are performed by the core layer in a three-tier architecture? (Choose two.)

- **A.** Provide uninterrupted forwarding service
- **B.** Inspect packets for malicious activity
- **C.** Ensure timely data transfer between layers
- **D.** Provide direct connectivity for end user devices
- **E.** Police traffic that is sent to the edge of the network

Answer : **AC**

What is a recommended approach to avoid co-channel congestion while installing access points that use the 2.4 GHz frequency?

- **A.** different nonoverlapping channels
- **B.** one overlapping channel
- **C.** one nonoverlapping channel
- **D.** different overlapping channels

Answer : **A**

A manager asks a network engineer to advise which cloud service models are used so employees do not have to waste their time installing, managing, and updating software that is only used occasionally. Which cloud service model does the engineer recommend?

- **A.** infrastructure-as-a-service
- **B.** platform-as-a-service
- **C.** business process as service to support different types of service
- **D.** software-as-a-service

Answer : **D**

What are two functions of a Layer 2 switch? (Choose two.)

 A. acts as a central point for association and authentication servers

- **B.** selects the best route between networks on a WAN
- **C.** moves packets within a VLAN

- **D.** moves packets between different VLANs
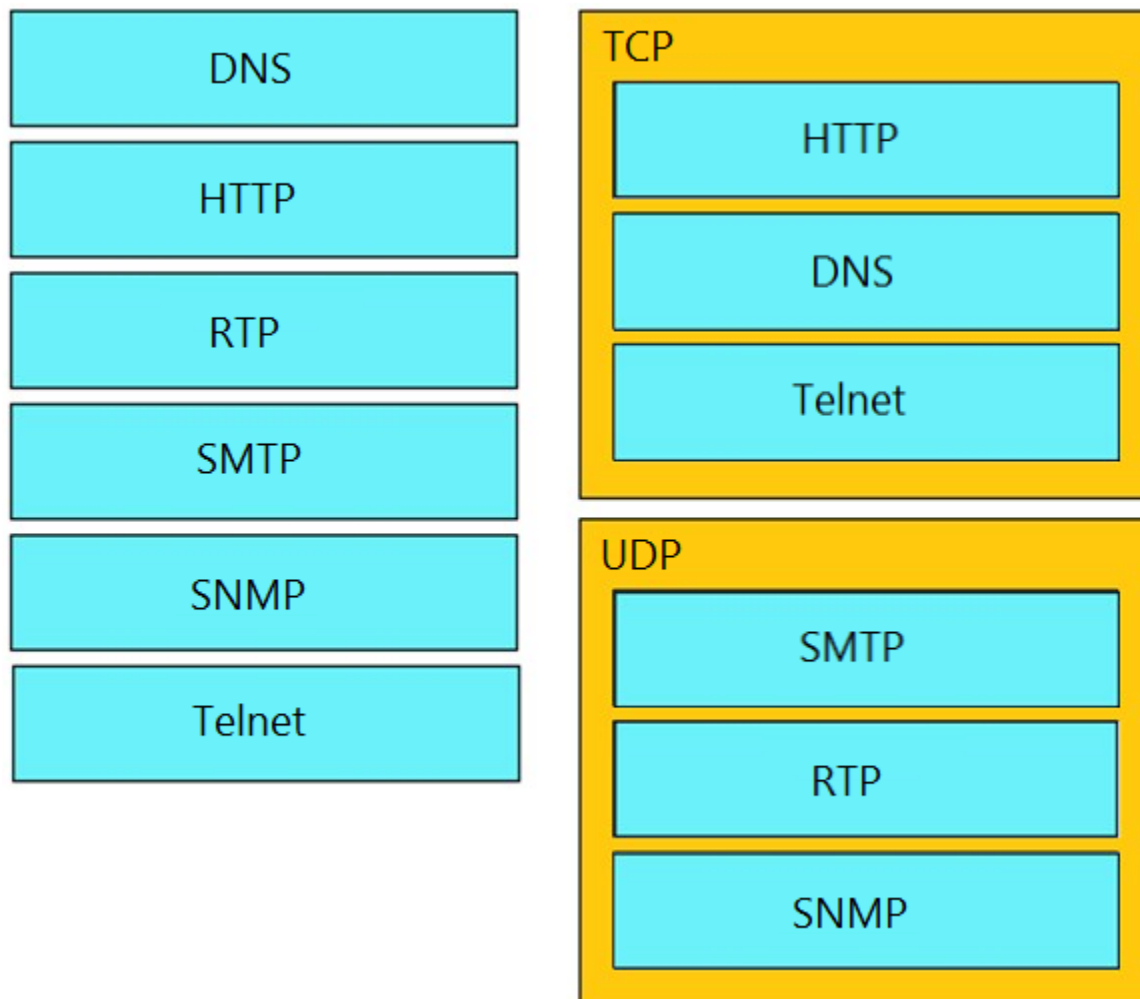- **E.** makes forwarding decisions based on the MAC address of a packet

Answer : **CE**

Question 71 (Single Topic)

DRAG DROP -
Drag and drop the TCP/IP protocols from the left onto their primary transmission protocols on the right.
Select and Place:

DNS	

HTTP	

RTP	

SMTP	

SNMP	

Telnet	

TCP

HTTP

DNS

Telnet

UDP

SMTP

RTP

SNMP

Question 72 (Single Topic)

An engineer observes high usage on the 2.4GHz channels and lower usage on the 5GHz channels. What must be configured to allow clients to preferentially use 5GHz access points?

- **A.** Client Band Select
- **B.** Re-Anchor Roamed Clients
- **C.** OEAP Spilt Tunnel
- **D.** 11ac MU-MIMO

Answer : **A**

Question 73 (Single Topic)

Which networking function occurs on the data plane?

- **A.** processing inbound SSH management traffic
- **B.** sending and receiving OSPF Hello packets
- **C.** facilitates spanning-tree elections
- **D.** forwarding remote client/server traffic

Answer : **D**

Question 74 (Single Topic)

Under which condition is TCP preferred over UDP?

- **A.** UDP is used when low latency is optimal, and TCP is used when latency is tolerable.
- **B.** TCP is used when dropped data is more acceptable, and UDP is used when data is accepted out-of-order.
- **C.** TCP is used when data reliability is critical, and UDP is used when missing packets are acceptable.
- **D.** UDP is used when data is highly interactive, and TCP is used when data is time-sensitive.

Answer : **C**

```
SiteA#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
  Hardware is BUILT-IN-EPA-8x10G, address is 780c.f02a.db91 (bia 780a.f02b.db91)
  Description: Connection to SiteB
  Internet address is 10.10.10.1/30
  MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
      reliability 166/255, txload 1/255, rxload 1/255
  Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
  5 minute input rate 264797000 bits/sec, 26672 packets/sec
  5 minute output rate 122464000 bits/sec, 15724 packets/sec

SiteB#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
  Hardware is BUILT-IN-EPA-8x10G, address is 780c.f02c.db26 (bia 780c.f02c.db26)
  Description: Connection to SiteA
  Internet address is 10.10.10.2/30
  MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
      reliability 255/255, txload 1/255, rxload 1/255
  Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
  5 minute input rate 122464000 bits/sec, 15724 packets/sec
  5 minute output rate 264797000 bits/sec, 26672 packets/sec
```

Refer to the exhibit. Shortly after SiteA was connected to SiteB over a new single-mode fiber path, users at SiteA report intermittent connectivity issues with applications hosted at SiteB. What is the cause of the intermittent connectivity issue?

- **A.** Interface errors are incrementing.
- **B.** High usage is causing high latency.
- **C.** An incorrect SFP media type was used at SiteA.
- **D.** The sites were connected with the wrong cable type.

Answer : **A**

The only indicator of any issues here is the reliability 166/255 on SiteA. When the input and output errors increase, they affect the reliability counter. This indicates how likely it is that a packet can be delivered or received successfully. Reliability is calculated like this: reliability = number of packets / number of total frames.
The value of 255 is the highest value meaning that the interface is very reliable at the moment. The calculation above is done every 5 minutes.

A network engineer must configure the router R1 GigabitEthernet1/1 interface to connect to the router R2 GigabitEthernet1/1 interface. For the configuration to be applied, the engineer must compress the address 2001:0db8:0000:0000:0500:000a:400F:583B. Which command must be issued on the interface?

- **A.** ipv6 address 2001::db8:0000::500:a:400F:583B
- **B.** ipv6 address 2001:db8:0::500:a:4F:583B
- **C.** ipv6 address 2001:db8::500:a:400F:583B
- **D.** ipv6 address 2001:0db8::5:a:4F:583B

Answer : **C**

Question 77 (Single Topic)

What is a network appliance that checks the state of a packet to determine whether the packet is legitimate?

- **A.** Layer 2 switch
- **B.** LAN controller
- **C.** load balancer
- **D.** firewall

Answer : **D**

Question 78 (Single Topic)

What is a role of access points in an enterprise network?

- **A.** integrate with SNMP in preventing DDoS attacks
- **B.** serve as a first line of defense in an enterprise network
- **C.** connect wireless devices to a wired network
- **D.** support secure user logins to devices on the network

Answer : **C**

Question 79 (Single Topic)

An implementer is preparing hardware for virtualization to create virtual machines on a host. What is needed to provide communication between hardware and virtual machines?

- **A.** router
- **B.** hypervisor
- **C.** switch
- **D.** straight cable

Answer : **B**

How does a Cisco Unified Wireless Network respond to Wi-Fi channel overlap?

- **A.** It allows the administrator to assign the channels on a per-device or per-interface basis.
- **B.** It segregates devices from different manufactures onto different channels.
- **C.** It analyzes client load and background noise and dynamically assigns a channel.
- **D.** It alternates automatically between 2.4 GHz and 5 GHz on adjacent access points.

Answer : **C**

In which situation is private IPv4 addressing appropriate for a new subnet on the network of an organization?

- **A.** The network has multiple endpoint listeners, and it is desired to limit the number of broadcasts.
- **B.** The ISP requires the new subnet to be advertised to the Internet for web services.
- **C.** There is limited unique address space, and traffic on the new subnet will stay local within the organization.
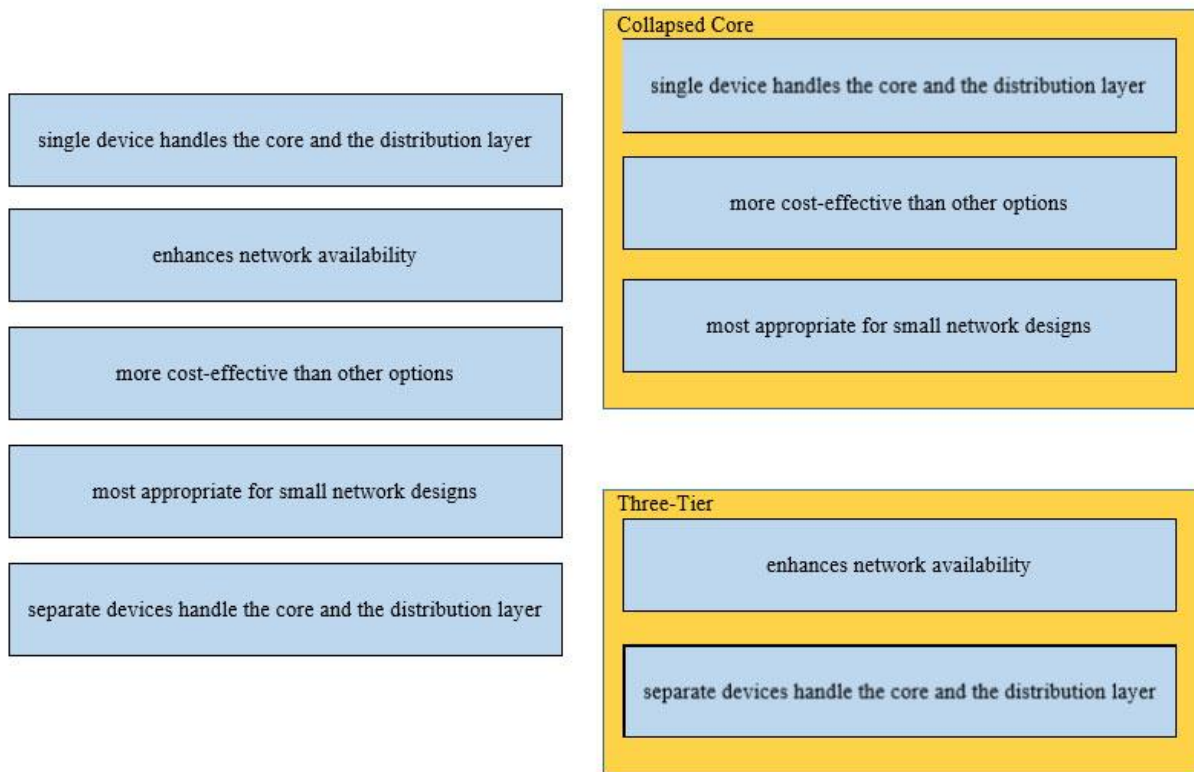- **D.** Traffic on the subnet must traverse a site-to-site VPN to an outside organization.

Answer : **C**

DRAG DROP -
Drag and drop the characteristics of network architectures from the left onto the type of architecture on the right.
Select and Place:

Collapsed Core
- single device handles the core and the distribution layer
- more cost-effective than other options
- most appropriate for small network designs

Three-Tier
- enhances network availability
- separate devices handle the core and the distribution layer

Available options:
- single device handles the core and the distribution layer
- enhances network availability
- more cost-effective than other options
- most appropriate for small network designs
- separate devices handle the core and the distribution layer

Question 83 (Single Topic)

Which 802.11 frame type is indicated by a probe response after a client sends a probe request?

- **A.** data
- **B.** management
- **C.** control
- **D.** action

Answer : **B**

Question 84 (Single Topic)

What is the difference in data transmission delivery and reliability between TCP and UDP?

- **A.** TCP transmits data at a higher rate and ensures packet delivery. UDP retransmits lost data to ensure applications receive the data on the remote end.
- **B.** TCP requires the connection to be established before transmitting data. UDP transmits data at a higher rate without ensuring packet delivery.

- **C.** UDP sets up a connection between both devices before transmitting data. TCP uses the three-way handshake to transmit data with a reliable connection.
- **D.** UDP is used for multicast and broadcast communication. TCP is used for unicast communication and transmits data at a higher rate with error checking

Answer : **B**

Question 86 (Single Topic)

What is the maximum bandwidth of a T1 point-to-point connection?

- **A.** 1.544 Mbps
- **B.** 2.048 Mbps
- **C.** 34.368 Mbps
- **D.** 43.7 Mbps

Answer : **A**

Question 87 (Single Topic)

What are two similarities between UTP Cat 5e and Cat 6a cabling? (Choose two.)

- **A.** Both support speeds up to 10 Gigabit.
- **B.** Both support speeds of at least 1 Gigabit.
- **C.** Both support runs of up to 55 meters.
- **D.** Both support runs of up to 100 meters.
- **E.** Both operate at a frequency of 500 MHz.

Answer : **BD**

Question 88 (Single Topic)

What is a characteristic of cloud-based network topology?

- **A.** onsite network services are provided with physical Layer 2 and Layer 3 components
- **B.** wireless connections provide the sole access method to services
- **C.** physical workstations are configured to share resources
- **D.** services are provided by a public, private, or hybrid deployment

Answer : **D**

Which network action occurs within the data plane?

- **A.** reply to an incoming ICMP echo request
- **B.** make a configuration change from an incoming NETCONF RPC
- **C.** run routing protocols (OSPF, EIGRP, RIP, BGP)
- **D.** compare the destination IP address to the IP routing table

Answer : **D**

Question 91 (Single Topic)

Which two network actions occur within the data plane? (Choose two.)

- **A.** Run routing protocols.
- **B.** Make a configuration change from an incoming NETCONF RPC.
- **C.** Add or remove an 802.1Q trunking header.
- **D.** Match the destination MAC address to the MAC address table.
- **E.** Reply to an incoming ICMP echo request.

Answer : **CD**

Question 92 (Single Topic)

What are network endpoints?

- **A.** support inter-VLAN connectivity
- **B.** a threat to the network if they are compromised
- **C.** act as routers to connect a user to the service provider network
- **D.** enforce policies for campus-wide traffic going to the Internet

Answer : **B**

Question 94 (Single Topic)

Why was the RFC 1918 address space defined?

- **A.** conserve public IPv4 addressing
- **B.** support the NAT protocol
- **C.** preserve public IPv6 address space
- **D.** reduce instances of overlapping IP addresses
  Answer : **A**

Question 95 (Single Topic)

DRAG DROP -
Drag and drop the TCP or UDP details from the left onto their corresponding protocols on the right.
Select and Place:

Answer Area

transmitted based on data contained in the packet without the need for a data channel
requires the client and the server to establish a connection before sending the packet
provides best-effort service
supports reliable data transmission

TCP

requires the client and the server to establish a connection before sending the packet
supports reliable data transmission

UDP

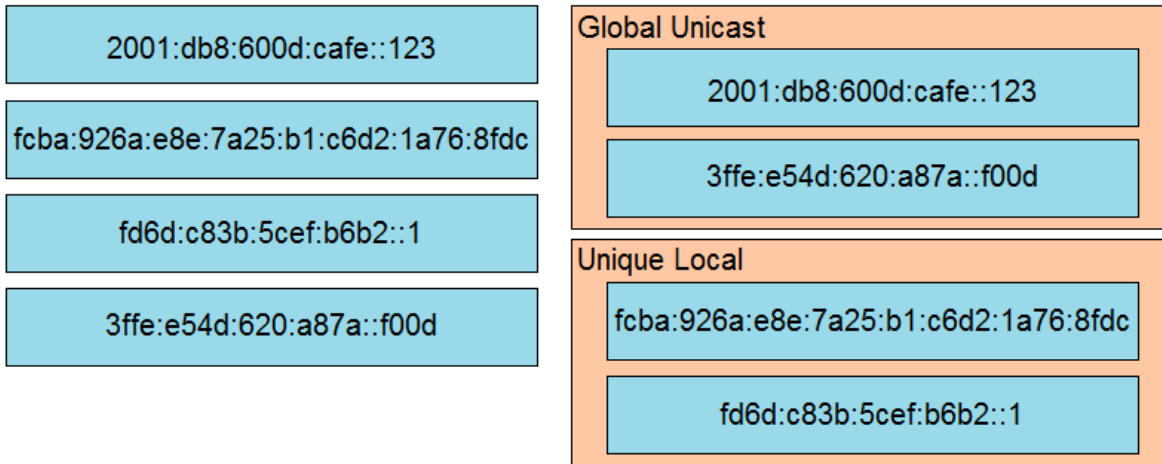| transmitted based on data contained in the packet without the need for a data channel |
|---|
| provides best-effort service |

Question 96 (Single Topic)

DRAG DROP -
Drag and drop the IPv6 addresses from the left onto the corresponding address types on the right.
Select and Place:

Answer Area

2001:db8:600d:cafe::123

fcba:926a:e8e:7a25:b1:c6d2:1a76:8fdc

fd6d:c83b:5cef:b6b2::1

3ffe:e54d:620:a87a::f00d

Global Unicast

2001:db8:600d:cafe::123

3ffe:e54d:620:a87a::f00d

Unique Local

fcba:926a:e8e:7a25:b1:c6d2:1a76:8fdc

fd6d:c83b:5cef:b6b2::1

Question 97 (Single Topic)

Which type of organization should use a collapsed-core architecture?

- **A.** small and needs to reduce networking costs
- **B.** large and must minimize downtime when hardware fails
- **C.** large and requires a flexible, scalable network design
- **D.** currently small but is expected to grow dramatically in the near future

Answer : **A**

It is ideal for small companies: The collapsed core model is a reduced version of the three-tier model. The deduction was made to create a network for small and medium-sized campuses. Therefore, smaller institutions can get the advantage of using a collapsed core network while still gaining the same benefits they would if they were using a three-tier model. Small organizations often cannot afford the hardware and human resources to run the network can benefit greatly with less oversight necessary.
And reduces cost: In a traditional three-tier campus network, the core layer is typically a complex and expensive piece of hardware. This layer is eliminated with collapsed core architecture, reducing both cost and complexity.

Question 98 (Single Topic)

A network administrator is setting up a new IPv6 network using the 64-bit address 2001:0EB8:00C1:2200:0001:0000:0000:0331/64. To simplify the configuration, the administrator has decided to compress the address. Which IP address must the administrator configure?

- **A.** ipv6 address 2001:EB8:C1:22:1::331/64
- **B.** ipv6 address 21:EB8:C1:2200:1::331/64
- **C.** ipv6 address 2001:EB8:C1:2200:1:0000:331/64
- **D.** ipv6 address 2001:EB8:C1:2200:1::331/64

Answer : **D**

Question 99 (Single Topic)

DRAG DROP -
Drag and drop the IPv6 addresses from the left onto the corresponding address types on the right.
Select and Place:

Question 100 (Single Topic)

What is an appropriate use for private IPv4 addressing?

- **A.** to allow hosts inside to communicate in both directions with hosts outside the organization
- **B.** on internal hosts that stream data solely to external resources
- **C.** on the public-facing interface of a firewall
- **D.** on hosts that communicate only with other internal hosts

Answer : **D**
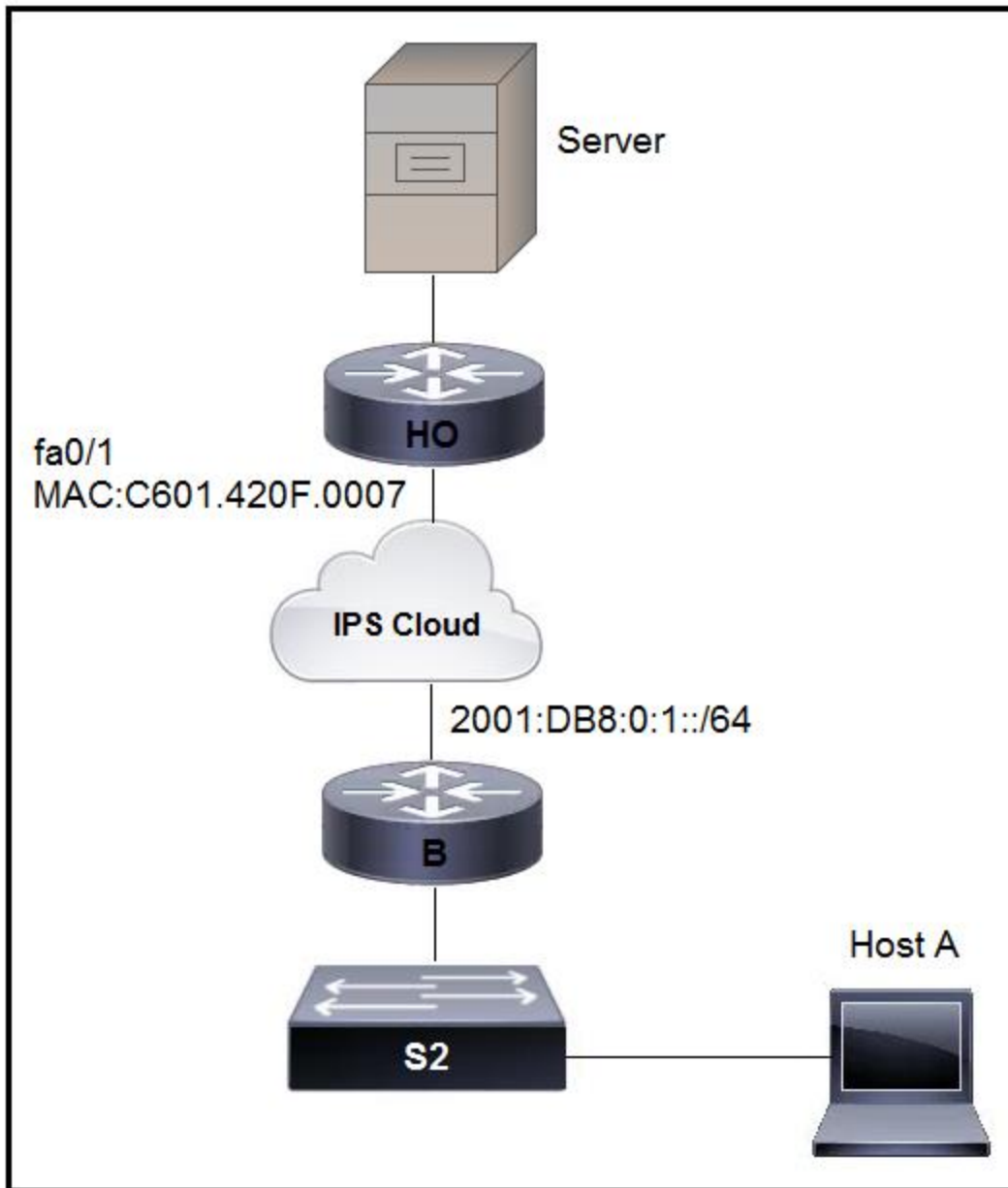
Refer to the exhibit. An engineer is configuring the HO router. Which IPv6 address configuration must be applied to the router fa0/1 interface for the router to assign a unique 64-bit IPv6 address to itself?

- **A.** ipv6 address 2001:DB8:0:1:FFFF:C601:420F:7/64
- **B.** ipv6 address 2001:DB8:0:1:FE80:C601:420F:7/64
- **C.** ipv6 address 2001:DB8:0:1:C601:42FF:FE0F:7/64
- **D.** ipv6 address 2001:DB8:0:1:C601:42FF:800F:7/64

Answer : **B**

What is a similarity between 1000BASE-LX and 1000BASE-T standards?

- **A.** Both use the same data-link header and trailer formats.
- **B.** Both cable types support RJ-45 connectors.
- **C.** Both support up to 550 meters between nodes.
- **D.** Both cable types support LR connectors.

Answer : **A**

```
C:\Users\ciscoadmin>ipconfig /all

Windows IP Configuration
    Host Name.....................: DESKTOP-480J88T
    Primary Dns Suffix............:
    Node Type.....................: Hybrid
    IP Routing Enabled............: No
    WINS Proxy Enabled............: No
    DNS Suffix Search List........: arcep.se

Ethernet adapter Ethernet:
    Media State...................: Media disconnected
    Connection-specific DNS Suffix :
    Description...................: Realtek PCIe GBE Family
Controller
    Physical Address..............: 3C-52-82-33-F3-BF
    DHCP Enabled..................: Yes
    Autoconfiguration Enabled.....: Yes

Wireless LAN adapter Wi-Fi
    Connection-specific DNS Suffix : arcep.se
    Description...................: Intel (R) Dual Band
Wireless-AC 7265
    Physical Address..............: C8-21-58-B4-F3-EF
    DHCP Enabled..................: Yes
    Autoconfiguration Enabled.....: Yes
    Link-local IPv6 Address.......: fe80::45a1:b3fa:2f37:bf37%2 (Preferred)
    IPv4 Address..................: 192.168.1.226 (Preferred)
    Subnet Mask...................: 255.255.255.0
    Lease Obtained................: October 3, 2019 12:28:08 PM
    Lease Expires.................: October 3, 2019 7:18:37 PM
    Default Gateway...............:  192.168.1.100
    DHCP Server...................: 192.168.1.254
    DHCPv6 IAID...................:  46670168
    DHCPv6 Client DUID............: 00-01-00-01-20-FF-05-55-3C-52-82-33-D3-84
    DNS Servers...................: 192.168.1.253
    NetBIOS over Tcpip............: Enabled
    Connection-specific DNS Suffix Search List :
                        arcep.se
```

Refer to the exhibit. The given Windows PC is requesting the IP address of the host at www.cisco.com. To which IP address is the request sent?

- **A.** 192.168.1.253
- **B.** 192.168.1.100
- **C.** 192.168.1.226
- **D.** 192.168.1.254

Answer : **A**

Question 104 (Single Topic)

Which function forwards frames to ports that have a matching destination MAC address?

- **A.** frame flooding
- **B.** frame filtering
- **C.** frame pushing
- **D.** frame switching

Answer : **D**

Question 105 (Single Topic)

Which type of IPv6 address is similar to a unicast address but is assigned to multiple devices on the same network at the same time?

- **A.** global unicast address
- **B.** link-local address
- **C.** anycast address
- **D.** multicast address

Answer : **C**

Question 106 (Single Topic)

What is a characteristic of private IPv4 addressing?

- **A.** composed of up to 65,536 available addresses
- **B.** issued by IANA in conjunction with an autonomous system number
- **C.** used without tracking or registration
- **D.** traverse the Internet when an outbound ACL is applied

Answer : **C**

Question 107 (Single Topic)

What is a function of an endpoint on a network?

- **A.** provides wireless services to users in a building
- **B.** connects server and client device to a network
- **C.** allows users to record data and transmit to a file server
- **D.** forwards traffic between VLANs on a network

Answer : **C**

Question 108 (Single Topic)

What is the function of a controller in controller-based networking?

- **A.** It serves as the centralized management point of an SDN architecture
- **B.** It is a pair of core routers that maintain all routing decisions for a campus
- **C.** It centralizes the data plane for the network
- **D.** It is the card on a core router that maintains all routing decisions for a campus.

Answer : **A**

Question 110 (Single Topic)

How do TCP and UDP fit into a query-responsible model?

- **A.** TCP avoids using sequencing and UDP avoids using acknowledgments
- **B.** TCP establishes a connection prior to sending data, and UDP sends immediately
- **C.** TCP encourages out-of-order packet delivery, and UDP prevents re-ordering
- **D.** TCP uses error detection for packets, and UDP uses error recovery.

Answer : **B**

Question 111 (Single Topic)

What provides centralized control of authentication and roaming in an enterprise network?

- **A.** a lightweight access point
- **B.** a wireless LAN controller
- **C.** a firewall
- **D.** a LAN switch

Answer : **B**

Question 112 (Single Topic)

Which set of 2 4 GHz nonoverlapping wireless channels is standard in the United States?

- **A.** channels 1, 6, 11, and 14

- **B.** channels 2, 7, 9, and 11
- **C.** channels 2, 7, and 11
- **D.** channels 1, 6, and 11

Answer : **D**

Question 113 (Single Topic)

A network engineer is installing an IPv6-only capable device. The client has requested that the device IP address be reachable only from the internal network.
Which type of IPv6 address must the engineer assign?

- **A.** IPv4-compatible IPv6 address
- **B.** unique local address
- **C.** link-local address
- **D.** aggregatable global address

Answer : **C**

Question 114 (Single Topic)

What is a requirement for nonoverlapping Wi-Fi channels?

- **A.** different security settings
- **B.** discontinuous frequency ranges
- **C.** unique SSIDs
- **D.** different transmission speeds

Answer : **B**

Question 115 (Single Topic)

A network engineer must implement an IPv6 configuration on the vlan 2000 interface to create a routable locally-unique unicast address that is blocked from being advertised to the internet.
Which configuration must the engineer apply?

- **A.** interface vlan 2000 ipv6 address ff00:0000:aaaa::1234:2343/64
- **B.** interface vlan 2000 ipv6 address fd00::1234:2343/64
- **C.** interface vlan 2000 ipv6 address fe80:0000:aaaa::1234:2343/64
- **D.** interface vlan 2000 ipv6 address fc00:0000:aaaa::a15d:1234:2343:8aca/64

Answer : **D**

Question 116 (Single Topic)

What are two characteristics of an SSID? (Choose two.)

- **A.** It uniquely identifies a client in a WLAN.
- **B.** It is at most 32 characters long
- **C.** It uniquely identifies an access point in a WLAN
- **D.** It provides secured access to a WLAN.
- **E.** It can be hidden or broadcast in a WLAN.

Answer : **CD**

Question 117 (Single Topic)

When a switch receives a frame for a known destination MAC address, how is the frame handled?
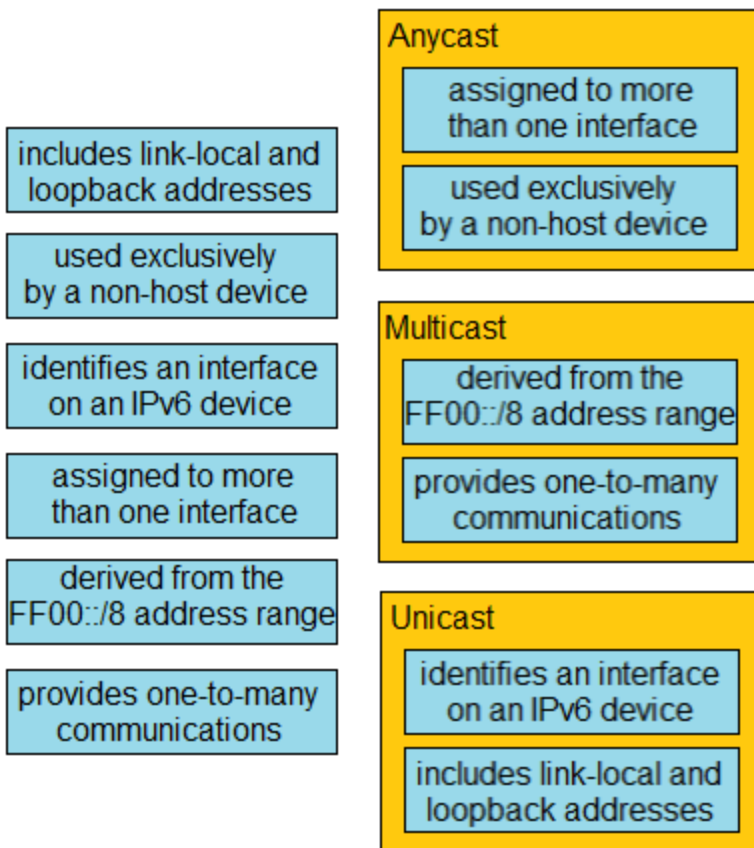
- **A.** flooded to all ports except the one from which it originated
- **B.** forwarded to the first available port
- **C.** sent to the port identified for the known MAC address
- **D.** broadcast to all ports

Answer : **C**

Question 118 (Single Topic)

DRAG DROP -
Drag and drop the IPv6 address details from the left onto the corresponding types on the right.
Select and Place:

Anycast

assigned to more
than one interface

used exclusively
by a non-host device

includes link-local and
loopback addresses

used exclusively
by a non-host device

identifies an interface
on an IPv6 device

assigned to more
than one interface

derived from the
FF00::/8 address range

provides one-to-many
communications

Multicast

derived from the
FF00::/8 address range

provides one-to-many
communications

Unicast

identifies an interface
on an IPv6 device

includes link-local and
loopback addresses

Question 119 (Single Topic)

What is the collapsed layer in collapsed core architectures?

- **A.** Core and distribution
- **B.** access and WAN
- **C.** distribution and access
- **D.** core and WAN

Answer : **A**

Question 1 20 (Single Topic)

What is a characteristic of a SOHO network?

- **A.** includes at least three tiers of devices to provide load balancing and redundancy
- **B.** connects each switch to every other switch in the network
- **C.** enables multiple users to share a single broadband connection
- **D.** provides high throughput access for 1000 or more users

Answer : **C**

Question 121 (Single Topic)

What is the role of disaggregation in controller-based networking?

- **A.** It divides the control-plane and data-plane functions.
- **B.** It streamlines traffic handling by assigning individual devices to perform either Layer 2 or Layer 3 functions
- **C.** It summarizes the routes between the core and distribution layers of the network topology
- **D.** It enables a network topology to quickly adjust from a ring network to a star network

Answer : **A**

Question 122 (Single Topic)

What is a function performed by a web server?

- **A.** send and retrieve email from client devices
- **B.** securely store files for FTP access
- **C.** authenticate and authorize a userλ€™s identity
- **D.** provide an application that is transmitted over HTTP

Answer : **D**

Question 124 (Single Topic)

Which protocol uses the SSL?

- **A.** SSH
- **B.** HTTPS
- **C.** HTTP
- **D.** Telnet

Answer : **B**

Question 125 (Single Topic)

Why is UDP more suitable than TCP for applications that require low latency such as VoIP?

- **A.** UDP reliably guarantees delivery of all packets: TCP drops packets under heavy load

- **B.** UDP uses sequencing data for packets to arrive in order TCP offers the capability to receive packets in random order
- **C.** TCP uses congestion control for efficient packet delivery: UDP uses flow control mechanisms for the delivery of packets
- **D.** TCP sends an acknowledgement for every packet received: UDP operates without acknowledgments

Answer : **D**

Question 126 (Single Topic)

What are the two functions of SSIDs? (Choose two.)

- **A.** uses the maximum of 32 alphanumeric characters
- **B.** controls the speed of the Wi-Fi network
- **C.** used exclusively with controller-based Wi-Fi networks
- **D.** supports a single access point
- **E.** broadcasts by default

Answer : **AD**

Question 127 (Single Topic)

Which two characteristics describe the access layer in a three-tier network architecture? (Choose two.)

- **A.** serves as the network aggregation point
- **B.** physical connection point for a LAN printer
- **C.** designed to meet continuous redundant uptime requirements
- **D.** layer at which a wireless access point connects to the wired network
- **E.** provides a boundary between Layer 2 and Layer 3 communications

Answer : **BD**

Question 128 (Single Topic)

Which PoE mode enables powered-devices detection and guarantees power when the device detected?

- **A.** auto
- **B.** static
- **C.** dynamic
- **D.** active

Answer : **A**