

*Correct Answer:* AC

**246.** The service password-encryption command is entered on a router.  
What is the effect of this configuration?

- A. restricts unauthorized users from viewing clear-text passwords in the running configuration
- B. prevents network administrators from configuring clear-text passwords
- C. protects the VLAN database from unauthorized PC connections on the switch
- D. encrypts the password exchange when a VPN tunnel is established

*Correct Answer:* A

**247.** Which type of IPv6 address is publicly routable in the same way as IPv4 public addresses?

- A. multicast
- B. unique local
- C. link-local
- D. global unicast

*Correct Answer:* D

**248.** Which two statements are true about the command ip route 172.16.3.0 255.255.0 192.168.2.4? (Choose two.)

- A. It establishes a static route to the 172.16.3.0 network.
- B. It establishes a static route to the 192.168.2.0 network.
- C. It configures the router to send any traffic for an unknown destination to the 172.16.3.0 network.
- D. It configures the router to send any traffic for an unknown destination out the interface with the address 192.168.2.4.
- E. It uses the default administrative distance.
- F. It is a route that would be used last if other routes to the same destination exist.

*Correct Answer:* AE

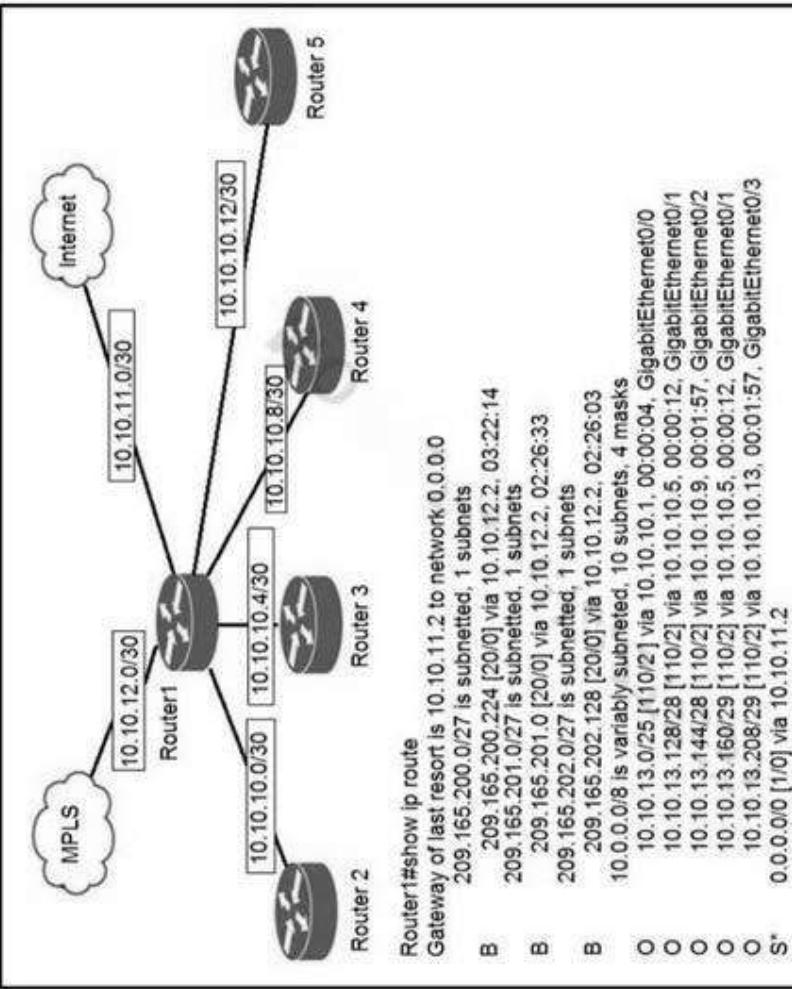
**249.** Which three statements are typical characteristics of VLAN arrangements? (Choose three.)

- A. A new switch has no VLANs configured.

- B. Connectivity between VLANs requires a Layer 3 device.
- C. VLANs typically decrease the number of collision domains.
- D. Each VLAN uses a separate address space.
- E. A switch maintains a separate bridging table for each VLAN.
- F. VLANs cannot span multiple switches.

*Correct Answer: BDE*

250. Refer to the exhibit. To which device does Router1 send packets that are destined to host 10.10.13.165?



- A. Router2
- B. Router3
- C. Router4
- D. Router5

*Correct Answer: B*

251. Refer to the exhibit. Which two commands were used to create port channel 10? (Choose two.)

Switch#show etherchannel summary [output omitted]			
Group	Port-channel	Protocol	Ports
10	Po10(SU)	LACP	Gi0/0(P) Gi0/2(P)
20	Po20(SU)	LACP	Gi0/1(P) Gi0/3(P)

- A. int range g0/0-1  
channel-group 10 mode active
- B. int range g0/0-1  
channel-group 10 mode desirable
- C. int range g0/0-1  
channel-group 10 mode passive
- D. int range g0/0-1  
channel-group 10 mode auto
- E. int range g0/0-1  
channel-group 10 mode on

*Correct Answer:* AC

**252. What are two requirements for an HSRP group? (Choose two.)**

- A. exactly one active router
- B. one or more standby routers
- C. one or more backup virtual routers
- D. exactly one standby active router
- E. exactly one backup virtual router

*Correct Answer:* AB

**Explanation:**

- A: exactly one active router: Only one Active Router per HSRP group will be elected based on highest priority. In case of equal priority, Highest IP address will be elected as Active Router.
- B: one or more standby routers : There can be one or more Standby Routers.
- C, D And E are incorrect: Wrong terminology.

**253. What occurs to frames during the process of frame flooding?**

- A. Frames are sent to all ports, including those that are assigned to other VLANs.
- B. Frames are sent to every port on the switch that has a matching entry in MAC address table.
- C. Frames are sent to every port on the switch in the same VLAN except from the originating port.
- D. Frames are sent to every port on the switch in the same VLAN.

*Correct Answer:C*

254. If all OSPF routers in a single area are configured with the same priority value, what value does a router use for the OSPF router ID in the absence of a loopback interface?

- A. the IP address of the first Fast Ethernet interface
- B. the IP address of the console management interface
- C. the highest IP address among its active interfaces
- D. the lowest IP address among its active interfaces
- E. the priority value until a loopback interface is configured

*Correct Answer:C*

255. Which IPv6 address block forwards packets to a multicast address rather than a unicast address?

- A. 2000::/3
- B. FC00::/7
- C. FE80::/10
- D. FF00::/12

*Correct Answer:D*

256. The OSPF Hello protocol performs which of the following tasks?  
(Choose two.)

- A. It negotiates correctness parameters between neighboring interfaces.
- B. It broadcasts hello packets throughout the internetwork to discover all routers that are running OSP
- C. It provides dynamic neighbor discovery.
- D. It detects unreachable neighbors in 90 second intervals.
- E. It uses timers to elect the router with the fastest links as the designated router.
- F. It maintains neighbor relationships

*Correct Answer: CF*

**257. What are two benefits of using VTP in a switching environment?**  
(Choose two.)

- A. It allows switches to read frame tags.
- B. It allows ports to be assigned to VLANs automatically.
- C. It maintains VLAN consistency across a switched network.
- D. It allows frames from multiple VLANs to use a single interface.
- E. It allows VLAN information to be automatically propagated throughout the switching environment.

*Correct Answer: CE*

**258. Which purpose does a northbound API serve in a controller-based networking architecture?**

- A. communicates between the controller and the physical network hardware
- B. reports device errors to a controller
- C. generates statistics for network hardware and traffic
- D. facilitates communication between the controller and the applications

*Correct Answer: D*

**259. The OSPF Hello protocol performs which of the following tasks?**  
(Choose two.)

- A. It provides dynamic neighbor discovery.
- B. It detects unreachable neighbors in 90 second intervals.
- C. It maintains neighbor relationships.
- D. It negotiates correctness parameters between neighboring interfaces.
- E. It uses timers to elect the router with the fastest links as the designated router.
- F. It broadcasts hello packets throughout the internetwork to discover all routers that are running OSPF.

*Correct Answer: AC*

**260. What are two reasons a network administrator would use CDP?**  
(Choose two.)

- A. to verify the type of cable interconnecting two devices
- B. to determine the status of network services on a remote device
- C. to obtain VLAN information from directly connected switches
- D. to verify Layer 2 connectivity between two devices when Layer 3 fails
- E. to obtain the IP address of a connected device in order to telnet to the device
- F. to determine the status of the routing protocols between directly connected routers

*Correct Answer:* DE

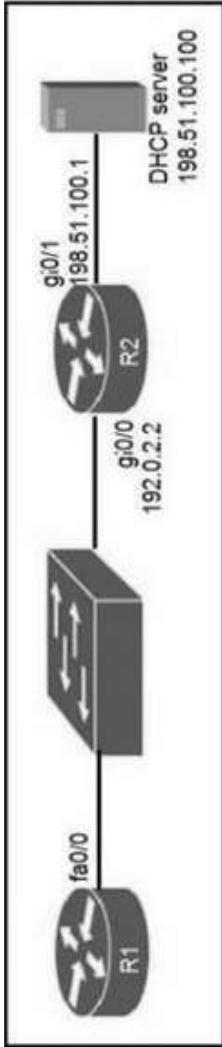
261. Refer to the exhibit. An administrator is tasked with configuring a voice VLAN. What is the expected outcome when a Cisco phone is connected to the GigabitEthernet 3/1/4 port on a switch?

```
interface GigabitEthernet3/1/4
switchport voice vlan 50
!
```

- A. The phone and a workstation that is connected to the phone do not have VLAN connectivity.
- B. The phone sends and receives data in VLAN 50, but a workstation connected to the phone sends and receives data in VLAN 1.
- C. The phone sends and receives data in VLAN 50, but a workstation connected to the phone has no VLAN connected.
- D. The phone and a workstation that is connected to the phone send and receive data in VLAN 50.

*Correct Answer:* B

262. Refer to the exhibit. An engineer deploys a topology in which R1 obtains its IP configuration from DHCP. If the switch and DHCP server configurations are complete and correct. Which two sets of commands must be configured on R1 and R2 to complete the task? (Choose two)



A.  
R1 (config)# interface fa0/0  
R1 (config-if)# ip helper-address 198.51.100.100

B.  
R2 (config)# interface gi0/0  
R2 (config-if)# ip helper-address 198.51.100.100

C.  
R1 (config)# interface fa0/0  
R1 (config-if)# ip address dhcp  
R1 (config-if)# no shutdown

D.  
R2 (config)# interface gi0/0  
R2 (config-if)# ip address dhcp

E.  
R1 (config)# interface fa0/0  
R1 (config-if)# ip helper-address 192.0.2.2

*Correct Answer: BC*

263. Refer to the exhibit. What commands are needed to add a subinterface to Ethernet0/0 on R1 to allow for VLAN 20, with IP address 10.20.20.1/24?

R1:	SW1:	SW2:
Interface Ethernet0/0 no ip address	Interface Ethernet0/0 switchport trunk encapsulation dot1q switchport mode trunk	Interface Ethernet0/1 switchport mode trunk
	Interface Ethernet0/1 switchport trunk allowed vlan 10 switchport trunk encapsulation dot1q switchport mode trunk	Interface Ethernet0/2 switchport access vlan 20 switchport mode access

A.  
R1 (config)#interface ethernet 0/0

R1(config)#encapsulation dot1q 20 R1(config)#ip  
address 10.20.20.1 255.255.255.0

B.  
R1(config)#interface ethernet0/0.20  
R1(config)#encapsulation dot1q 20 R1(config)#ip  
address 10.20.20.1 255.255.255.0

C.  
R1(config)#interface ethernet0/0.20  
R1(config)#ip address 10.20.20.1 255.255.255.0

D.  
R1(config)#interface ethernet0/0  
R1(config)#ip address 10.20.20.1 255.255.255.0

*Correct Answer:B*

**264.** On a corporate network, hosts on the same VLAN can communicate with each other, but they are unable to communicate with hosts on different VLANs. What is needed to allow communication between the VLANs?

- A. a router with subinterfaces configured on the physical interface that is connected to the switch
- B. a router with an IP address on the physical interface connected to the switch
- C. a switch with an access link that is configured between the switches
- D. a switch with a trunk link that is configured between the switches

*Correct Answer:A*

**Explanation:**

Different VLANs can't communicate with each other , they can communicate with the help of Layer3 router. Hence , it is needed to connect a router to a switch , then make the sub-interface on the router to connect to the switch, establishing Trunking links to achieve communications of devices which belong to different VLANs.

**265.** Which command can you enter to determine the addresses that have been assigned on a DHCP Server?

- A. Show ip DHCP database.

- B. Show ip DHCP pool.
- C. Show ip DHCP binding.
- D. Show ip DHCP server statistic.

*Correct Answer:C*

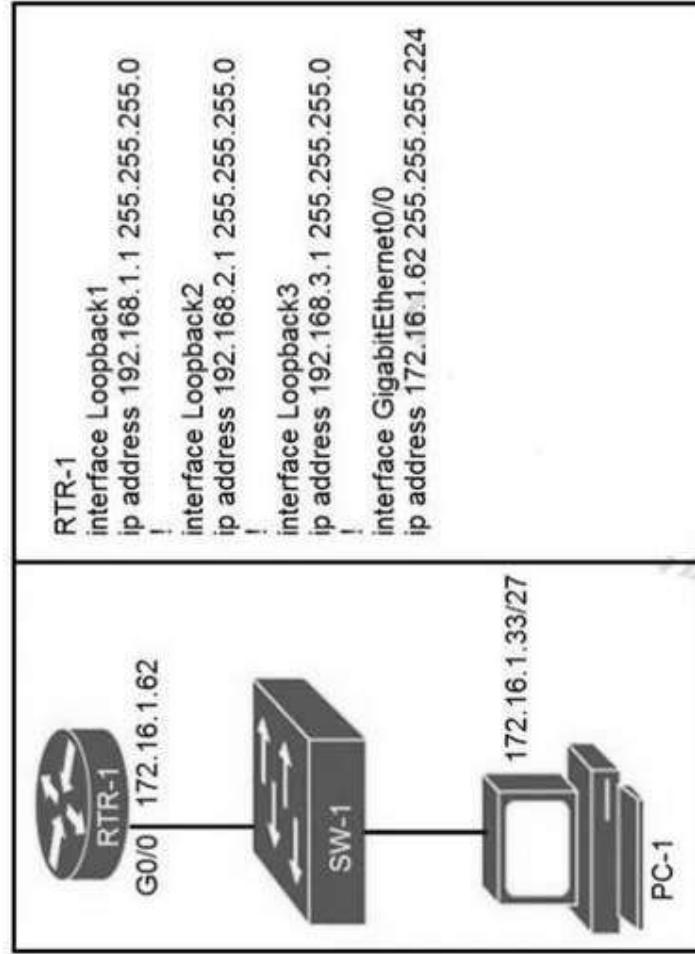
266. Refer to the exhibit. If the network environment is operating normally, which type of device must be connected to interface FastEthernet 0/1?

```
ip arp inspection vlan 2-10
interface fastethernet 0/1
ip arp inspection trust
```

- A. DHCP client
- B. access point
- C. router
- D. PC

*Correct Answer:C*

267. Refer to the exhibit. Which configuration on RTR-1 denies SSH access from PC-1 to any RTR-1 interface and allows all other traffic?



A.  
access-list 100 deny tcp host 172.16.1.33 any eq 22  
access-list 100 permit ip any any

```
interface GigabitEthernet0/0
ip access-group 100 in
```

B.  
access-list 100 deny tcp host 172.16.1.33 any eq 22  
access-list 100 permit ip any any

```
line vty 0 15
access-class 100 in
```

C.  
access-list 100 deny tcp host 172.16.1.33 any eq 23  
access-list 100 permit ip any any

```
interface Gigabit Ethernet0/0
ip access-group 100 in
```

D.  
access-list 100 deny tcp host 172.16.1.33 any eq 23  
access-list 100 permit ip any any

```
line vty 0 15
access-class 100 in
```

*Correct Answer:B*

**268. Which function dose the range of private IPv4 addresses perform?**

- A. allow multiple companies to each use the same address without conflicts
- B. provides a direct connection for hosts from outside of the enterprise network
- C. ensures that NAT is not required to reach the internet with private range addressing
- D. enable secure communications to the internet for all external hosts

*Correct Answer:A*

269. Which type of API would be used to allow authorized salespeople of an organization access to internal sales data from their mobile devices?

- A. partner
- B. open
- C. public
- D. private

*Correct Answer:D*

270. What is a characteristic of the REST API?

- A. evolved into what became SOAP
- B. used for exchanging XML structured information over HTTP or SMTP
- C. considered slow, complex, and rigid
- D. most widely used API for web services

*Correct Answer:D*

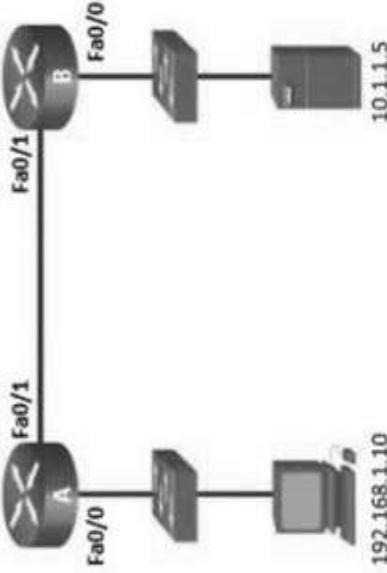
271. What is the name of the layer in the Cisco borderless switched network design that is considered to be the backbone used for high-speed connectivity and fault isolation?

- A. data link
- B. access
- C. core
- D. network
- E. network access

*Correct Answer:C*

272. Refer to the exhibit. An administrator configures the following ACL in order to prevent devices on the 192.168.1.0 subnet from accessing the server at 10.1.1.5:

```
access-list 100 deny ip 192.168.1.0 0.0.255 host 10.1.1.5  
access-list 100 permit ip any any
```



Where should the administrator place this ACL for the most efficient use of network resources?

- A. inbound on router A Fa0/0
- B. outbound on router B Fa0/0
- C. outbound on router A Fa0/1
- D. inbound on router B Fa0/1

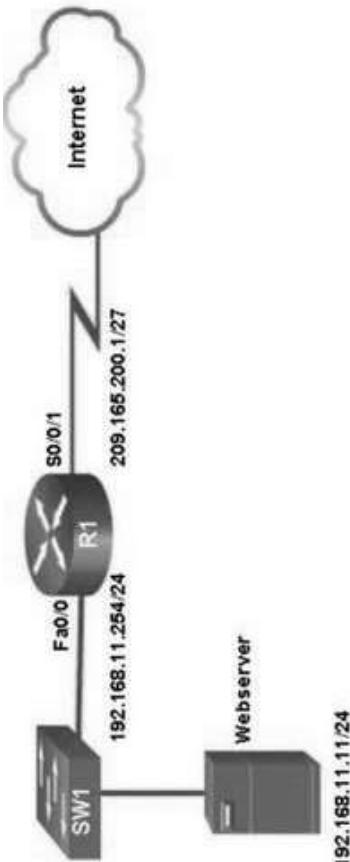
*Correct Answer: A*

273. Which step in the link-state routing process is described by a router sending Hello packets out all of the OSPF-enabled interfaces?

- A. electing the designated router
- B. establishing neighbor adjacencies
- C. injecting the default route
- D. exchanging link-state advertisements

*Correct Answer: B*

274. Refer to the exhibit. Router R1 is configured with static NAT. Addressing on the router and the web server are correctly configured, but there is no connectivity between the web server and users on the Internet. What is a possible reason for this lack of connectivity?



```
R1(config)# ip nat inside source static 192.168.11.254 209.165.200.1
R1(config)# interface FastEthernet0/0
R1(config-if)# ip nat inside
R1(config-if)# interface Serial0/0/1
R1(config-if)# ip nat outside
```

- A. The router NAT configuration has an incorrect inside local address.
- B. The inside global address is incorrect.
- C. The NAT configuration on interface S0/0/1 is incorrect.
- D. Interface Fa0/0 should be configured with the command ip nat outside

*Correct Answer: A*

275. Any company has decided to reduce its environmental footprint by reducing energy costs, moving to a smaller facility, and promoting telecommuting. What service or technology would support this requirement?
- A. Cisco ACI
  - B. cloud services
  - C. APIC-EM
  - D. data center

*Correct Answer: B*

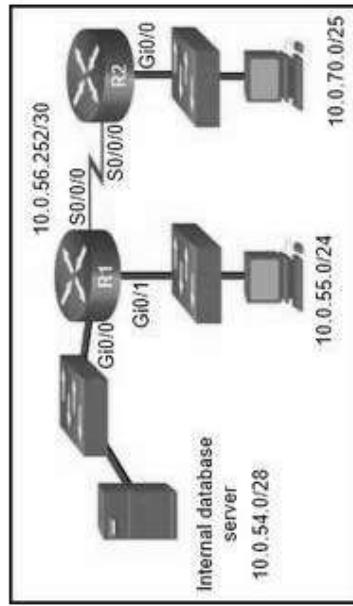
276. A company needs to interconnect several branch offices across a metropolitan area. The network engineer is seeking a solution that provides high-speed converged traffic, including voice, video, and data on the same network infrastructure. The company also wants easy integration to their existing LAN infrastructure in their office locations. Which technology should be recommended?
- A. VSAT
  - B. ISDN

- C. Frame Relay
- D. Ethernet WAN

*Correct Answer:D*

**Explanation:** Ethernet WAN uses many Ethernet standards and it connects easily to existing Ethernet LANs. It provides a switched, high-bandwidth Layer 2 network capable of managing data, voice, and video all on the same infrastructure. ISDN, while capable of supporting both voice and data, does not provide high bandwidth. VSAT uses satellite connectivity to establish a private WAN connection but with relatively low bandwidth. Use of VSAT, ISDN, and Frame Relay require specific network devices for the WAN connection and data conversion between LAN and WAN.

**277. Refer to the exhibit. Which two configurations would be used to create and apply a standard access list on R1, so that only the 10.0.70.0/25 network devices are allowed to access the internal database server? (Choose two.)**



- A.  
R1(config)# interface GigabitEthernet0/0  
R1(config-if)# ip access-group 5 out
- B.  
R1(config)# access-list 5 permit 10.0.54.0 0.0.1.255
- C.  
R1(config)# interface Serial0/0/0  
R1(config-if)# ip access-group 5 in
- D.  
R1(config)# access-list 5 permit 10.0.70.0 0.0.0.127
- E.  
R1(config)# access-list 5 permit any

*Correct Answer:AD*

278. Which type of VPN uses a hub-and-spoke configuration to establish a full mesh topology?

- A. GRE over IPsec
- B. dynamic multipoint VPN
- C. MPLS VPN
- D. IPsec virtual tunnel interface

*Correct Answer:B*

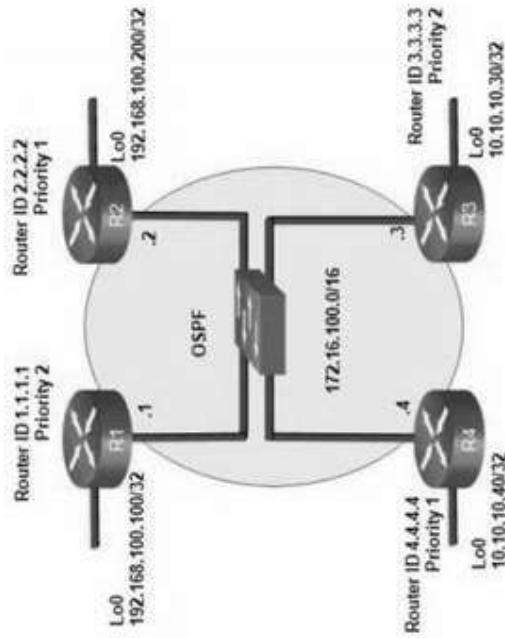
279. What are two purposes of launching a reconnaissance attack on a network? (Choose two.)

- A. to prevent other users from accessing the system
- B. to escalate access privileges
- C. to gather information about the network and devices
- D. to scan for accessibility
- E. to retrieve and modify data

*Correct Answer:CD*

**Explanation:** Gathering information about a network and scanning for access is a reconnaissance attack. Preventing other users from accessing a system is a denial of service attack. Attempting to retrieve and modify data, and attempting to escalate access privileges are types of access attacks.

280. Refer to the exhibit. If the switch reboots and all routers have to re-establish OSPF adjacencies, which routers will become the new DR and BDR?



- A. Router R3 will become the DR and router R1 will become the BDR.
- B. Router R4 will become the DR and router R3 will become the BDR.
- C. Router R1 will become the DR and router R2 will become the BDR.
- D. Router R3 will become the DR and router R2 will become the BDR.

*Correct Answer: A*

**Explanation:** OSPF elections of a DR are based on the following in order of precedence:

- highest priority from 1 –255 (0 = never a DR)
- highest router ID
- highest IP address of a loopback or active interface in the absence of a manually configured router ID. Loopback IP addresses take higher precedence than other interfaces.

In this case routers R1 and R3 have the highest router priority. Between the two, R3 has the higher router ID. Therefore, R3 will become the DR and R1 will become the BDR.

**281. The SW1 interface g0/1 is in the down/down state. Which two configurations are valid reasons for the interface conditions? (choose two)**

- A. There is a duplex mismatch
- B. There is a speed mismatch
- C. There is a protocol mismatch
- D. The interface is shut down
- E. The interface is error-disabled

*Correct Answer: BE*

**282. In which two ways does a password manager reduce the chance of a hacker stealing a users password? (Choose two.)**

- A. It automatically provides a second authentication factor that is unknown to the original user.
- B. It uses an internal firewall to protect the password repository from unauthorized access.
- C. It protects against keystroke logging on a compromised device or web site.

- D. It stores the password repository on the local workstation with built-in antivirus and anti-malware functionality.
- E. It encourages users to create stronger passwords.

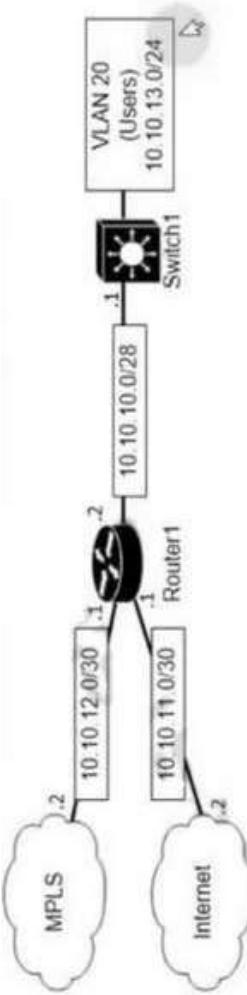
*Correct Answer:* CE

**283. What is the primary purpose of a First Hop Redundancy Protocol?**

- A. It allows directly connected neighbors to share configuration information.
- B. It allows a router to use bridge priorities to create multiple loop-free paths to a single destination.
- C. It reduces routing failures by allowing Layer 3 load balancing between OSPF neighbors that have the same link metric.
- D. It reduces routing failures by allowing more than one router to represent itself, as the default gateway of a network.

*Correct Answer:* D

**284. Refer to the exhibit. Which path is used by the router for internet traffic?**



```
Router#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0
 209.165.200.0/27 is subnetted, 1 subnets
B  209.165.200.224 [20/0] via 10.10.12.2, 00:09:57
  10.0.0.8 is variably subnetted, 4 subnets, 3 masks
    C  10.10.10.0/28 is directly connected, GigabitEthernet0/0
    C  10.10.11.0/30 is directly connected, FastEthernet2/0
    O  10.10.13.0/24 [110/2] via 10.10.10.1, 00:08:34, GigabitEthernet0/0
    C  10.10.12.0/30 is directly connected, GigabitEthernet0/1
S*  0.0.0.0/0 [1/0] via 10.10.11.2
```

```
Switch#show ip route
```

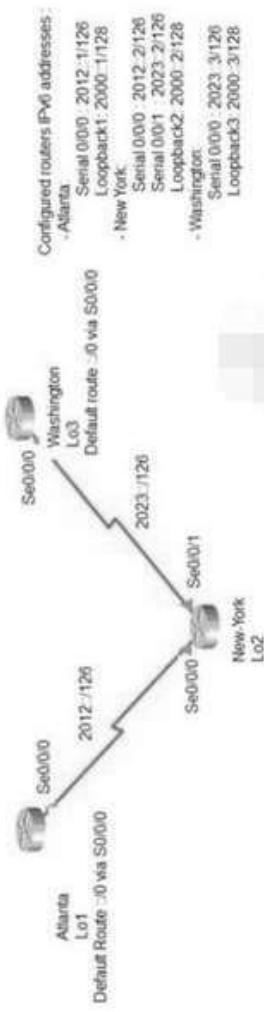
```
Gateway of last resort is not set
  10.0.0.8 is variably subnetted, 2 subnets, 2 masks
    C  10.10.10.0/28 is directly connected, FastEthernet0/1
    C  10.10.13.0/24 is directly connected, VLAN20
```

- A. 209.165.200.0/27
- B. 10.10.10.0/28
- C. 0.0.0.0/0

- D. 10.10.13.0/24

*Correct Answer:C*

285. Refer to Exhibit. The loopback1 interface of the Atlanta router must reach the loopback3 interface of the Washington router. Which two static host routes must be configured on the NEW York router? (Choose two)



- A. ipv6 route 2000::1/128 2012::1
- B. ipv6 route 2000::3/128 2023::3
- C. ipv6 route 2000::3/128 s0/0/0
- D. ipv6 route 2000::1/128 2012::2
- E. ipv6 route 2000::1/128 s0/0/1

*Correct Answer: AB*

286. Refer to the exhibit. A packet is being sent across router R1 to host 172.16.3.14. To which destination does the router send the packet?

```
R1# show ip route | begin gateway
Gateway of last resort is 209.165.200.246 to network 0.0.0.0
S* 0.0.0.0 [1/0] via 209.165.200.246, Serial0/1/0
    is directly connected, Serial0/1/0
172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
  172.16.3.0/24 [1/0] via 207.165.200.250, Serial0/0/0
  0 172.16.3.0/28 [110/84437] via 207.165.200.254, 00:00:28, Serial0/0/1
  207.165.200.0/24 is variably subnetted, 6 subnets, 2 masks
    C 207.165.200.244/30 is directly connected, Serial0/1/0
    L 207.165.200.245/32 is directly connected, Serial0/1/0
    C 207.165.200.248/30 is directly connected, Serial0/0/0
    L 207.165.200.249/32 is directly connected, Serial0/0/0
    C 207.165.200.252/30 is directly connected, Serial0/0/1
    L 207.165.200.253/32 is directly connected, Serial0/0/1
```

- A. 207.165.200.246 via Serial0/1/0
- B. 207.165.200.254 via Serial0/0/0
- C. 207.165.200.254 via Serial0/0/1

- D. 207.165.200.250 via Serial0/0/0

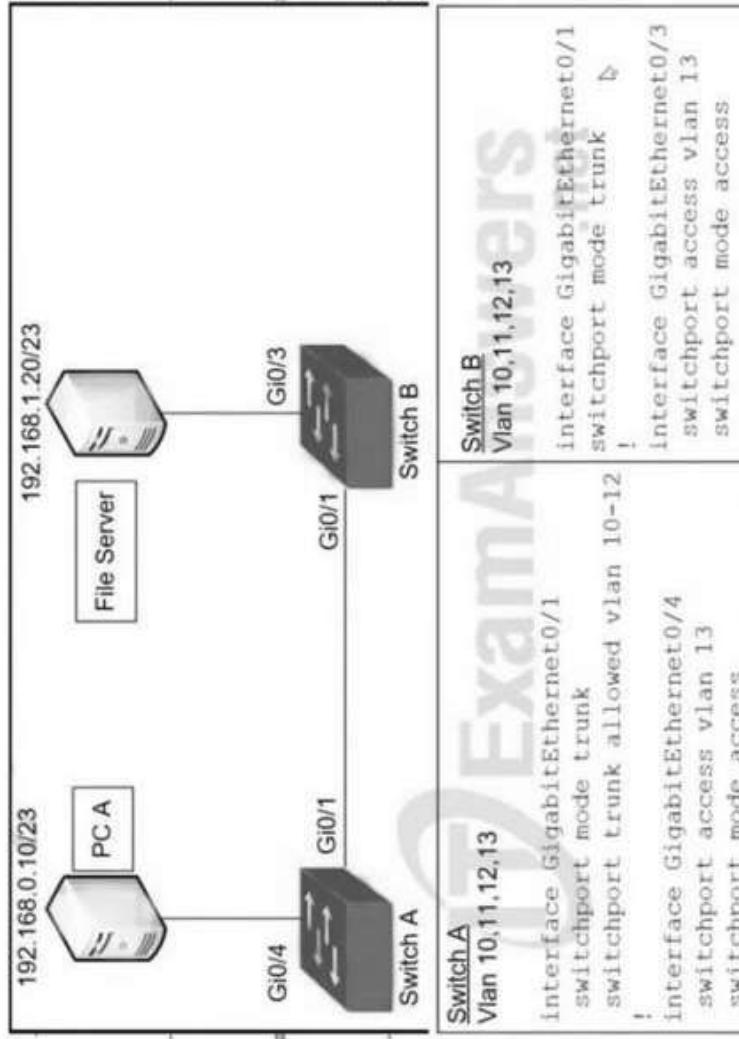
*Correct Answer:C*

**287.** Which goal is achieved by the implementation of private IPv4 addressing on a network?

- A. allows servers and workstations to communicate across public network boundaries
- B. provides a reduction in size of the forwarding table on network routers
- C. allows communication across the Internet to other private networks
- D. provides an added level of protection against Internet exposure

*Correct Answer:D*

**288.** Refer to the exhibit. A network administrator assumes a task to complete the connectivity between PC A and the File Server. Switch A and Switch B have been partially configured with VLANs 10, 11, 12, and 13. What is the next step in the configuration?



- A. Add PDA to VLAN 10 and the File Server to VLAN 11 for VLAN segmentation
- B. Add VLAN 13 to the trunk links on Switch A and Switch B for VLAN propagation
- C. Add a router on a stick between Switch A and Switch B allowing for Inter VLAN routing
- D. Add PC A to the same subnet as the File Server allowing for intra-VLAN communication

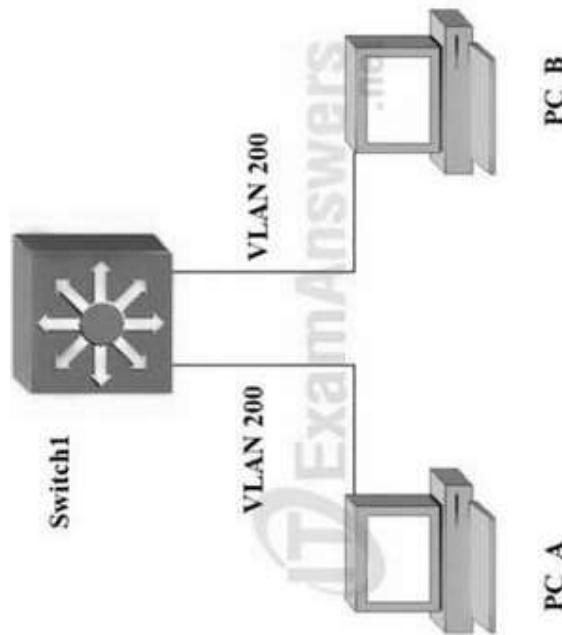
*Correct Answer:*B

289. When a WPA2-PSK WLAN is configured in the Wireless LAN Controller, what is the minimum number of characters that is required in ASCII format?

- A. 6
- B. 8
- C. 12
- D. 18

*Correct Answer:*B

290. Refer to the exhibit. Which outcome is expected when PC\_A sends data to PC\_B?



- A. The switch rewrites the source and destination MAC addresses with its own
- B. The source and destination MAC addresses remain the same
- C. The source MAC address is changed

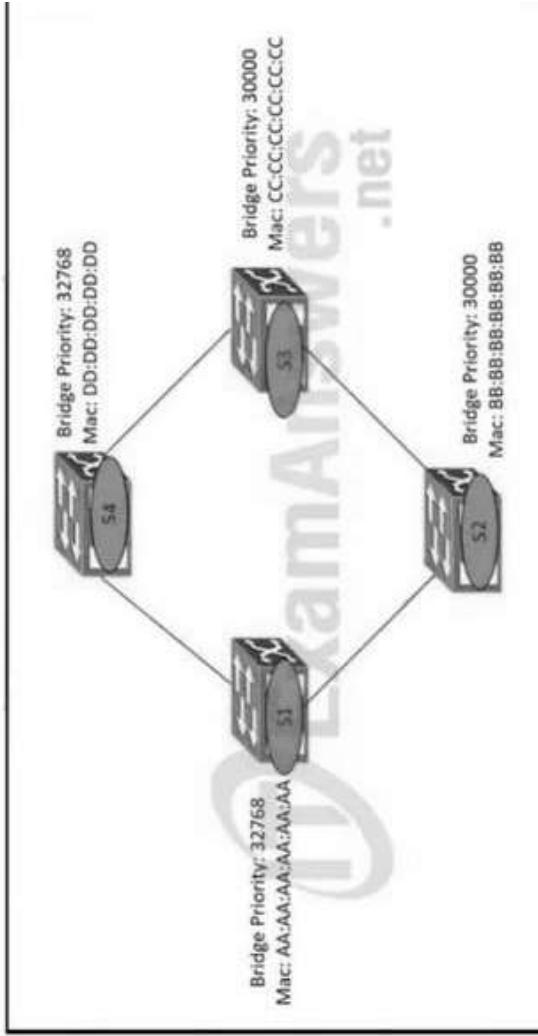
- D. The destination MAC address is replaced with ffff.ffff.ffff

*Correct Answer:B*

291. An engineer needs to configure LLDP to send the port description time length value (TLV). What command sequence must be implemented?
- A. switch#lldp port-description
  - B. switch(config)#lldp port-description
  - C. switch(config-line)#lldp port-description
  - D. switch(config-if)#lldp port-description

*Correct Answer:B*

292. Refer to the exhibit. Which switch becomes the root bridge?



- A. S1
- B. S2
- C. S3
- D. S4

*Correct Answer:B*

293. Refer to the exhibit. What is the next hop address for traffic that is destined to host 10.0.1.5?

```
Router# show ip route
Codes: C - connected, S - static, I - ISGRP, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2, E - EGP
      E1 - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-1-2, * - candidate default
      U - per-user static route, o - OSPF
Gateway of last resort is not set
C 10.0.0.0/8 is directly connected, Loopback0
O 10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
  10.0.1.0/32 [110/100] via 10.0.1.3, 00:39:08, Serial0
  10.0.1.0/24 is directly connected, Serial0
  10.0.1.0/32 [110/5] via 10.0.1.50, 00:39:08, Serial0
  10.0.1.4/32 [110/10] via 10.0.1.4, 00:39:08, Serial0

```

- A. Loopback 0
- B. 10.0.1.4
- C. 10.0.1.50
- D. 10.0.1.3

*Correct Answer:C*

294. When the active router in an HSRP group fails, what router assumes the role and forwards packets?

- A. forwarding
- B. backup
- C. standby
- D. listening

*Correct Answer:C*

295. An organization secures its network with multi-factor authentication using an authenticator app on employee smartphones. How is the applic secured in the case of a user's smartphone being lost or stolen?

- A. The application requires the user to enter a PIN before it provides the second factor
- B. the application challenges a user by requiring an administrator password to reactivate when the smartphone is rebooted
- C. The application requires an administrator password to reactivate after a configured interval
- D. The application verifies that the user is in a specific location before it provides the second factor

*Correct Answer:A*

296. Refer to the exhibit. What action establishes the OSPF neighbor relationship without forming an adjacency?

```
R1# sh ip ospf int gig0/0
Gig0/0 is up, line protocol is up
Internet Address 10.201.24.8/28, Area 1, Attached via Network Statement
Process ID 100, Router ID 192.168.1.1, Network Type BROADCAST, Cost: 1
Topology-MTUID          Cost      Disabled   Shutdown   Topology Name
          0           no        no          no          Base
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 192.168.1.1, Interface address 10.201.24.8
No backup designated router on this network
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
dead-resync timeout 40
Hello due in 00:00:07

R2#sh ip ospf int gig0/0
gig0/0 is up, line protocol is up
Internet Address 10.201.24.1/28, Area 1
Process ID 100, Router ID 172.16.1.1, Network Type BROADCAST, cost: 1
Transmit Delay is 1 sec, State DR, Priority 1
Designated Router (ID) 172.16.1.1, Interface address 10.201.24.1
No backup designated router on this network
Timer intervals configured, Hello 20, Dead 80, Wait 80, Retransmit 5
```

- A. modify priority
- B. modify process ID
- C. modify hello interval
- D. modify network type

*Correct Answer:C*

297. Refer to the exhibit. An engineer booted a new switch and applied this configuration via the console port. Which additional configuration must be applied to allow administrators to authenticate directly to enable privilege mode via Telnet using a local username and password?

```
Switch(config)#hostname R1
R1(config)#interface FastEthernet0/1
R1(config-if)#no switchport
R1(config-if)#ip address 10.100.20.42 255.255.255.0
R1(config-if)#line vty 0 4
R1(config-line)#login
```

- A.  
R1 (config)#username admin  
R1 (config-if)#line vty 0 4  
R1 (config-line)#password p@ss1234

- B.  
R1 (config)#username admin  
R1 (config-if)#line vty 0 4  
R1 (config-line)#password p@ss1234  
R1 (config-line)#transport input telnet
- C.  
R1 (config)#username admin secret p@ss1234  
R1 (config-if)#line vty 0 4  
R1 (config-line)#login local  
R1 (config)#enable secret p@ss1234
- D.  
R1 (config)#username admin privilege 15 secret p@ss1234  
R1 (config-if)#line vty 0 4  
R1 (config-line)#login local

*Correct Answer:D*

298. Refer to the exhibit. Which switch in this configuration will be elected as the root bridge?



SW1: 0C:E0:38:00:36:75  
SW2: 0C:0E:15:22:05:97  
SW3: 0C:0E:15:1A:3C:9D  
SW4: 0C:E0:18:A1:B3:19

- A. SW1
- B. SW2
- C. SW3
- D. SW4

*Correct Answer:C*

299. An engineer is configuring NAT to translate the source subnet of 10.10.0.0/24 to any of three addresses 192.168.3.1, 192.168.3.2, 192.168.3.3 . Which configuration should be used?

A.

```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
route-map permit 10.10.0.0 255.255.0
ip nat outside destination list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

B.

```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.254
ip nat inside source list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

C.

```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.255
ip nat inside source list 1 pool mypool
interface g1/1
ip nat inside
interface g1/2
ip nat outside
```

D.

```
enable
configure terminal
ip nat pool mypool 192.168.3.1 192.168.3.3 prefix-length 30
access-list 1 permit 10.10.0.0 0.0.0.255
ip nat outside destination list 1 pool mypool
interface g1/1
ip nat inside
```

interface g1/2  
ip nat outside

*Correct Answer:C*

300. An office has 8 floors with approximately 30-40 users per floor .What command must be configured on the router Switched Virtual Interface to use address space efficiently?

- A. ip address 192.168.0.0 255.255.0.0
- B. ip address 192.168.0.0 255.255.254.0
- C. ip address 192.168.0.0 255.255.128.0
- D. ip address 192.168.0.0 255.255.255.224

*Correct Answer:B*

301. Which device performs stateful inspection of traffic?

- A. firewall
- B. switch
- C. access point
- D. wireless controller

*Correct Answer:A*

302. What criteria is used first during the root port selection process?

- A. local port ID
- B. lowest path cost to the root bridge
- C. lowest neighbor's bridge ID
- D. lowest neighbor's port ID

*Correct Answer:B*

303. Router R2 is configured with multiple routes to reach network 10.1.1.0/24 from router R1. What protocol is chosen by router R2 to reach the destination network 10.1.1.0/24?

```
R1#config t
R1(config)# interface g1/1
R1(config-if)# ip address 192.168.0.1 255.255.255.0
R1(config)# router bgp 65000
R1(config-router)# neighbor 192.168.0.2 remote-as 65001
R1(config-router)# network 10.1.1.0 mask 255.255.255.0

R1(config)# router ospf 1
R1(config)# router-id 1.1.1.1
R1(config)# network 192.168.0.1 0.0.0.0 area 0
R1(config)# network 10.1.1.0 0.0.0.255 area 0

R1(config)# router eigrp 1
R1(config)# eigrp router-id 1.1.1.1
R1(config)# network 10.1.1.0 0.0.0.255
R1(config)# network 192.168.0.1 0.0.0.0

R2#config t
R2(config-if)# interface g1/1
R2(config-if)# ip address 192.168.0.2 255.255.255.0

R2#config t
R2(config)# router bgp 65001
R2(config)# router bgp 65000
R2(config-router)# neighbor 192.168.0.1 remote-as 65000

R2(config)# router ospf 1
R2(config)# router-id 2.2.2.2
R2(config)# network 192.168.1.2 0.0.0.0 area 0

R2(config)# router eigrp 1
R2(config)# eigrp router-id 1.1.1.1
R2(config)# network 192.168.0.1 0.0.0.0

R2(config)# ip route 10.1.1.0 255.255.0 192.168.0.1
```

- A. eBGP
- B. static
- C. OSPF
- D. EIGRP

*Correct Answer:B*

304. A network administrator enabled port security on a switch interface connected to a printer. What is the next configuration action in order to allow the port to learn the MAC address of the printer and insert it into the table automatically?

- A. enable dynamic MAC address learning
- B. implement static MAC addressing.
- C. enable sticky MAC addressing
- D. implement auto MAC address Learning

*Correct Answer:C*

305. Which configuration ensures that the switch is always the root for VLAN 750?

- A. Switch(config)#spanning-tree vlan 750 priority 38003685
- B. Switch(config)#spanning-tree vlan 750 root primary
- C. Switch(config)#spanning-tree vlan 750 priority 614440
- D. Switch(config)#spanning-tree vlan 750 priority 0

*Correct Answer: D*

**Explanation/Reference:** Although the spanning-tree vlan 10 root primary command will ensure a switch will have a bridge priority value lower than other bridges introduced to the network, the spanning-tree vlan 10 priority 0 command ensures the bridge priority takes precedence over all other priorities.

306. An engineer must configure an OSPF neighbor relationship between router R1 and R3. The authentication configuration has been configured and the connecting interfaces are in the same 192.168 1.0/30 subnet. What are the next two steps to complete the configuration? (Choose two.)
- A. configure the hello and dead timers to match on both sides
  - B. configure the same process ID for the router OSPF process
  - C. configure the same router ID on both routing processes
  - D. Configure the interfaces as OSPF active on both sides.
  - E. configure both interfaces with the same area ID

*Correct Answer: AE*

307. What protocol allows an engineer to back up 20 network router configurations globally while using the copy function?
- A. SMTP
  - B. SNMP
  - C. TCP
  - D. FTP

*Correct Answer: B*

308. Which state does the switch port move to when PortFast is enabled?
- A. learning
  - B. forwarding
  - C. blocking
  - D. listening

*Correct Answer:B*

**309. What are two roles of Domain Name Services (DNS)? (Choose Two)**

- A. builds a flat structure of DNS names for more efficient IP operations
- B. encrypts network Traffic as it travels across a WAN by default
- C. improves security by protecting IP addresses under Fully Qualified Domain Names (FQDNs)
- D. enables applications to identify resources by name instead of IP address
- E. allows a single host name to be shared across more than one IP address

*Correct Answer: DE*

**310. How do TCP and UDP differ in the way they guarantee packet delivery?**

- A. TCP uses checksum, acknowledgement, and retransmissions, and UDP uses checksums only.
- B. TCP uses retransmissions, acknowledgement and parity checks and UDP uses cyclic redundancy checks only.
- C. TCP uses checksum, parity checks, and retransmissions, and UDP uses acknowledgements only.
- D. TCP uses two-dimensional parity checks, checksums, and cyclic redundancy checks and UDP uses retransmissions only.

*Correct Answer:A*

**311. A device detects two stations transmitting frames at the same time. This condition occurs after the first 64 bytes of the frame is received interface counter increments?**

- A. collision
- B. CRC
- C. runt
- D. late collision

*Correct Answer:D*

**312. Which technology is used to improve web traffic performance by proxy caching?**

- A. WSA
- B. Firepower
- C. ASA
- D. FireSIGHT

*Correct Answer: A*

**313.** Using direct sequence spread spectrum, which three 2.4-GHz channels are used to limit collisions?

- A. 1, 6, 11
- B. 1, 5, 10
- C. 1, 2, 3
- D. 5, 6, 7

*Correct Answer: A*

**314.** Which type of attack can be mitigated by dynamic ARP inspection?

- A. worm
- B. malware
- C. DDoS
- D. man-in-the-middle

*Correct Answer: D*

**315.** What are two benefits of controller-based networking compared to traditional networking?

- A. controller-based increases network bandwidth usage, while traditional lightens the load on the network.
- B. controller-based inflates software costs, while traditional decreases individual licensing costs
- C. Controller-based reduces network configuration complexity, while traditional increases the potential for errors
- D. Controller-based provides centralization of key IT functions. While traditional requires distributes management function
- E. controller-based allows for fewer network failure, while traditional increases failure rates.

*Correct Answer: CD*

**Explanation:** Cisco DNA Center Device Management

3. Monitor the cloud for software update
5. Uses CLI templates to apply a consistent configuration to multiple devices at an individual location
6. Uses NetFlow to analyse potential security threats throughout the network and take appropriate action on that traffic Traditional device management
2. Manages device configuration on a per-device basis
4. Security is managed near the perimeter of the network with firewalls, VPNs, and IPS Implements changes via an SSH terminal

**316.** What software defined architecture plane assists network devices with making packet-forwarding decisions by providing Layer 2 reachability and Layer 3 routing information?

- A. data plane
- B. control plane
- C. policy plane
- D. management plane

*Correct Answer:* B

**317.** Which WAN access technology is preferred for a small office / home office architecture?

- A. broadband cable access
- B. frame-relay packet switching
- C. dedicated point-to-point leased line
- D. Integrated Services Digital Network switching.

*Correct Answer:* A

**318.** Refer to the exhibit. Which route type does the routing protocol Code D represent in the output?

```
10.0.0.0/24 is subnetted, 1 subnet(s)
C 10.0.0.0 is directly connected, FastEthernet0/1
C 172.160.0/16 is directly connected, FastEthernet0/0
D 192.168.0.0/24 [90/30720] via 172.16.0.2, 00:00:03, FastEthernet0/0
```

- A. internal BGP route
- B. /24 route of a locally configured IP
- C. statically assigned route
- D. route learned through EIGRP

*Correct Answer:D*

**319.** Which two WAN architecture options help a business scalability and reliability for the network? (Choose two)

- A. asynchronous routing
- B. single-homed branches
- C. dual-homed branches
- D. static routing
- E. dynamic routing

*Correct Answer: AC*

**320.** A wireless administrator has configured a WLAN; however, the clients need access to a less congested 5-GHz network for their voice quality. What action must be taken to meet the requirement?

- A. enable AAA override
- B. enable RX-SOP
- C. enable DTIM
- D. enable Band Select

*Correct Answer:D*

**321.** What mechanism carries multicast traffic between remote sites and supports encryption?

- A. ISATAP
- B. GRE over ipsec
- C. ipsec over ISATAP
- D. GRE

*Correct Answer:B*

**322.** An engineer must establish a trunk link between two switches. The neighboring switch is set to trunk or desirable mode. What action should be taken?

- A. configure switchport nonegotiate
- B. configure switchport mode dynamic desirable
- C. configure switchport mode dynamic auto
- D. configure switchport trunk dynamic desirable

*Correct Answer:C*

**323.** Which type of information resides on a DHCP server?

- A. a list of the available IP addresses in a pool
- B. a list of public IP addresses and their corresponding names
- C. usernames and passwords for the end users in a domain
- D. a list of statically assigned MAC addresses

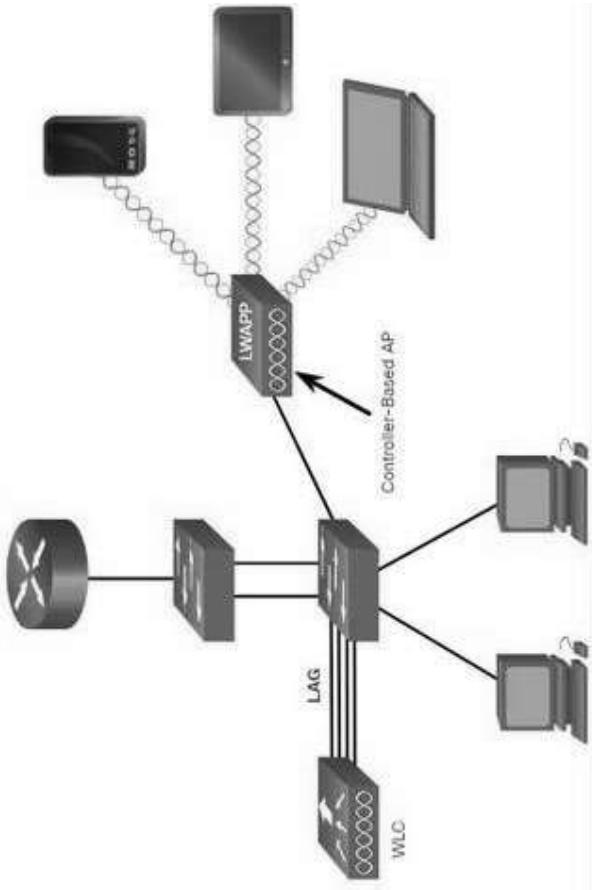
*Correct Answer:A*

**324. What is a function of Wireless LAN Controller?**

- A. register with a single access point that controls traffic between wired and wireless endpoints.
- B. use SSIDs to distinguish between wireless clients.
- C. send LWAPP packets to access points.
- D. monitor activity on wireless and wired LANs

*Correct Answer:C*

**Explanation/Reference:** Lightweight APs (LAPs) is devices require no initial configuration. LAPs use the Lightweight Access Point Protocol (LWAPP) to communicate with a WLAN controller (WLC), as shown in the below figure. Controller-based APs are useful in situations where many APs are required in the network. As more APs are added, each AP is automatically configured and managed by the WLC.



**325. What role does a hypervisor provide for each virtual machine in server virtualization?**

- A. infrastructure-as-a-service.
- B. Software-as-a-service

- C. control and distribution of physical resources
- D. services as a hardware controller.

*Correct Answer:C*

**Explanation/Reference:** The hypervisor creates and manages virtual machines on a host computer and allocates physical system resources to them.

**326. Which technology must be implemented to configure network device monitoring with the highest security?**

- A. syslog
- B. NetFlow
- C. IP SLA
- D. SNMPv3

*Correct Answer:D*

**327. What is the function of a server?**

- A. It transmits packets between hosts in the same broadcast domain.
- B. It provides shared applications to end users.
- C. It routes traffic between Layer 3 devices.
- D. It Creates security zones between trusted and untrusted networks

*Correct Answer:B*

**328. Refer to the exhibit. Which type of configuration is represented in the output?**

```
cisco_ospf_vrf {"R1_default":  
  ensure => 'present',  
  auto_cost => '100',  
}
```

- A. Ansible
- B. JSON
- C. Chef
- D. Puppet

*Correct Answer:* D

**329.** A port security violation has occurred on a switch port due to the maximum MAC address count being exceeded. Which command must be configured to increment the security-violation count and forward an SNMP trap?

- A. switchport port-security violation access
- B. switchport port-security violation protect
- C. switchport port-security violation restrict
- D. switchport port-security violation shutdown

*Correct Answer:* C

**Explanation/Reference:** [Click here](#)

**330.** Which spanning-tree enhancement avoids the learning and listening states and immediately places ports in the forwarding state?

- A. BPDUfilter
- B. PortFast
- C. Backbonefast
- D. BPDUguard

*Correct Answer:* B

**Explanation/Reference:** PortFast

Spanning Tree Portfast causes layer 2 switch interfaces to enter forwarding state immediately, bypassing the listening and learning states. It should be used on ports connected directly to end hosts like servers or workstations. Note: If portfast isn't enabled, DHCP timeouts can occur while STP converges, causing more problems.  
Reference: [Click here](#)

**331.** 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

*Correct Answer: C, E*

**332.** 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 which 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

*Correct Answer:D*

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

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

*Correct Answer:A, D*

**Explanation:** Cisco is very clear about the purpose of this layer. Its only role is to forward traffic, the fastest it can. Here you don't apply any policy, as you must try to reduce the load of the core so it can focus on routing.  
Reference: [Click here](#)

**334.** When using Rapid PVST+, which command guarantees the switch is always the root bridge for VLAN 200?

- A. spanning-tree vlan 200 priority 614440
- B. spanning-tree vlan 200 priority 0
- C. spanning-tree vlan 200 priority 38572422
- D. spanning-tree vlan 200 root primary

*Correct Answer:B*

335. What are two functions of a server on a network? (Choose two)

- A. achieves redundancy by exclusively using virtual server clustering
- B. runs applications that send and retrieve data for workstations that make requests
- C. handles requests from multiple workstations at the same time
- D. runs the same operating system in order to communicate with other servers
- E. housed solely in a data center that is dedicated to a single client

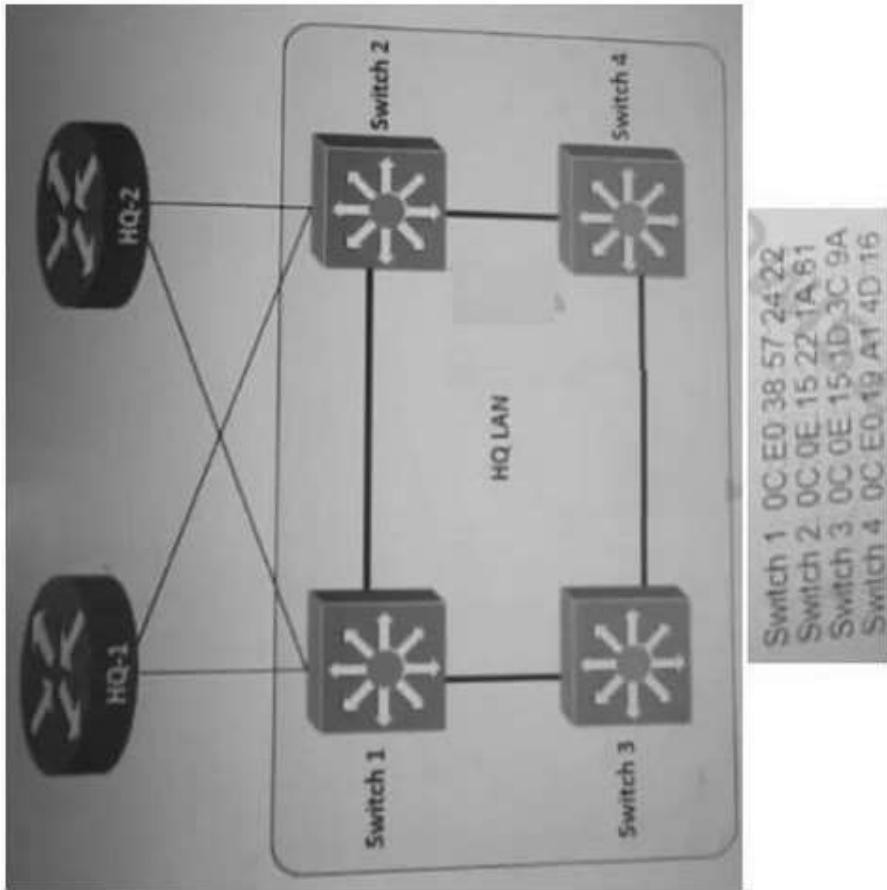
*Correct Answer: B, C*

336. What is the primary function of a Layer 3 device?

- A. to analyze traffic and drop unauthorized traffic from the Internet
- B. to transmit wireless traffic between hosts
- C. to pass traffic between different networks
- D. forward traffic within the same broadcast domain

*Correct Answer: C*

337. Refer to the exhibit. After the election process what is the root bridge in the HQ LAN?



- A. Switch 1
- B. Switch 2
- C. Switch 3
- D. Switch 4

*Correct Answer:C*

**Explanation:** The root bridge is determined by the lowest bridge ID, which consists of the priority value and the MAC address. Because the priority values of all of the switches are not available, the MAC address is used to determine the root bridge. Because S3 has the lowest MAC address, S3 becomes the root bridge.

338. An engineer requires a scratch interface to actively attempt to establish a trunk link with a neighbor switch. What command must be configured?

- A. switchport mode trunk
- B. switchport mode dynamic desirable

- C. switchport mode dynamic auto
- D. switchport nonegotiate

*Correct Answer:B*

**339. What is a function of TFTP in network operations?**

- A. transfers a backup configuration file from a server to a switch using a username and password
- B. transfers files between file systems on a router
- C. transfers a configuration files from a server to a router on a congested link
- D. transfers IOS images from a server to a router for firmware upgrades

*Correct Answer:D*

**340. What are two recommendations for protecting network ports from being exploited when located in an office space outside of an IT closet? (Choose two)**

- A. configure static ARP entries
- B. enable the PortFast feature on ports
- C. implement port-based authentication
- D. configure ports to a fixed speed
- E. shut down unused ports

*Correct Answer: C, E*

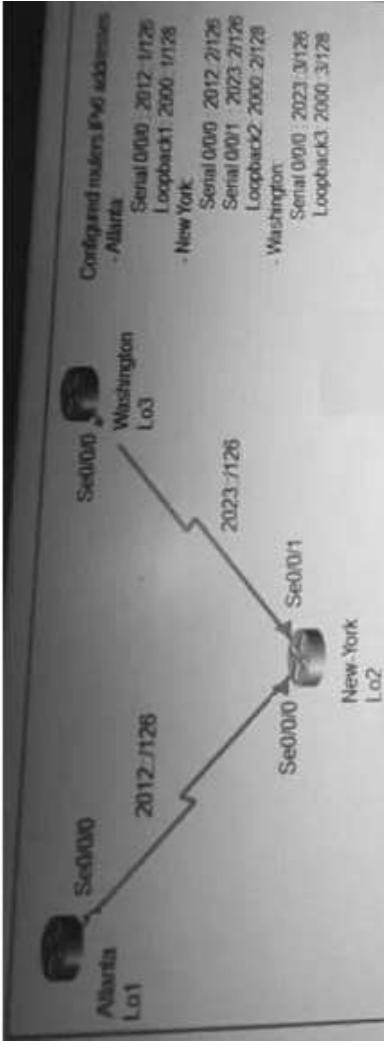
**341. What is a recommended approach to avoid co-channel congestion while installing access points that use the 2.4 GHz frequency?**

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

*Correct Answer:A*

**342. Refer to the exhibit. An engineer configured the New York router with static routes that point to the Atlanta and Washington sites. When command must be configured on the Atlanta and Washington routers so that both sites are able to reach the loopback2 interface**

on the New York router?



- A. ipv6 route ::/0 Serial 0/0/1
- B. ipv6 route 0/0 Serial 0/0/0
- C. ipv6 route ::/0 Serial 0/0/0
- D. ip route 0.0.0.0 0.0.0.0 Serial 0/0/0
- E. ipv6 route ::/0 2000::2

*Correct Answer:C*

**343. What is a function of a remote access VPN?**

- A. used cryptographic tunneling to protect the privacy of data for multiple users simultaneously
- B. used exclusively when a user is connected to a company's internal network
- C. establishes a secure tunnel between two branch sites
- D. allows the users to access company internal network resources through a secure tunnel

*Correct Answer:D*

**344. Which CRUD operation modifies an existing table or view?**

- A. read
- B. create
- C. replace
- D. update

*Correct Answer:D*

**345. What is a DHCP client?**

- A. a workstation that requests a domain name associated with its IP address

- B. a host that is configured to request an IP address automatically
- C. a server that dynamically assigns IP addresses to hosts.
- D. a router that statically assigns IP addresses to hosts.

*Correct Answer:B*

**346. What is the same for both copper and fiber interfaces when using SFP modules?**

- A. They support an inline optical attenuator to enhance signal strength
- B. They provide minimal interruption to services by being hot-swappable
- C. They offer reliable bandwidth up to 100 Mbps in half duplex mode
- D. They accommodate single-mode and multi-mode in a single module

*Correct Answer:B*

**347. When using Rapid PVST+, which command guarantees the switch is always the root bridge for VLAN 200?**

- A. spanning-tree vlan 200 priority 614440
- B. spanning-tree vlan 200 priority 38572422
- C. spanning-tree vlan 200 priority 0
- D. spanning-tree vlan 200 root primary

*Correct Answer:C*

**348. An engineer must configure Interswitch VLAN communication between a Cisco switch and a third-party switch. Which action should be taken?**

- A. configure IEEE 802.1p
- B. configure IEEE 802.1q
- C. configure ISL
- D. configure DSCL

*Correct Answer:B*

**349. Which protocol prompts the Wireless LAN Controller to generate its own local web administration SSL certificate for GUI access?**

- A. HTTPS
- B. RADIUS
- C. TACACS+
- D. HTTP

*Correct Answer: A*

**Explanation:** You can protect communication with the GUI by enabling HTTPS. HTTPS protects HTTP browser sessions by using the Secure Sockets Layer (SSL) protocol. When you enable HTTPS, the controller generates its own local web administration SSL certificate and automatically applies it to the GUI. You also have the option of downloading an externally generated certificate.

Reference:

[https://www.cisco.com/c/en/us/td/docs/wireless/controller/8-0/configuration-guide/b\\_cg80/b\\_cg80\\_chapter\\_011.html](https://www.cisco.com/c/en/us/td/docs/wireless/controller/8-0/configuration-guide/b_cg80/b_cg80_chapter_011.html)

**350. In software defined architectures, which plane is distributed and responsible for traffic forwarding?**

- A. management plane
- B. control plane
- C. policy plane
- D. data plane

*Correct Answer: D*

**351. Which function is performed by the collapsed core layer in a two-tier architecture?**

- A. enforcing routing policies
- B. marking interesting traffic for data polices
- C. attaching users to the edge of the network
- D. applying security policies

*Correct Answer: A*

**352. Where does the configuration reside when a helper address is configured to support DHCP?**

- A. on the router closest to the server
- B. on the router closest to the client
- C. on every router along the path
- D. on the switch trunk interface

*Correct Answer:B*

**353.** Refer to the exhibit. A network administrator must permit SSH access to remotely manage routers in a network. The operations team resides on the 10.20.1.0/25 network. Which command will accomplish this task?

```
interface GigabitEthernet0/1
ip address 192.168.1.2 255.255.255.0
ip access-group 2699 in
!
access-list 2699 deny icmp any 10.10.1.0 0.0.0.255 echo
access-list 2699 deny ip any 10.20.1.0 0.0.0.255
access-list 2699 permit ip any 10.10.1.0 0.0.0.255
access-list 2699 permit tcp any 10.20.1.0 0.0.0.127 eq 22
```

- A. access-list 2699 permit udp 10.20.1.0 0.0.0.255
- B. no access-list 2699 deny tcp any 10.20.1.0 0.0.0.127 eq 22
- C. access-list 2699 permit tcp any 10.20.1.0 0.0.0.255 eq 22
- D. no access-list 2699 deny ip any 10.20.1.0 0.0.0.255

*Correct Answer:D*

**Explanation:** Already a statement is there in last to allow SSH Traffic for network 10.20.1.0 0.0.0.127, but Second statement says deny ip any 10.20.1.0 0.0.0.255, so how it will work once it is denied. So the right answer is remove the — no access-list 2699 deny ip any 10.20.1.0 0.0.0.255.

**354. What is the purpose of traffic shaping?**

- A. to mitigate delays over slow links
- B. to provide fair queuing for buffered flows
- C. to limit the bandwidth that a flow can use to
- D. be a marking mechanism that identifies different flows

*Correct Answer:B*

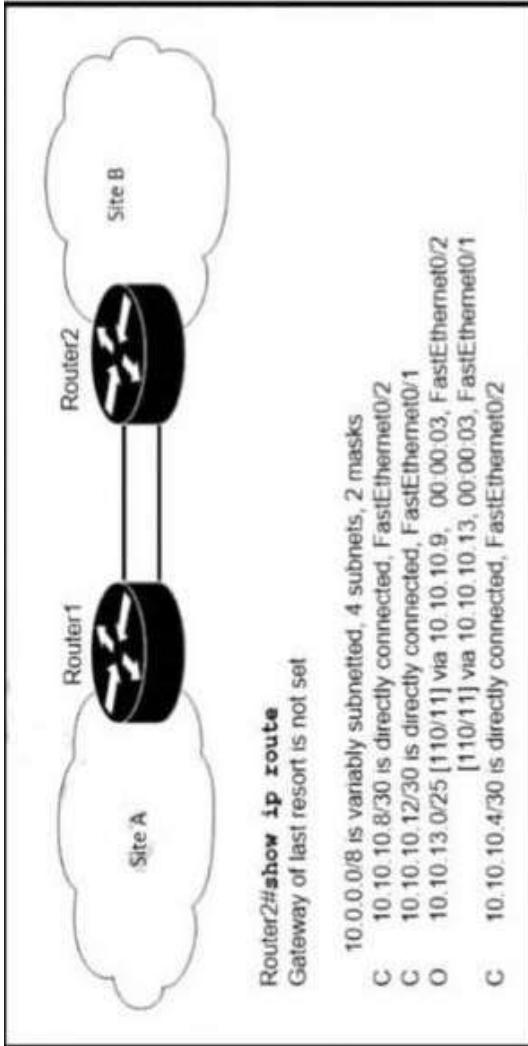
**Explanation:** Traffic shaping retains excess packets in a queue and then schedules the excess for later transmission over increments of time.

**355. Which configuration management mechanism uses TCP port 22 by default when communicating with managed nodes?**

- A. Ansible
- B. Python
- C. Puppet
- D. Chef

*Correct Answer:A*

356. Refer to the exhibit. If OSPF Is running on this network, how does Router2 handle traffic from Site B to 10.10.13.128/25 at Site A?



- A. It load-balances traffic out of Fa0/1 and Fa0/2.
- B. It is unreachable and discards the traffic.
- C. It sends packets out of interface Fa0/2.
- D. It sends packets out of interface Fa0/1.

*Correct Answer:B*

357. Refer to the exhibit. Which command configures a floating static route to provide a backup to the primary link?

```
Router#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2
      i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
      ia - IS-IS inter area, * - candidate default, U - per-user static route
      Gateway of last resort is 209.165.202.131 to network 0.0.0.0

S* 0.0.0.0/0 [1/0] via 209.165.202.131
  209.165.200.0/27 is subnetted, 1 subnets
    S 209.165.200.224 [254/0] via 209.165.202.129
    S 209.165.201.0/27 is subnetted, 1 subnets
      S 209.165.201.0 [1/0] via 209.165.202.130
```

- A. ip route 0.0.0.0 0.0.0 209.165.202.131
- B. ip route 209.165.201.0 255.255.224 209.165.202.130
- C. ip route 0.0.0.0 0.0.0 209.165.200.224
- D. ip route 209.165.200.224 255.255.255.224 209.165.202.129 254

*Correct Answer: D*

358. What is a practice that protects a network from VLAN hopping attacks?

- A. Enable dynamic ARP inspection
- B. Configure an ACL to prevent traffic from changing VLANs
- C. Change native VLAN to an unused VLAN ID
- D. Implement port security on internet-facing VLANs

*Correct Answer: C*

359. Which technology can prevent client devices from arbitrarily connecting to the network without state remediation?

- A. 802.1x
- B. IP Source Guard
- C. MAC Authentication Bypass
- D. 802.11n

*Answer: A*

360. What facilitates a Telnet connection between devices by entering the device name?

- A. SNMP
- B. DNS lookup
- C. syslog
- D. NTP

*Answer:* B

**361. How does the dynamically-learned MAC address feature function?**

- A. The CAM table is empty until ingress traffic arrives at each port
- B. Switches dynamically learn MAC addresses of each connecting CAM table.
- C. The ports are restricted and learn up to a maximum of 10 dynamically-learned addresses
- D. It requires a minimum number of secure MAC addresses to be filled dynamically

*Answer:* A

**362. When implementing a router as a DHCP server, which two features must be configured? (Choose two)**

- A. relay agent information
- B. database agent
- C. address pool
- D. smart-relay
- E. manual bindings

*Answer:* C E

**363. Which command must be entered to configure a DHCP relay?**

- A. ip helper-address
- B. ip address dhcp
- C. ip dhcp pool
- D. ip dhcp relay

*Answer:* A

**364. Where does a switch maintain DHCP snooping information?**

- A. in the MAC address table
- B. in the CAM table
- C. in the binding database

- D. in the frame forwarding database

*Answer: C*

**365.** Which type of security program is violated when a group of employees enters a building using the ID badge of only one person?

- A. intrusion detection
- B. user awareness
- C. physical access control
- D. network authorization

*Answer: C*

**366.** A network administrator needs to aggregate 4 ports into a single logical link which must negotiate layer 2 connectivity to ports on another switch. What must be configured when using active mode on both sides of the connection?

- A. 802.1q trunks
- B. Cisco vPC
- C. LLDP
- D. LACP

*Answer: D*

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

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

*Answer: A*

**368.** Aside from discarding, which two states does the switch port transition through while using RSTP (802.1w)? (Choose two)

- A. listening
- B. blocking

- C. forwarding
- D. learning
- E. speaking

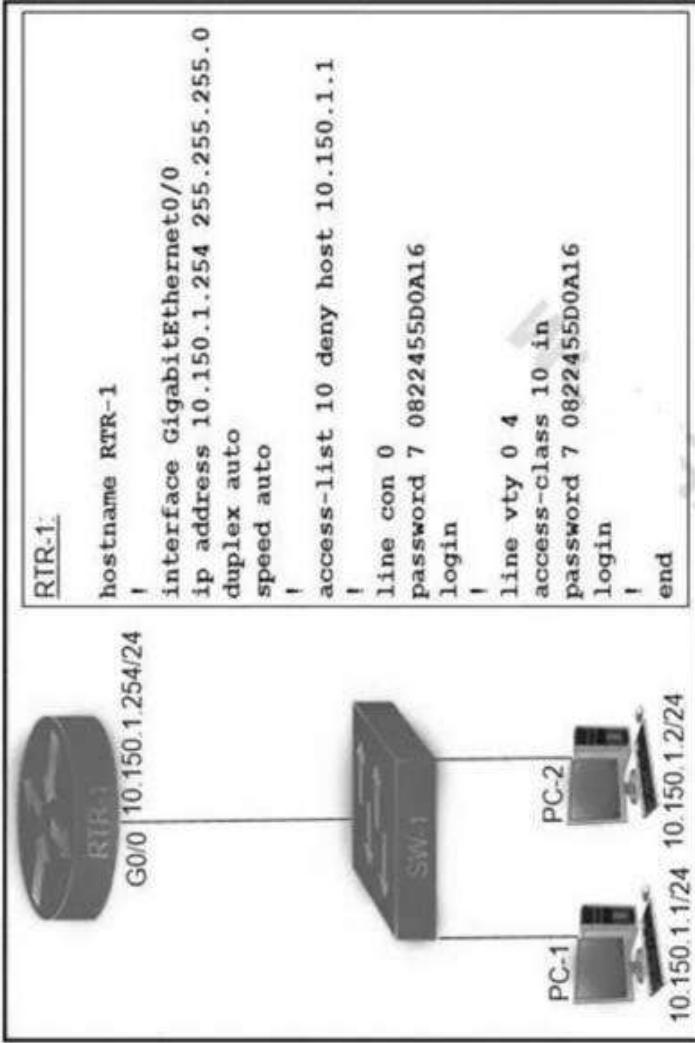
Answer: CD

369. Which state does the switch port move to when PortFast is enabled?

- A. forwarding
- B. listening
- C. blocking
- D. learning

Answer: A

370. Refer to the exhibit. An access list is created to deny Telnet access from host PC-1 to RTR-1 and allow access from all other hosts. A Telnet attempt from PC-2 gives this message: " % Connection refused by remote host." Without allowing Telnet access from PC-1, which action must be taken to permit the traffic?



- A. Add the access-list 10 permit any command to the configuration
- B. Remove the access-class 10 in command from line vty 0 4.
- C. Add the ip access-group 10 out command to interface g0/0.
- D. Remove the password command from line vty 0 4.

*Answer:* A

**371.** What is a role of wireless controllers in an enterprise network?

- A. centralize the management of access points in an enterprise network
- B. support standalone or controller-based architectures
- C. serve as the first line of defense in an enterprise network
- D. provide secure user logins to devices on the network.

*Answer:* A

**372.** What is the effect when loopback interfaces and the configured router ID are absent during the OSPF Process configuration?

- A. No router ID is set, and the OSPF protocol does not run.
- B. The highest up/up physical interface IP address is selected as the router ID.
- C. The lowest IP address is incremented by 1 and selected as the router ID.
- D. The router ID 0.0.0.0 is selected and placed in the OSPF process.

*Answer:* B

**373.** What is recommended for the wireless infrastructure design of an organization?

- A. group access points together to increase throughput on a given channel
- B. configure the first three access points are configured to use Channels 1, 6, and 11
- C. include at least two access points on nonoverlapping channels to support load balancing
- D. assign physically adjacent access points to the same Wi-Fi channel

*Answer:* B

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

- A. action
- B. management

- C. control
- D. data

*Answer:* B

**375. How do servers connect to the network in a virtual environment?**

- A. wireless to an access point that is physically connected to the network
- B. a cable connected to a physical switch on the network
- C. a virtual switch that links to an access point that is physically connected to the network
- D. a software switch on a hypervisor that is physically connected to the network

*Answer:* D

**376. Which CRUD operation corresponds to the HTTP GET method?**

- A. read
- B. update
- C. create
- D. delete

*Answer:* A

**Explanation:** GET: This method retrieves the information identified by the request URI. In the context of the RESTful web services, this method is used to retrieve resources. This is the method used for read operations (the R in CRUD).  
<https://hub.packtpub.com/crud-operations-rest/>

**377. With REST API, which standard HTTP header tells a server which media type is expected by the client?**

- A. Accept-Encoding: gzip, deflate
- B. Accept-Patch: text/example; charset=utf-8
- C. Content-Type: application/json; charset=utf-8
- D. Accept: application/json

*Answer:* D

**Explanation:** Accept header is a way for a client to specify the media type of the response content it is expecting and Content-type is a

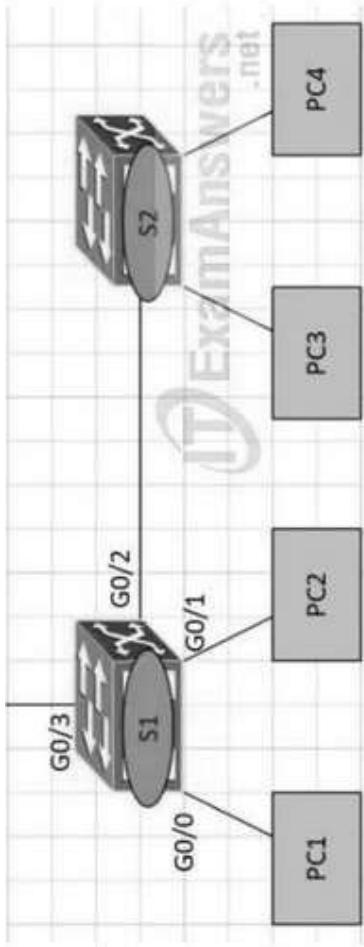
way to specify the media type of request being sent from the client to the server.

378. Which device tracks the state of active connections in order to make a decision to forward a packet through?

- A. wireless access point
- B. firewall
- C. wireless LAN controller
- D. router

*Answer:* B

379. Refer to the exhibit. PC1 is trying to ping PC3 for the first time and sends out an ARP to S1. Which action is taken by S1?



- A. It forwards it out G0/3 only
- B. It is flooded out every port except G0/0.
- C. It drops the frame.
- D. It forwards it out interface G0/2 only.

*Answer:* B

380. Refer to the exhibit. A network administrator has been tasked with securing VTY access to a router. Which access-list entry accomplishes this task?

```
access-list 101 permit ospf any any
access-list 101 permit tcp any any eq 179
access-list 101 permit tcp any eq 179 any
access-list 101 permit gre any any
access-list 101 permit esp any any

access-list 101 deny ospf any any
access-list 101 permit tcp 10.1.1.0 0.0.0.255 172.16.1.0 0.0.0.255 eq telnet
access-list 101 permit udp 10.1.1.0 0.0.0.255 172.16.1.0 0.0.0.255 eq 500
access-list 101 permit udp 10.1.1.0 0.0.0.255 172.16.1.0 0.0.0.255 eq 4500
access-list 101 deny ip any any log
```

```
interface Ethernet0/0
ip address 10.1.1.25 255.255.255.0
ip access-group 101 in
```

- A. access-list 101 permit tcp 10.1.10 0.0.0.255 172.16.10  
0.0.0.255 eq ssh
- B. access-list 101 permit tcp 10.11.0 0.0.0.255 172.16.10  
0.0.0.255 eq scp
- C. access-list 101 permit tcp 10.11.0 0.0.0.255 172.16.10  
0.0.0.255 eq telnet
- D. access-list 101 permit tcp 10.1.10 0.0.0.255 172.16.10  
0.0.0.255 eq https

*Answer: A*

381. A network administrator must enable DHCP services between two sites. What must be configured for the router to pass DHCPDISCOVER messages on to the server?

- A. a DHCP Relay Agent
- B. DHCP Binding
- C. a DHCP Pool
- D. DHCP Snooping

*Answer: A*

382. Which device controls the forwarding of authentication requests for users when connecting to the network using a lightweight access point?

- A. TACACS server
- B. wireless access point
- C. RADIUS server
- D. wireless LAN controller

*Answer: D*

383. Refer to the exhibit. What is the result if Gig1/11 receives an STP BPDU?

```
switch(config)#interface gigabitEthernet 1/11
switch(config-if)#switchport mode access
switch(config-if)#spanning-tree portfast
switch(config-if)#spanning-tree bpduguard enable
```

- A. The port transitions to STP blocking
- B. The port transitions to the root port
- C. The port immediately transitions to STP forwarding.
- D. The port goes into error-disable state

*Answer:* D

384. Which configuration is needed to generate an RSA key for SSH on a router?

- A. Configure the version of SSH
- B. Configure VTY access.
- C. Create a user with a password.
- D. Assign a DNS domain name

*Answer:* D

385. 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

**Explanation:** Point to Point T1 A Point to Point T1 service is a private data connection securely connecting two or more locations with T1 data speeds (1.54Mbps).

386. An engineer must configure traffic for a VLAN that is untagged by the switch as it crosses a trunk link. Which command should be used?

- A. switchport trunk allowed vlan 10
- B. switchport trunk native vlan 10
- C. switchport mode trunk
- D. switchport trunk encapsulation dot1q

*Answer:* B

387. How does a Cisco Unified Wireless network respond to Wi-Fi channel overlap?

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

*Answer:* D

388. What does a switch use to build its MAC address table?

- A. VTP
- B. DTP
- C. egress traffic
- D. ingress traffic

*Answer:* D

389. Which network plane is centralized and manages routing decisions?

- A. policy plane
- B. management plane
- C. control plane
- D. data plane

*Answer:* C

390. What does a router do when configured with the default DNS lookup settings, and a URL is entered on the CLI?

- A. initiates a ping request to the URL
- B. prompts the user to specify the desired IP address
- C. continuously attempts to resolve the URL until the command is cancelled
- D. sends a broadcast message in an attempt to resolve the URL

*Answer:* D

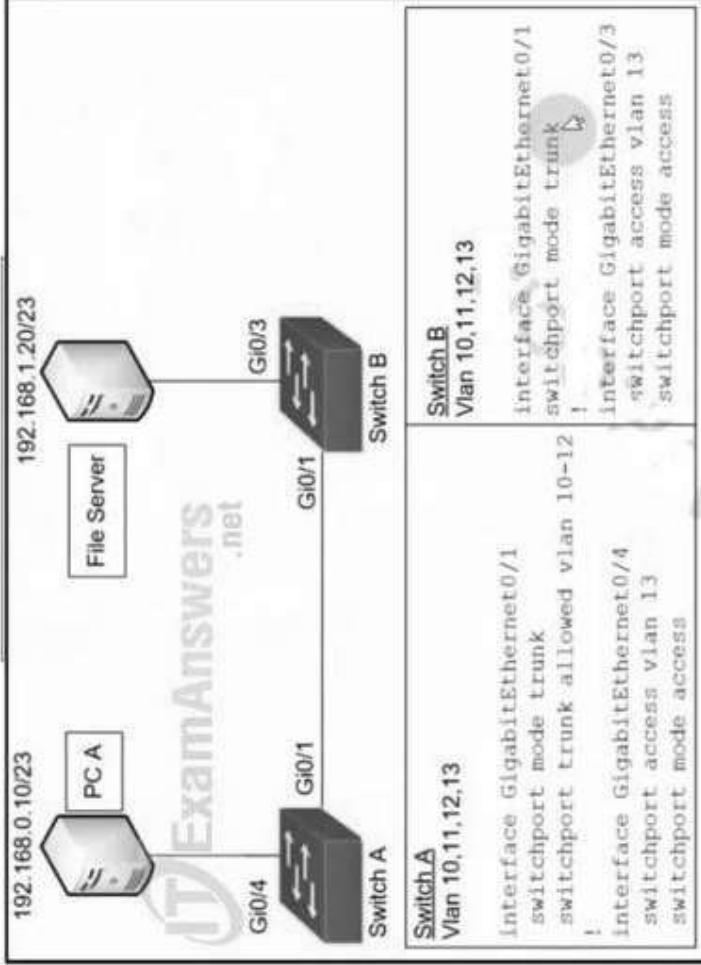
391. What is a DNS lookup operation?

- A. DNS server pings the destination to verify that it is available
- B. serves requests over destination port 53
- C. DNS server forwards the client to an alternate IP address when the primary IP is down
- D. responds to a request for IP address to domain name resolution to the DNS server

*Answer:* D

392. Refer to the exhibit. A network engineer must configure communication between PC A and the File Server. To prevent interruption for any other communications, which command must be

configured?



- A. Switch trunk allowed vlan 12
- B. Switchport trunk allowed vlan none
- C. Switchport trunk allowed vlan add 13
- D. Switchport trunk allowed vlan remove 10-11

Answer: C

393. What is a characteristic of a SOHO network?

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

Correct Answer: B

394. Which resource is able to be shared among virtual machines deployed on the same physical server?

- A. disk
- B. applications
- C. VM configuration file

- D. operating system

*Correct Answer:A*

395. Which implementation provides the strongest encryption combination for the wireless environment?
- A. WPA2 + AES
  - B. WPA + AES
  - C. WEP
  - D. WPA + TKIP

*Correct Answer:A*

396. Refer to the exhibit. After running the code in the exhibit, which step reduces the amount of data that the NETCONF server returns to the NETCONF client, to only the interface's configuration?

```
import ncclient  
  
with ncclient.manager.connect(host='192.166.1.1', port=830, username='root',  
                             password='teset123', allow_agent=False) as m:  
    print(m.get_config('running').data_xml)
```

- A. Use the lxml library to parse the data returned by the NETCONF server for the interface's configuration.
- B. Create an XML filter as a string and pass it to get\_config() method as an argument.
- C. Create a JSON filter as a string and pass it to the get\_config() method as an argument.
- D. Use the JSON library to parse the data returned by the NETCONF server for the interface's configuration.

*Correct Answer:D*

397. What is an appropriate use for private IPv4 addressing?

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

*Correct Answer:D*

398. What are two functions of an SDN controller? (Choose two)

- A. Layer 2 forwarding
- B. coordinating VTNs
- C. tracking hosts
- D. managing the topology
- E. protecting against DDoS attacks

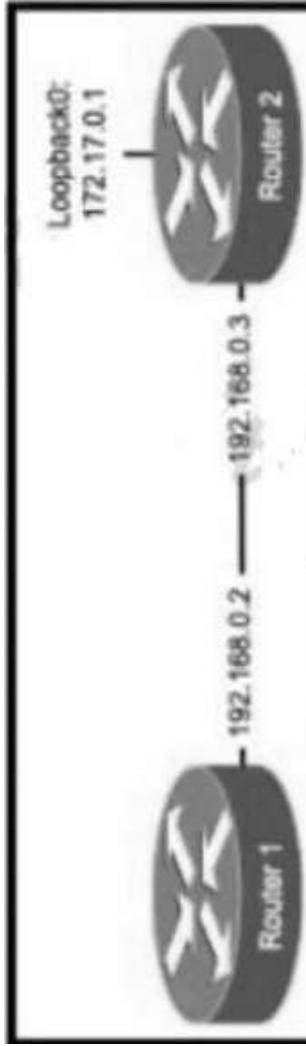
*Correct Answer:* BD

399. If a switch port receives a new frame while it is actively transmitting a previous frame, how does it process the frames?

- A. The new frame is delivered first, the previous frame is dropped, and a retransmission request is sent.
- B. The previous frame is delivered, the new frame is dropped, and a retransmission request is sent.
- C. The new frame is placed in a queue for transmission after the previous frame.
- D. The two frames are processed and delivered at the same time.

*Correct Answer:* C

400. Refer to the exhibit. The ntp server 192.168.0.3 command has been configured on router 1 to make it an NTP client of router 2. Which command must be configured on router 2 so that it operates in server-only mode and relies only on its internal clock?



- A. Router2(config)#ntp passive
- B. Router2(config)#ntp server 172.17.0.1
- C. Router2(config)#ntp master 4
- D. Router2(config)#ntp server 192.168.0.2

*Correct Answer:* D

401. Which WAN topology provides a combination of simplicity quality, and availability?

- A. partial mesh
- B. full mesh
- C. point-to-point
- D. hub-and-spoke

*Correct Answer:C*

402. Why does a switch flood a frame to all ports?

- A. The frame has zero destination MAC addresses.
- B. The source MAC address of the frame is unknown
- C. The source and destination MAC addresses of the frame are the same
- D. The destination MAC address of the frame is unknown.

*Correct Answer:D*

403. When DHCP is configured on a router, which command must be entered so the default gateway is automatically distributed?

- A. default-router
- B. default-gateway
- C. ip helper-address
- D. dns-server

*Correct Answer:A*

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

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

*Correct Answer:C*

405. How is the native VLAN secured in a network?

- A. separate from other VLANs within the administrative domain
- B. give it a value in the private VLAN range
- C. assign it as VLAN 1
- D. configure it as a different VLAN ID on each end of the link

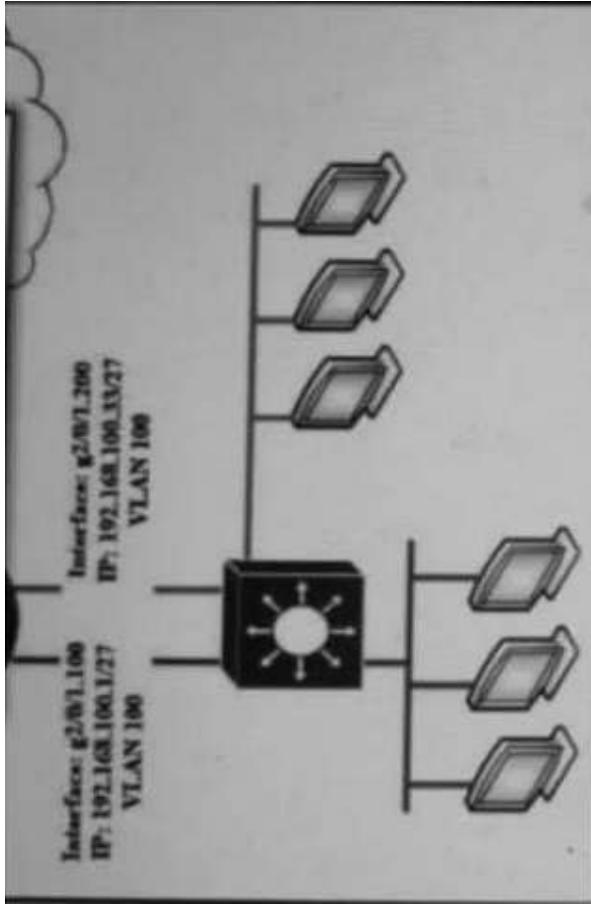
*Correct Answer:A*

406. Which command on a port enters the forwarding state immediately when a PC is connected to it?

- A. switch(config)#spanning-tree portfast default
- B. switch(config)#spanning-tree portfast bpduguard default
- C. switch(config-if)#spanning-tree portfast trunk
- D. switch(config-if)#no spanning-tree portfast

*Correct Answer:A*

407. Refer to Exhibit. Which configuration must be applied to the router that configures PAT to translate all addresses in VLAN 200 while allowing devices on VLAN 100 to use their own IP addresses?



```
Router1(config)#access-list 99 permit 209.165.201.2 0.0.0.0
Router1(config)arp nat inside source list 99 interface gi1/0/0 overload
Router1(config)ip interface gi2/0/1.200
Router1(config-if)#ip nat inside
Router1(config)ip interface gi1/0/0
Router1(config-if)#ip nat outside

Router1(config)#access-list 99 permit 209.165.201.2 255.255.255.255
Router1(config)arp nat inside source list 99 interface gi1/0/0 overload
Router1(config)ip interface gi2/0/1.200
Router1(config-if)#ip nat inside
Router1(config)ip interface gi1/0/0
Router1(config-if)#ip nat outside

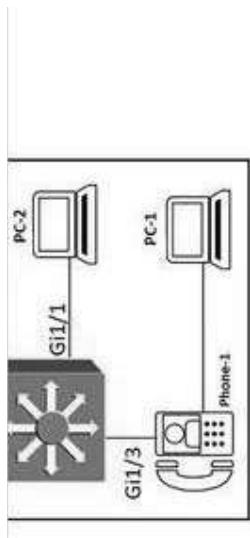
Router1(config)#access-list 99 permit 192.168.100.0 0.0.0.255
Router1(config)arp nat inside source list 99 interface gi1/0/0 overload
Router1(config)ip interface gi2/0/1.200
Router1(config-if)#ip nat inside
Router1(config)ip interface gi1/0/0
Router1(config-if)#ip nat outside

Router1(config)#access-list 99 permit 192.168.100.32 0.0.0.31
Router1(config)arp nat inside source list 99 interface gi1/0/0 overload
Router1(config)ip interface gi2/0/1.200
Router1(config-if)#ip nat inside
Router1(config)ip interface gi1/0/0
Router1(config-if)#ip nat outside
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

*Correct Answer:D*

408. Refer to the exhibit. An administrator must configure interfaces Gi1/1 and Gi1/3 on switch SW11 PC-1 and PC-2 must be placed in the Data VLAN and Phone-1 must be placed in the Voice VLAN Which configuration meets these requirements?



① Interface gigabitethernet1/1

switchport mode access  
switchport access vlan 8

Interface gigabitethernet1/3

switchport mode access  
switchport access vlan 8

Interface gigabitethernet1/1

switchport mode access  
switchport access vlan 9

Interface gigabitethernet1/3

switchport mode trunk  
switchport trunk vlan 8

Interface gigabitethernet1/1

switchport mode access  
switchport access vlan 8

Interface gigabitethernet1/3

switchport mode access  
switchport access vlan 8

Interface gigabitethernet1/1

switchport mode access  
switchport access vlan 9

Interface gigabitethernet1/3

switchport mode trunk  
switchport trunk vlan 8

Interface gigabitethernet1/1

switchport mode access  
switchport access vlan 9

Interface gigabitethernet1/3

switchport mode trunk  
switchport trunk vlan 8

switchport voice vlan 9

- A. Option A

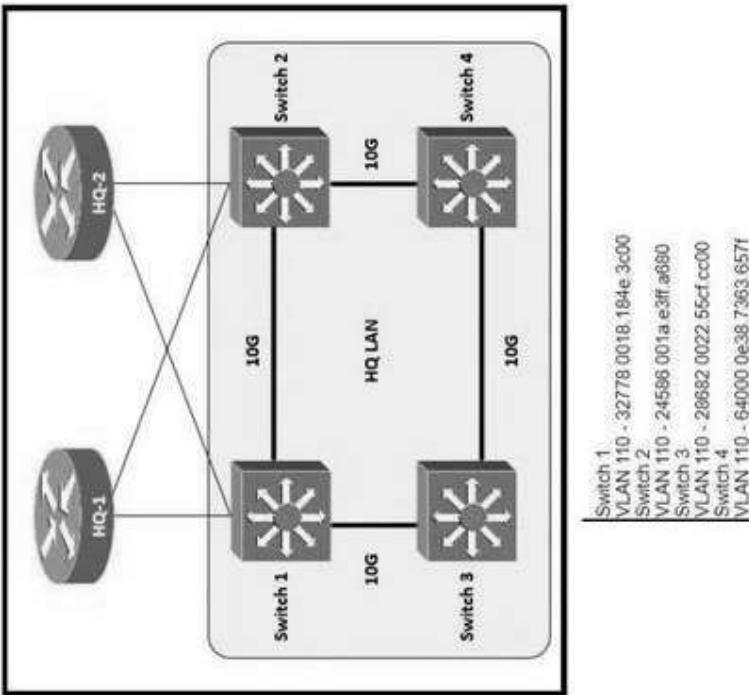
- B. Option B

- C. Option C

- D. Option D

*Correct Answer:C*

409. Refer to the exhibit. Which switch becomes the root of the spanning tree for VLAN 110?



- A. Switch 1
- B. Switch 2
- C. Switch 3
- D. Switch 4

*Correct Answer:B*

410. What is a benefit of VRRP?

- A. It provides traffic load balancing to destinations that are more than two hops from the source.
- B. It provides the default gateway redundancy on a LAN using two or more routers.
- C. It allows neighbors to share routing table information between each other.
- D. It prevents loops in a Layer 2 LAN by forwarding all traffic to a root bridge, which then makes the final forwarding decision.

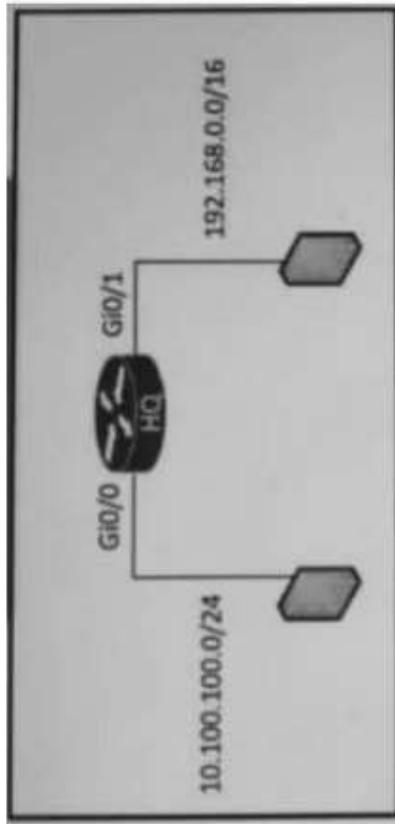
*Correct Answer:B*

411. Which protocol does an IPv4 host use to obtain a dynamically assigned IP address?

- A. ARP
- B. DHCP
- C. CDP
- D. DNS

*Correct Answer: B*

412. Refer to the exhibit. An access list is required to permit traffic from any host on interface G0/0 and deny traffic from interface G/0/1. Which access list must be applied?



```
ip access-list standard 99  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.0.255.255
```

```
ip access-list standard 99  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.255.255.255
```

```
ip access-list standard 199  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.255.255.255
```

```
ip access-list standard 199  
permit 10.100.100.0 0.0.0.255  
deny 192.168.0.0 0.0.255.255
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

*Correct Answer:A*

**413.** How does a switch process a frame received on Fa0/1 with the destination MAC address of 0e38.7363.657b when the table is missing the address?

- A. It drops the frame immediately.
- B. It forwards the frame back out of interface Fa0/1.
- C. It floods the frame to all interfaces except Fa0/1.
- D. It holds the frame until the MAC address timer expires and then drops the frame.

*Correct Answer:C*

**414.** Which condition must be met before an NMS handles an SNMP trap from an agent?

- A. The NMS software must be loaded with the MIB associated with the trap.
- B. The NMS must be configured on the same router as the SNMP agent
- C. The NMS must receive a trap and an inform message from the SNMP agent within a configured interval
- D. The NMS must receive the same trap from two different SNMP agents to verify that it is reliable.

*Correct Answer:A*

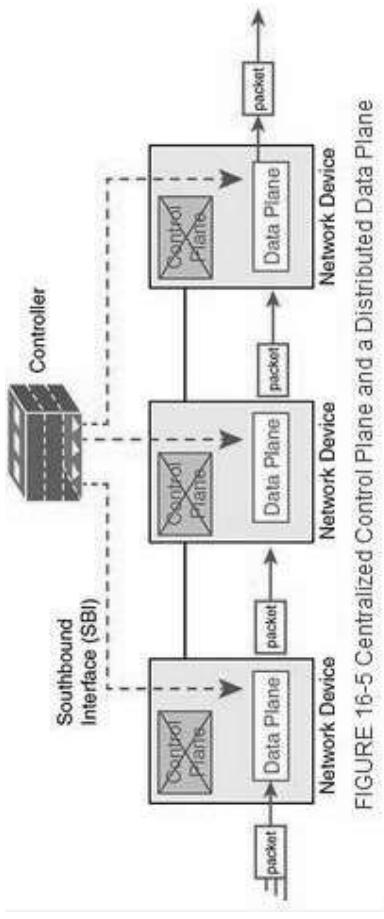
**415.** What is the purpose of a southbound API in a control based networking architecture?

- A. Facilities communication between the controller and the applications
- B. Facilities communication between the controller and the networking hardware
- C. allows application developers to interact with the network
- D. integrates a controller with other automation and orchestration tools.

*Correct Answer:B*

## Explanation: The Southbound Interface

In a controller-based network architecture, the controller needs to communicate to the networking devices. In most network drawings and architecture drawings, those network devices typically sit below the controller, as shown in Figure 16–5. There is an interface between the controller and those devices, and given its location at the bottom part of drawings, the interface came to be known as the southbound interface, or SBI, as labeled in Figure 16–5.



416. Which switch technology establishes a network connection immediately when it is plugged in?

- A. PortFast
- B. BPDU guard
- C. UplinkFast
- D. BackboneFast

*Correct Answer:C*

417. What causes a port to be placed in the err-disabled state?

- A. latency
- B. port security violation
- C. shutdown command issued on the port
- D. nothing plugged into the port

*Correct Answer:B*

**Explanation:** This mode is the default violation mode; when in this mode, the switch will automatically force the switchport into an error disabled (err-disabled) state when a violation occurs. While in

this state, the switchport forwards no traffic. The switchport can be brought out of this error disabled state by issuing the errdisable recovery cause CLI command or by disabling and reenabling the switchport.

**418. An engineer needs to add an old switch back into a network. To prevent the switch from corrupting the VLAN database which action must be taken?**

- A. Add the switch in the VTP domain with a lower revision number
- B. Add the switch with DTP set to dynamic desirable
- C. Add the switch in the VTP domain with a higher revision number
- D. Add the switch with DTP set to desirable

*Correct Answer:A*

**419. Which JSON data type is an unordered set of attribute-value pairs?**

- A. array
- B. string
- C. object
- D. Boolean

*Correct Answer:C*

**420. What occurs when overlapping Wi-Fi channels are implemented?**

- A. The wireless network becomes vulnerable to unauthorized access.
- B. Wireless devices are unable to distinguish between different SSIDs
- C. Users experience poor wireless network performance.
- D. Network communications are open to eavesdropping.

*Correct Answer:C*

**421. Which technology allows for multiple operating systems to be run on a single host computer?**

- A. virtual routing and forwarding
- B. network port ID visualization
- C. virtual device contexts

- D. Server Virtualization

*Correct Answer: D*

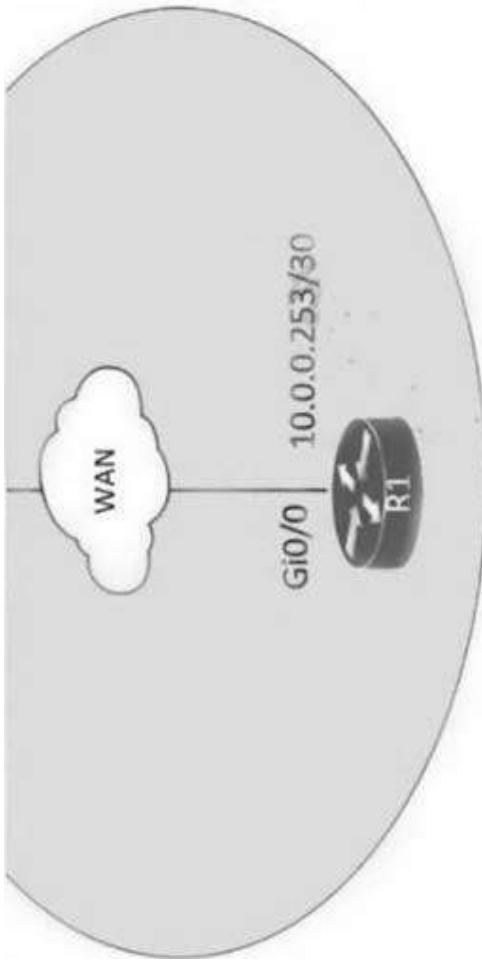
422. Which two QoS tools provides congestion management? (Choose two)

- A. CAR
- B. CBWFQ
- C. PQ
- D. PBR
- E. FRTS

*Correct Answer: BC*

**Explanation:** Type of queuing methods are available:  
\* First-In-First-Out (FIFO)  
\* Priority Queuing (PQ)  
\* Custom Queuing (CQ)  
\* Weighted Fair Queuing (CBWFQ)  
\* LowLatency Queuing (LLQ)

423. Refer to the exhibit. An administrator must turn off the Cisco Discovery Protocol on the port configured with address last usable address in the 10.0.0.0/30 subnet. Which command set meets the requirement?



- A. interface gi0/1  
no cdp enable
- B. interface gi0/1  
clear cdp table

- C. interface gi0/0  
no cdp advertise-v2
- D. interface gi0/0  
no cdp run

*Correct Answer:A*

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

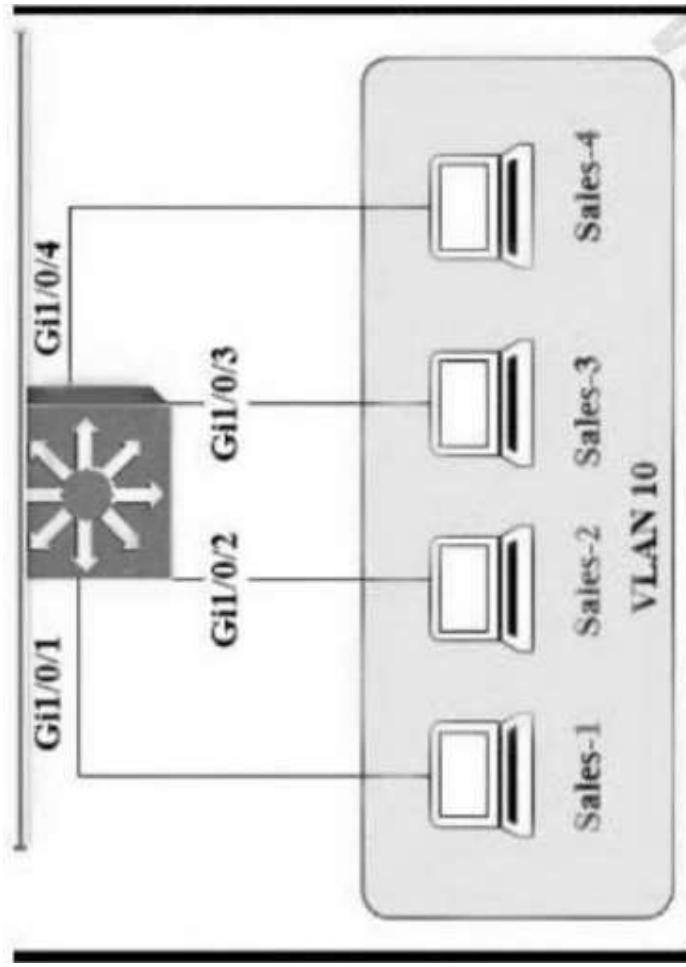
- A. connect wireless devices to a wired network
  - B. support secure user logins to devices or the network
  - C. integrate with SNMP in preventing DDoS attacks
  - D. serve as a first line of defense in an enterprise network
- Correct Answer:A*

425. What is a similarity between OM3 and OM4 fiber optic cable?

- A. Both have a 50 micron core diameter
- B. Both have a 9 micron core diameter
- C. Both have a 62.5 micron core diameter
- D. Both have a 100 micron core diameter

*Correct Answer:A*

426. Refer to the exhibit.



The entire contents of the MAC address table are shown. Sales-4 sends a data frame to Sales-1.

Sales-SW#show mac-address-table  
Mac Address Table

VLAN	MAC Address	Type	Ports
10	000c.8590.bb7d	DYNAMIC	Gi1/0/1
10	3910.4161.9bb7	DYNAMIC	Gi1/0/2
10	00d0.d3b6.957c	DYNAMIC	Gi1/0/3

What does the switch do as it receives the frame from Sales-4?

- A. Perform a lookup in the MAC address table and discard the frame due to a missing entry.
- B. Insert the source MAC address and port into the forwarding table and forward the frame to Sales-1.
- C. Map the Layer 2 MAC address to the Layer 3 IP address and forward the frame.
- D. Flood the frame out of all ports except on the port where Sales-1 is connected.

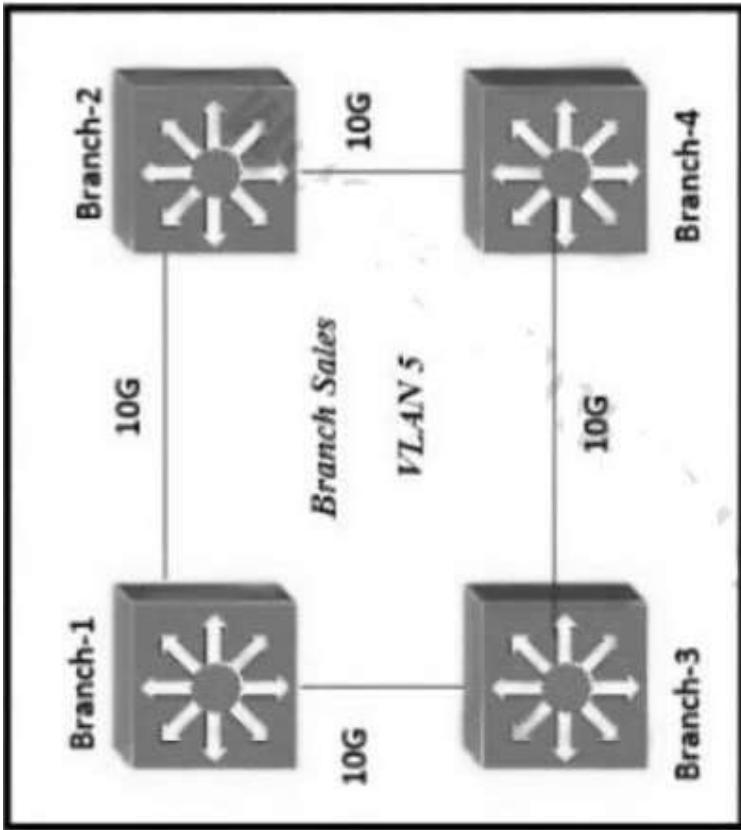
*Correct Answer:B*

427. What describes the operation of virtual machines?

- A. Virtual machines are responsible for managing and allocating host hardware resources
- B. In a virtual machine environment, physical servers must run one operating system at a time.
- C. Virtual machines are the physical hardware that support a virtual environment.
- D. Virtual machines are operating system instances that are decoupled from server hardware

*Correct Answer:D*

428. Refer to the exhibit. Only four switches are participating in the VLAN spanning-tree process.



Branch-1 priority 614440

Branch-2: priority 39082416

Branch-3: priority 0

Branch-4: root primary

Which switch becomes the permanent root bridge for VLAN 5?

- A. Branch-1
- B. Branch-2
- C. Branch-3
- D. Branch-4

*Correct Answer:C*

**Explanation:** Dynamic ARP inspection is an ingress security feature; it does not perform any egress checking.

**429. When deploying syslog, which severity level logs informational message?**

- A. 0
- B. 2
- C. 4
- D. 6

*Correct Answer:D*

430. 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?

```
SiteA#show interface TengigabitEthernet0/1/0
TengigabitEthernet0/1/0 is up, line protocol is up
Hardware is BUILT-IN-EPA-8x10G, address is 700c.f02a.0b91 (bia 780a.f02b.0b91)
Description: Connection to SiteB
Internet address is 10.10.10.1/30
MTU 9146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
reliability 166/255, txload 1/255, rxload 1/255
Full Duplex, 1000Mbps, 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

SiteA#show interface TengigabitEthernet0/1/0
TengigabitEthernet0/1/0 is up, line protocol is up
Hardware is BUILT-IN-EPA-8x10G, address is 700c.f02c.0b26 (bia 780c.f02c.0b26)
Description: Connection to SiteA
Internet address is 10.10.10.2/30
MTU 9146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
reliability 255/255, txload 1/255, rxload 1/255
Full Duplex, 1000Mbps, 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
```

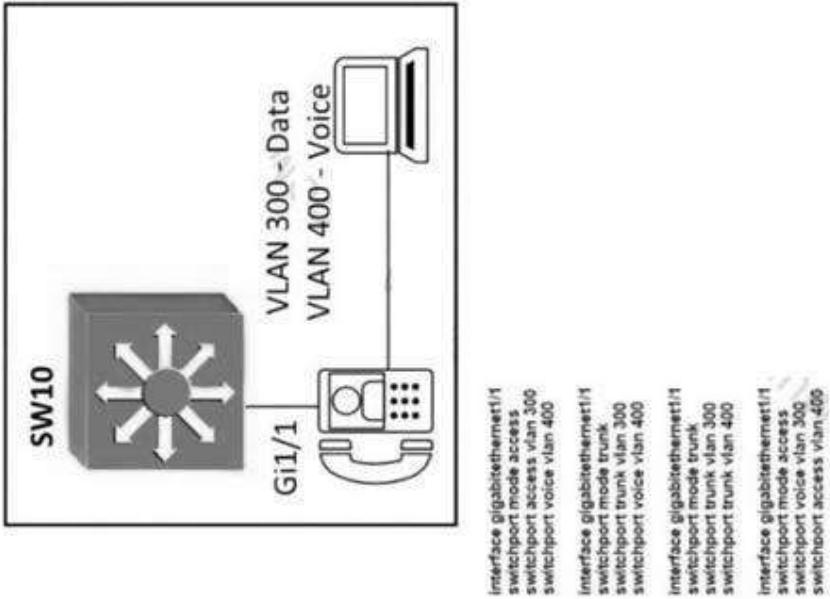
- A. Interface errors are incrementing
- B. An incorrect SFP media type was used at SiteA
- C. High usage is causing high latency
- D. The sites were connected with the wrong cable type

*Correct Answer:A*

**Explanation:** reliability 255/255: 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.

431. Refer to the exhibit. An engineer must configure GigabitEthernet1/1 to accommodate voice and data traffic. Which

configuration accomplishes this task?



- A. Option A
- B. Option B
- C. Option C
- D. Option D

*Correct Answer: A*

432. Which technology is appropriate for communication between an SDN controller and applications running over the network?

- A. OpenFlow
- B. REST API
- C. NETCONF
- D. Southbound API

*Correct Answer: B*

433. Which security program element involves installing badge readers on data-center doors to allow workers to enter and exit based on their job roles?

- A. role-based access control
- B. biometrics
- C. multifactor authentication
- D. physical access control

*Correct Answer:D*

434. Which network action occurs within the data plane?

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

*Correct Answer:A*

435. Which networking function occurs on the data plane?

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

*Correct Answer:A*

436. A network administrator must to configure SSH for remote access to router R1. The requirement is to use a public and private key pair to encrypt management traffic to and from the connecting client.

Which configuration, when applied, meets the requirements?

```
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate rsa modulus 2048  
  
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate rsa modulus 1024  
  
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate rsa modulus 1024  
  
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key encrypt rsa name myKey
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

*Correct Answer: B*

437. Which protocol does an access point use to draw power from a connected switch?

- A. Internet Group Management Protocol
- B. Adaptive Wireless Path Protocol
- C. Cisco Discovery Protocol
- D. Neighbor Discovery Protocol

*Correct Answer: C*

438. What is the benefit of using FHRP?

- A. reduced management overhead on network routers
- B. balancing traffic across multiple gateways in proportion to their loads
- C. higher degree of availability
- D. reduced ARP traffic on the network

*Correct Answer: C*

439. An administrator must secure the WLC from receiving spoofed association requests. Which steps must be taken to configure the WLC

to restrict the requests and force the user to wait 10 ms to retry an association request?

- A. Enable Security Association Teardown Protection and set the SA Query timeout to 10
- B. Enable MAC filtering and set the SA Query timeout to 10
- C. Enable 802.1x Layer 2 security and set the Comeback timer to 10
- D. Enable the Protected Management Frame service and set the Comeback timer to 10

*Correct Answer:D*

440. 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 2001:0db8:0000:0500:000a:400F:583B. Which command must be issued on the interface?

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

*Correct Answer:B*

441. What does an SDN controller use as a communication protocol to relay forwarding changes to a southbound API?

- A. OpenFlow
- B. Java
- C. REST
- D. XML

*Correct Answer:A*

442. What uses HTTP messages to transfer data to applications residing on different hosts?

- A. OpenFlow
- B. OpenStack
- C. OpFlex
- D. REST

*Correct Answer:D*

**443.** When a WLAN with WPA2 PSK is configured in the Wireless LAN Controller GUI which format is supported?

- A. Unicode
- B. base64
- C. decimal
- D. ASCII

*Correct Answer:D*

**444.** Which 802.11 management frame type is sent when a client roams between access points on the same SSID?

- A. Reassociation Request
- B. Probe Request
- C. Authentication Request
- D. Association Request

*Correct Answer:A*

**445.** 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. Re- Anchor Roamed Clients
- B. 11ac MU-MIMO
- C. 802.11n Split Tunnel
- D. Client Band Select

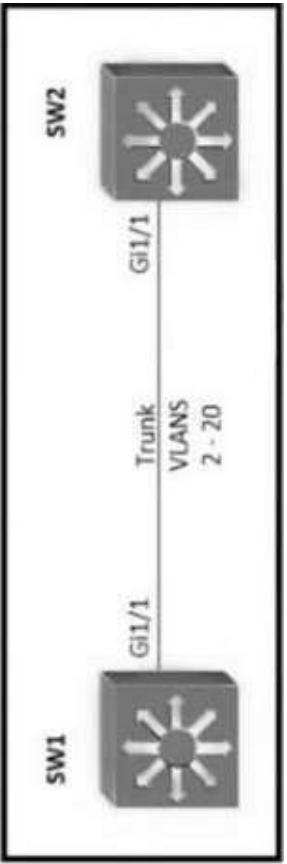
*Correct Answer:D*

**446.** What is a characteristic of private IPv4 addressing?

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

*Correct Answer:D*

**447.** Refer to the exhibit. Which command must be executed for Gigabit 1 on SW1 to become a trunk port if Gigabit 1 on SW2 is configured in desirable or trunk mode?



- A. switchport mode trunk
- B. switchport mode dot1-tunnel
- C. switchport mode dynamic auto
- D. switchport mode dynamic desirable

*Correct Answer: C*

448. What are two improvements provided by automation for network management in an SDN environment? (Choose two)

- A. Data collection and analysis tools establish a baseline for the network
- B. Artificial intelligence identifies and prevents potential design failures.
- C. Machine learning minimizes the overall error rate when automating troubleshooting processes
- D. New devices are onboarded with minimal effort
- E. Proprietary Cisco APIs leverage multiple network management tools.

*Correct Answer: BC*

449. An engineer must configure the IPv6 address 2001:0db8:0000:0000:0700:0003:400F:572B on the serial0/0 interface of the HQ router and wants to compress it for easier configuration. Which command must be issued on the router interface?

- A. ipv6 address 2001:0db8::700:3:400F:572B
- B. ipv6 address 2001:0db8:0::700:3:4F:572B
- C. ipv6 address 2001:0db8::7:3:4F:572B
- D. ipv6 address 2001::0db8:0000::700:3:400F:572B

*Correct Answer: A*

450. Which WLC port connects to a switch to pass normal access-point traffic?

- A. redundancy
- B. console
- C. distribution system
- D. service

*Correct Answer:C*

451. An engineering team asks an implementer to configure syslog for warning conditions and error conditions. Which command does the implementer configure to achieve the desired result?

- A. logging trap 5
- B. logging trap 2
- C. logging trap 4
- D. logging trap 3

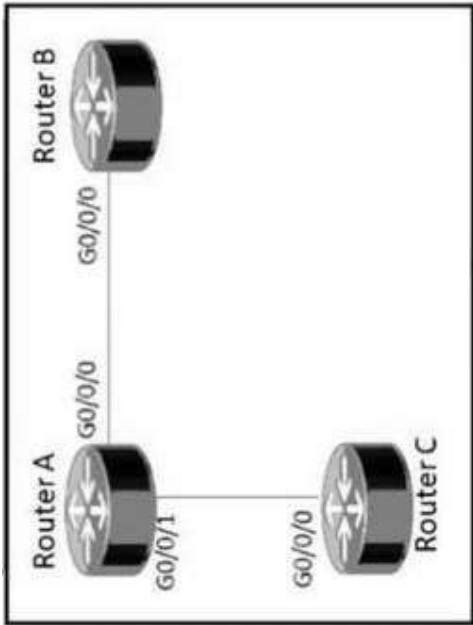
*Correct Answer:C*

452. Which two protocols are supported on service-port interfaces?  
(Choose two.)

- A. RADIUS
- B. TACACS+
- C. SCP
- D. Telnet
- E. SSH

*Correct Answer: DE*

453. Refer to the exhibit. How must router A be configured so that it only sends Cisco Discovery Protocol Information to router C?



```
⑤ #config !
Router A (config)#cdp run
Router A (config)#no cdp enable
⑥ #config !
Router A (config)#cdp run
Router A (config)#interface g0/0/0
Router A (config)#cdp enable
⑦ #config !
Router A (config)#cdp run
Router A (config)#interface g0/0/1
Router A (config)#cdp enable
⑧ #config !
Router A (config)#no cdp run
Router A (config)#interface g0/0/1
Router A (config)#cdp enable
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

*Answer:* A

454. Which global command encrypt all passwords in the running configuration?

- A. password-encrypt
- B. enable password-encryption
- C. enable secret
- D. service password-encryption

*Answer:* D

455. What is the function of a hub-and-spoke WAN topology?

- A. allows access restrictions to be implemented between subscriber sites.
- B. provides direct connections between subscribers
- C. supports Layer 2 VPNs
- D. supports application optimization

*Answer:* B

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

*Correct Answer:* A

**457.** Which two components are needed to create an Ansible script that configures a VLAN on a switch? (Choose two.)

- A. cookbook
- B. task
- C. playbook
- D. model
- E. recipe

*Correct Answer:* B C

**Explanation:** Ansible playbooks: “files that provide actions and logic about what Ansible should do.” “The playbook will list tasks and choices based on those results, like “Configure all branch routers in these locations, and if errors occur for any device, do these extra tasks for that device” .”

**458.** Refer to the exhibit. Which two prefixes are included in this routing table entry? (Choose two.)

```
R2#show ip route  
C 192.168.1.0/26 is directly connected, FastEthernet0/1
```

- A. 192.168.1.17
- B. 192.168.1.61

- C. 192.168.1.64
- D. 192.168.1.127
- E. 192.168.1.254

*Correct Answer:* BC

**459. Which two primary drivers support the need for network automation? (Choose two.)**

- A. Eliminating training needs
- B. Increasing reliance on self-diagnostic and self-healing
- C. Policy-derived provisioning of resources
- D. Providing a single entry point for resource provisioning
- E. Reducing hardware footprint

*Correct Answer:* C D

**460. What is a characteristic of cloud-based network topology?**

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

*Correct Answer:* C

**461. A network analyst is tasked with configured the date and time on a router using EXEC mode. The date must be set to 12:00am. Which command should be used?**

- A. Clock timezone
- B. Clock summer-time-recurring
- C. Clock summer-time date
- D. Clock set

*Correct Answer:* D

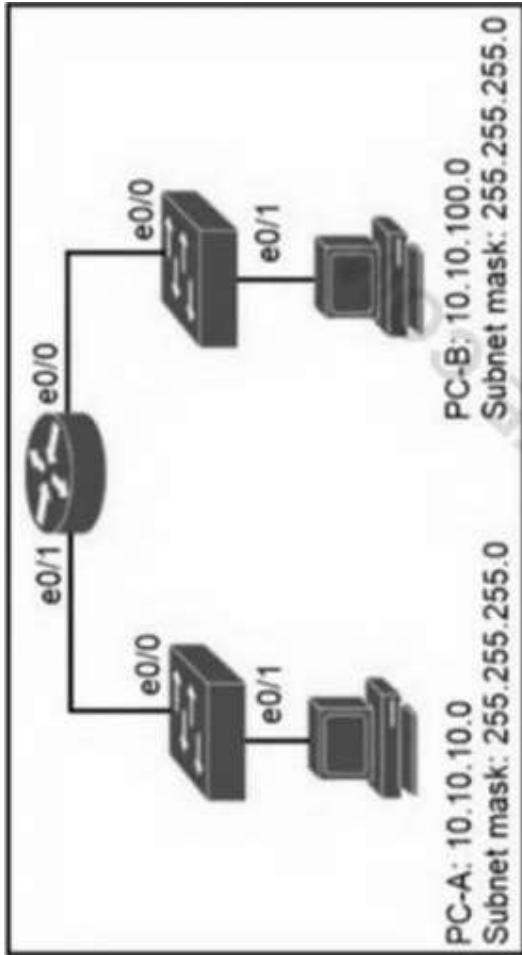
**462. Which HTTP status code is returned after a successful REST API request?**

- A. 200
- B. 301

- C. 404
- D. 500

*Correct Answer:* A

463. Refer to the exhibit. When PC-A sends traffic to PC-B, which network component is in charge of receiving the packet from PC-A verifying the IP addresses, and forwarding the packet to PC-B?



- A. Layer 2 switch
- B. Router
- C. Load balancer
- D. firewall

*Correct Answer:* B

464. 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 centralizes the data plane for the network.
- C. It is the card on a core router that maintains all routing decisions for a campus.
- D. It is a pair of core routers that maintain all routing decisions for a campus

*Correct Answer:* A

465. Refer to the exhibit. Which action is taken by the router when a packet is sourced from 10.10.10.2 and destined for 10.10.10.16?

Router#show ip route	
Gateway of last resort is not set	
	209.165.200.0/27 is subnetted, 1 subnets
B	209.165.200.224 [20/0] via 10.10.12.2, 00:09:57
	10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C	10.10.10.0/26 is directly connected, GigabitEthernet0/0
C	10.10.11.0/30 is directly connected, FastEthernet2/0
O	10.10.13.0/24 [110/2] via 10.10.10.1, 00:09:34, GigabitEthernet0/0
C	10.10.12.0/30 is directly connected, GigabitEthernet0/1

- A. It uses a route that is similar to the destination address
  - B. It discards the packets.
  - C. It floods packets to all learned next hops.
  - D. It queues the packets waiting for the route to be learned.

*Correct Answer:* B

**Explanation:** Referring to routing table, network from 10.10.0-10.10.15. Gateway of last resort is not set

So traffic destined to 10.10.10.16 will be discarded.

466. When a switch receives a frame for a known destination MAC address, how is the frame handled?

- A. sent to the port identified for the known MAC address
  - B. broadcast to all ports
  - C. forwarded to the first available port
  - D. flooded to all ports except the one from which it originated

*Correct Answer:* A

**Explanation/Reference:** A switch builds its MAC address table by recording the MAC address of each device connected to each of its ports. The switch uses the information in the MAC address table to send frames destined for a specific device out the port, which has been assigned to that device.

Reference: [Click here](#)

467. Why was the RFC 1918 address space defined?

- A. conserve public IPv4 addressing
  - B. preserve public IPv6 address space

- C. reduce instances of overlapping IP addresses
- D. support the NAT protocol

*Correct Answer: A*

468. Refer to the exhibit. R5 is the current DR on the network, and R4 is the BDR. Their interfaces are flapping, so a network engineer wants the OSPF network to elect a different DR and BDR. Which set of configurations must the engineer implement?

R3# show ip ospf neighbor					
Neighbor ID	Pri	State	Dead Time	Address	Interface
1.1.1.1	1	2WAY/BROTHER	00:00:32	172.16.10.1	Gi0/0
2.2.2.2	1	2WAY/BROTHER	00:00:33	172.16.10.2	Gi0/0
4.4.4.4	1	FULL/DR	00:00:31	172.16.10.4	Gi0/0
5.5.5.5	1	FULL/DR	00:00:30	172.16.10.5	Gi0/0

- A)   
R2(config) interface g0/0  
R2(config-if)# ospf priority 20  
R2(config) interface g0/0  
R2(config-if)# ospf priority 10
- B)   
R2(config) interface g0/0  
R2(config-if)# ospf priority 259  
R2(config) interface g0/0  
R2(config-if)# ospf priority 256
- C)   
R2(config) interface g0/0  
R2(config-if)# ospf priority 120  
R2(config) interface g0/0  
R2(config-if)# ospf priority 110
- D)   
R2(config) interface g0/0  
R2(config-if)# ospf priority 245  
R2(config) interface g0/0  
R2(config-if)# ospf priority 240

- A. Option
- B. Option
- C. Option
- D. Option

*Correct Answer: D*

469. After installing a new Cisco ISE server, which task must the engineer perform on the Cisco WLC to connect wireless clients on a specific VLAN based on their credentials?

- A. Enable the allow AAA Override
- B. Enable the Event: Driven RRM.
- C. Disable the LAG Mode or Next Reboot.
- D. Enable the Authorized MIC APs against auth-list or AAA.

*Correct Answer:* A

470. Which level of severity must be set to get informational syslogs?

- A. alert
- B. critical
- C. notice
- D. debug

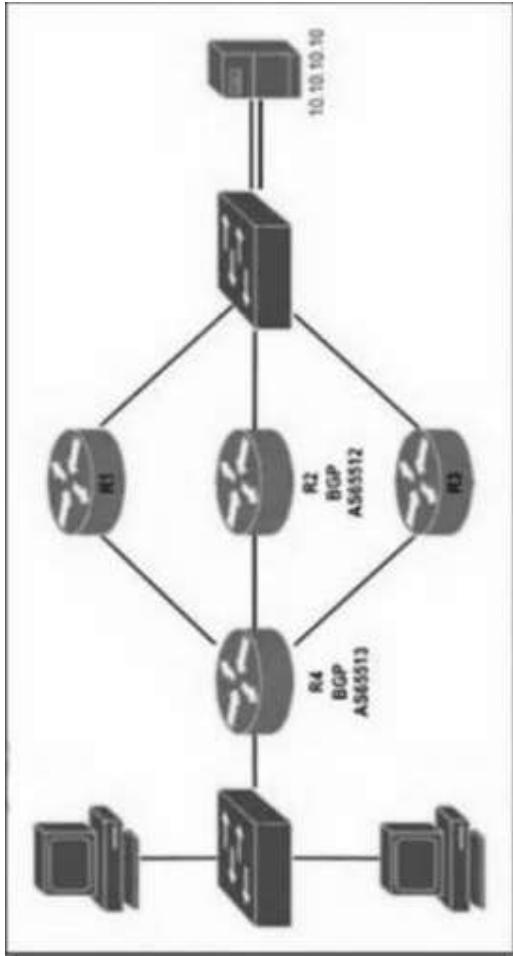
*Correct Answer:* D

**Explanation/Reference:** Specifying a level causes messages at that level and numerically lower levels to be displayed at the destination.

From Table 3 : informational level = 6, debugging level = 7, notice/notifications level = 5  
Reference: [Click here](#)

471. Refer to the exhibit. Router R4 is dynamically learning the path to the server. If R4 is connected to R1 via OSPF Area 20, to R2 via R2 BGP, and to R3 via EIGRP 777, which path is installed in the

routing table of R4?



- A. the path through R1, because the OSPF administrative distance is 110
- B. the path through R2, because the IBGP administrative distance is 200
- C. the path through R2 because the EBGP administrative distance is 20
- D. the path through R3, because the EIGRP administrative distance is lower than OSPF and BGP

*Correct Answer: C*

472. What is a function of the Cisco DNA Center Overall Health Dashboard?

- A. It provides a summary of the top 10 global issues.
- B. It provides detailed activity logging for the 10 devices and users on the network.
- C. It summarizes the operational status of each wireless device on the network.
- D. It summarizes daily and weekly CPU usage for servers and workstations in the network.

*Correct Answer: A*

473. Which protocol requires authentication to transfer a backup configuration file from a router to a remote server?

- A. DTP
- B. FTP

- C. SMTP
- D. TFTP

*Correct Answer:* B

**474. Where is the interface between the control plane and data plane within the softwaredefined architecture?**

- A. control layer and the infrastructure layer
- B. application layer and the infrastructure layer
- C. control layer and the application layer
- D. application layer and the management layer

*Correct Answer:* A

**475. Which action does the router take as it forwards a packet through the network?**

- A. The router replaces the source and destination labels with the sending router interface label as a source and the next hop router label as a destination
- B. The router encapsulates the source and destination IP addresses with the sending router IP address as the source and the neighbor IP address as the destination
- C. The router replaces the original source and destination MAC addresses with the sending router MAC address as the source and neighbor MAC address as the destination
- D. The router encapsulates the original packet and then includes a tag that identifies the source router MAC address and transmit transparently to the destination

*Correct Answer:* C

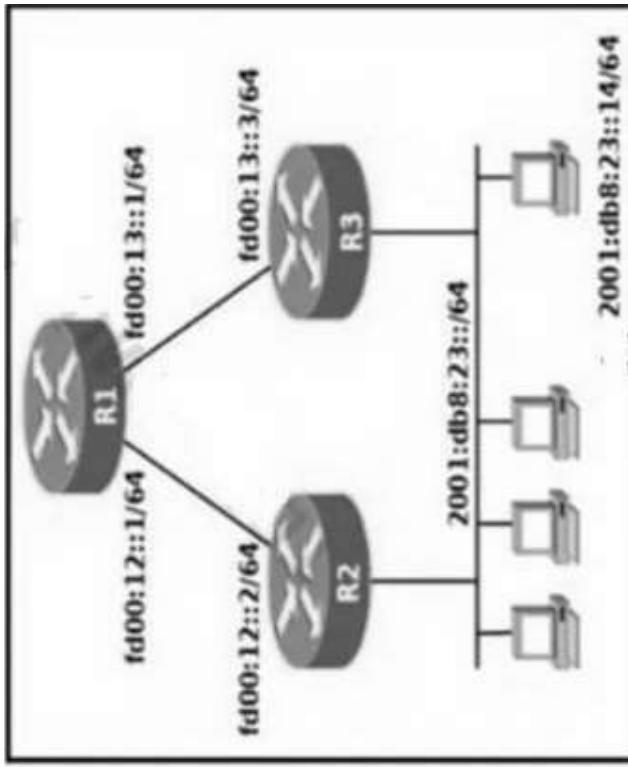
**476. When a site-to-site VPN is configured, which IPsec mode provides encapsulation and encryption of the entire original P packet?**

- A. IPsec tunnel mode with AH
- B. IPsec transport mode with AH
- C. IPsec tunnel mode with ESP
- D. IPsec transport mode with ESP

*Correct Answer:* C

477. Refer to the exhibit. Which two commands, when configured on router R1, fulfill these requirements? (Choose two.)  
Packets towards the entire network 2001:db8:2::/64 must be forwarded through router R2.

Packets toward host 2001:db8:23::14 preferably must be forwarded through R3.



- A. Ipv6 route 2001:db8:23::/128 fd00:12::2
- B. Ipv6 route 2001:db8:23::14/128 fd00:13::3
- C. Ipv6 route 2001:db8:23::14/64 fd00:12::2
- D. Ipv6 route 2001:db8:23::/64 fd00:12::2
- E. Ipv6 route 2001:db8:23::14/64 fd00:12::2 200

*Correct Answer:* B D

**Explanation/Reference:** We choose option B instead of option D because the destination is a host. Therefore, we use a host route meaning that all bits of the ipv6 destination address must match (prefix-length of /128). Also, the next hop address should be that of R3 (fd00:13::3) since the question asks that packets for the host must be forwarded through it.

478. What is the role of a firewall in an enterprise network?

- A. Forwards packets based on stateless packet inspection
- B. Processes unauthorized packets and allows passage to less secure segments of the network

- C. determines which packets are allowed to cross from unsecured to secured networks
- D. explicitly denies all packets from entering an administrative domain

*Correct Answer:* C

**479. What is the benefit of configuring PortFast on an interface?**

- A. After the cable is connected, the interface uses the fastest speed setting available for that cable type
- B. After the cable is connected, the interface is available faster to send and receive user data
- C. The frames entering the interface are marked with higher priority and then processed faster by a switch.
- D. Real-time voice and video frames entering the interface are processed faster

*Correct Answer:* B

**480. How are VLAN hopping attacks mitigated?**

- A. enable dynamic ARP inspection
- B. manually implement trunk ports and disable DTP
- C. activate all ports and place in the default VLAN
- D. configure extended VLANs

*Correct Answer:* B

**481. Which two protocols must be disabled to increase security for management connections to a Wireless LAN Controller? (Choose two)**

- A. Telnet
- B. SSH
- C. HTTP
- D. HTTPS
- E. TFTP

*Correct Answer:* A C

**482. When a client and server are not on the same physical network, which device is used to forward requests and replies between client and server for DHCP?**

- A. DHCP relay agent

- B. DHCP server
- C. DHCPDISCOVER
- D. DHCPOFFER

*Correct Answer:* A

**483.** Which QoS tool is used to optimize voice traffic on a network that is primarily intended for data traffic?

- A. FIFO
- B. WFQ
- C. PQ
- D. WRED

*Correct Answer:* C

**484.** On workstations running Microsoft Windows, which protocol provides the default gateway for the device?

- A. DHCP
- B. STP
- C. SNMP
- D. DNS

*Correct Answer:* A

**485.** What is the purpose of using First Hop Redundancy Protocol in a specific subnet?

- A. Filter traffic based on destination IP addressing
- B. Sends the default route to the hosts on a network
- C. ensures a loop-free physical topology
- D. forwards multicast hello messages between routers

*Correct Answer:* D  
Source: [Click here](#)

**486.** 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. UDP sets up a connection between both devices before transmitting data. TCP uses the three-way handshake to transmit data with a reliable connection.
- C. UDP is used for multicast and broadcast communication. TCP is used for unicast communication and transmits data at a higher rate with error checking.
- D. TCP requires the connection to be established before transmitting data. UDP transmits data at a higher rate without ensuring packet delivery.

*Correct Answer:* D

**487. How does QoS optimize voice traffic?**

- A. reducing bandwidth usage
- B. by reducing packet loss
- C. by differentiating voice and video traffic
- D. by increasing jitter

*Correct Answer:* C

**488. What are network endpoints?**

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

*Correct Answer:* B

**489. What does physical access control regulate?**

- A. access to specific networks based on business function
- B. access to servers to prevent malicious activity
- C. access to computer networks and file systems
- D. access to networking equipment and facilities

*Correct Answer:* D

**490. What must be considered when using 802.11a?**

- A. It is compatible with 802.11b- and 802.11-compliant wireless devices

- B. It is used in place of 802.11b/g when many nonoverlapping channels are required.
- C. It is susceptible to interference from 2.4 GHz devices such as microwave ovens.
- D. It is chosen over 802.11b/g when a lower-cost solution is necessary.

*Correct Answer:* B

**Explanation/Reference:** 802.11a and 802.11b are not compatible since 802.11a operates at the 5GHz frequency band and 802.11b operates at the 2.4GHz band. The 2.4 GHz frequency band with a channel width of 22 MHz only has 3 non-overlapping channels (1, 6 and 11) whereas the 5 GHz band has 23 non-overlapping channels with a 20 MHz channel width. Therefore, 802.11a is preferred over 802.11b and 802.11g when many non-overlapping channels are required since they both operate at 2.4GHz unlike 802.11a.

491. An engineer configures interface Gi1/0 on the company PE router to connect to an ISP Neighbor discovery is disabled. Which action is necessary to complete the configuration if the ISP uses third-party network devices?

```
interface Gi1/0
description HQ_DC3978-87297
duplex full
speed 100
negotiation auto
lldp transmit
lldp receive
```

- A. Enable LLDP globally
- B. Disable autonegotiation
- C. Disable Cisco Discovery Protocol on the interface
- D. Enable LLDP-MED on the ISP device

*Correct Answer:* A

**Explanation:** LLDP-MED is used only between *network devices* (such as switches) and *endpoint devices* (such as phones). For **network-to-network** connections, LLDP is **used**.

Check table 2, protocol uses: [Click here](#)

492. Which two events occur automatically when a device Is added to Cisco DNA Center? (Choose two.)

- A. The device Is assigned to the Global site.
- B. The device Is placed into the Unmanaged state.
- C. The device Is placed into the Provisioned state.
- D. The device Is placed into the Managed state.
- E. The device is assigned to the Local site.

*Correct Answer:* A D

**Explanation: Device in Global Site:** When you successfully add, import, or discover a device, Cisco DNA Center places the device in the **Managed** state and assigns it to the Global site by default. Even if you have defined SNMP server, Syslog server, and NetFlow collector settings for the Global site, Cisco DNA Center does not change these settings on the device.

Check table 2, protocol uses: [Click here](#)

493. What are two benefits of using the PortFast feature? (Choose two)

- A. Enabled interfaces are automatically placed in listening state
- B. Enabled interfaces come up and move to the forwarding state immediately
- C. Enabled interfaces never generate topology change notifications.
- D. Enabled interfaces that move to the learning state generate switch topology change notifications
- E. Enabled interfaces wait 50 seconds before they move to the forwarding state

*Correct Answer:* B C

**Explanation/Reference:** “A switch will never generate a topology change notification for an interface that has portfast enabled.”  
Source: [Click here](#)

“Another major benefit of the STP portfast feature is that the access ports bypass the earlier 802.1D STP states (Learning and listening) and forward traffic immediately.”  
Source: [Click here](#)

494. A network administrator is asked to configure VLANs 2, 3 and 4 for a new implementation. Some ports must be assigned to the new VLANs with unused remaining. Which action should be taken for the unused ports?

- A. configure port in the native VLAN
- B. configure ports in a black hole VLAN
- C. configure in a nondefault native VLAN
- D. configure ports as access ports

*Correct Answer:* B

495. Which function is performed by DHCP snooping?

- A. propagates VLAN information between switches
- B. listens to multicast traffic for packet forwarding
- C. provides DDoS mitigation
- D. rate-limits certain traffic

*Correct Answer:* D

496. Which plane is centralized by an SDN controller?

- A. management-plane
- B. control-plane
- C. data-plane
- D. services-plane

*Correct Answer:* B

497. Which access layer threat-mitigation technique provides security based on identity?

- A. Dynamic ARP Inspection
- B. using a non-default native VLAN
- C. 802.1X
- D. DHCP snooping

*Correct Answer:* C

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

- A. Both operate at a frequency of 500 MHz.
- B. Both support runs of up to 55 meters.
- C. Both support runs of up to 100 meters.

- D. Both support speeds of at least 1 Gigabit.
- E. Both support speeds up to 10 Gigabit.

*Correct Answer: C D*

499. Refer to the exhibit. What is the metric of the route to the 192.168.10.33/28 subnet?

```
R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2
      i - IS-IS, su - IS-IS summary, l1 - IS-IS level-1, l2 - IS-IS level-2
      ia - IS-IS inter area, * - candidate default, U - per-user static route
      o - QDR, ? - periodic downloaded static route

Gateway of last resort is 192.168.30.10 to network 0.0.0.0

 192.168.30.0/29 is subnetted, 2 subnets
 C 192.168.30.0 is directly connected, FastEthernet0/0
 C 192.168.30.8 is directly connected, Serial0/0.1
 192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
 0  IA 192.168.10.32/28 [110/193] via 192.168.30.10, 00:18:49, Serial0/0.1
 0  IA 192.168.10.9/27 [110/192] via 192.168.30.10, 00:18:49, Serial0/0.1
 192.168.20.0/30 is subnetted, 3 subnets
 0  IA 192.168.20.0 [110/128] via 192.168.30.10, 00:18:49, Serial0/0.1
 192.168.50.0/32 is subnetted, 1 subnets
 C 192.168.50.1 is directly connected, Loopback0
 0*IA 0.0.0.0/0 [110/84] via 192.168.30.10, 00:10:36, Serial0/0.1
```

- A. 84
- B. 110
- C. 128
- D. 192
- E. 193

*Correct Answer: E*

500. What are two characteristics of the distribution layer in a three-tier network architecture? (Choose two.)

- A. serves as the network aggregation point
- B. provides a boundary between Layer 2 and Layer 3 communications
- C. designed to meet continuous, redundant uptime requirements
- D. is the backbone for the network topology
- E. physical connection point for a LAN printer

*Correct Answer: AB*

**Explanation/Reference:** The **distribution layer** aggregates the data received from the access layer switches before it is transmitted to the core layer for routing to its final destination. In Figure 1-6,

the distribution layer is the boundary between the Layer 2 domains and the Layer 3 routed network.

Reference: [Click here](#)

**501. What prevents a workstation from receiving a DHCP address?**

- A. DTP
- B. STP
- C. VTP
- D. 802.10

*Correct Answer:* B

**502. What Is a syslog facility?**

- A. Host that is configured for the system to send log messages
- B. password that authenticates a Network Management System to receive log messages
- C. group of log messages associated with the configured severity level
- D. set of values that represent the processes that can generate a log message

*Correct Answer:* D

**503. Which communication interaction takes place when a southbound API Is used?**

- A. between the SDN controller and PCs on the network
- B. between the SON controller and switches and routers on the network
- C. between the SON controller and services and applications on the network
- D. between network applications and switches and routers on the network

*Correct Answer:* B

**504. Which port type supports the spanning-tree portfast command without additional configuration?**

- A. access ports
- B. Layer 3 main Interfaces
- C. Layer 3 suninterfaces
- D. trunk ports

*Correct Answer:* A

505. An engineer is configuring data and voice services to pass through the same port. The designated switch interface fastethernet0/1 must transmit packets using the same priority for data when they are received from the access port of the IP phone. Which configuration must be used?

A)  
interface fastethernet0/1  
switchport priority extend cos 7

B)  
interface fastethernet0/1  
switchport voice vlan untagged

C)  
interface fastethernet0/1  
switchport voice vlan dot1p

D)  
interface fastethernet0/1  
switchport priority extend trust

*Correct Answer:* A

506. Which mode must be set for APs to communicate to a Wireless LAN Controller using the Control and Provisioning of Wireless Access Points (CAPWAP) protocol?

- A. bridge
- B. route
- C. autonomous
- D. lightweight

*Correct Answer:* D

507. What are two benefits of FHRPs? (Choose two.)

- A. They prevent oops in the Layer 2 network.
- B. They allow encrypted traffic.
- C. They are able to bundle multiple ports to increase bandwidth
- D. They enable automatic failover of the default gateway.
- E. They allow multiple devices to serve as a single virtual gateway for clients in the network

*Correct Answer:* D, E

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

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

*Correct Answer:* A, D

**509.** In QoS, which prioritization method is appropriate for interactive voice and video?

- A. expedited forwarding
- B. traffic policing
- C. round-robin scheduling
- D. low-latency queuing

*Correct Answer:* D

**510.** Refer to the exhibit. Which change to the configuration on Switch allows the two switches to establish an EtherChannel?

```
Switch1#show etherchannel summary
Flags: D - down P - in port-channel
      I - stand-alone S - suspended
      H - Hot-standby (LACP only)
      R - Layer3 S - Layer2
      U - in use F - failed to allocate aggregator
      U - unsuitable for bundling
      W - waiting to be aggregated
      D - default port

Number of channel-groups in use: 1
Number of aggregators: 1
Group  Port-channel  Protocol  Ports
-----+-----+-----+
  1    Po1(SD)       LACP     Fa0/2(I) Fa0/1(I)

Switch1#show run
Building configuration...
interface Port-channel1
!
interface FastEthernet0/1
  channel-group 1 mode passive
!
interface FastEthernet0/2
  channel-group 1 mode passive

Switch2#show run
Building configuration...
interface Port-channel1
!
interface FastEthernet0/1
  channel-group 1 mode passive
!
interface FastEthernet0/2
  channel-group 1 mode passive
```

- A. Change the protocol to EtherChannel mode on.
- B. Change the LACP mode to active
- C. Change the LACP mode to desirable

- D. Change the protocol to PAqP and use auto mode

*Correct Answer:* B

**511. What Is the path for traffic sent from one user workstation to another workstation on a separate switch In a Three-tier architecture model?**

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

*Correct Answer:* D

**512. How does WPA3 improve security?**

- A. It uses SAE for authentication.
- B. It uses a 4-way handshake for authentication.
- C. It uses RC4 for encryption.
- D. It uses TKIP for encryption.

*Correct Answer:* A

**513. Where does wireless authentication happen?**

- A. SSID
- B. radio
- C. band
- D. Layer 2

*Correct Answer:* D

**514. How are the switches in a spine-and-leaf topology interconnected?**

- A. Each leaf switch is connected to one of the spine switches.
- B. Each leaf switch is connected to two spine switches, making a loop.
- C. Each leaf switch is connected to each spine switch.
- D. Each leaf switch is connected to a central leaf switch, then uplinked to a core spine switch.

*Correct Answer:* C

**515. What are two characteristics of a public cloud Implementation?  
(Choose two.)**

- A. It is owned and maintained by one party, but it is shared among multiple organizations.
- B. It enables an organization to fully customize how it deploys network resources.
- C. It provides services that are accessed over the Internet.
- D. It is a data center on the public Internet that maintains cloud services for only one company.
- E. It supports network resources from a centralized third-party provider and privately-owned virtual resources

*Correct Answer:* C, E

**516. Which virtual MAC address is used by VRRP group 1?**

- A. 0050.0c05.ad81
- B. 0007.c061.bc01
- C. 0000.5E00.0101
- D. 0500.3976.6401

*Correct Answer:* C

**517. Which type of traffic is sent with pure ipsec?**

- A. broadcast packets from a switch that is attempting to locate a MAC address at one of several remote sites
- B. multicast traffic from a server at one site to hosts at another location
- C. spanning-tree updates between switches that are at two different sites
- D. unicast messages from a host at a remote site to a server at headquarters

*Correct Answer:* D

**518. What is the purpose of an SSID?**

- A. It provides network security
- B. It differentiates traffic entering access points
- C. It identifies an individual access point on a WLAN
- D. It identifies a WLAN

*Correct Answer:* D

**Explanation:** In IEEE 802.11 wireless local area networking standards (including Wi-Fi), a service set is a group of wireless network devices which share a service set identifier (SSID). A service set forms a logical network of nodes operating with shared link-layer networking parameters; they form one logical network segment.

**519. What is a similarly between 1000BASE-LX and 1000BASE-T standards?**

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

*Correct Answer: A*

**Explanation:** In computer networking, Gigabit Ethernet (GbE or 1 GigE) is the term applied to transmitting Ethernet frames at a rate of a gigabit per second.” Both standards use Ethernet framing (same headers and trailers)

**520. What is a capability of FTP in network management operations?**

- A. encrypts data before sending between data resources
- B. devices are directly connected and use UDP to pass file information
- C. uses separate control and data connections to move files between server and client
- D. offers proprietary support at the session layer when transferring data

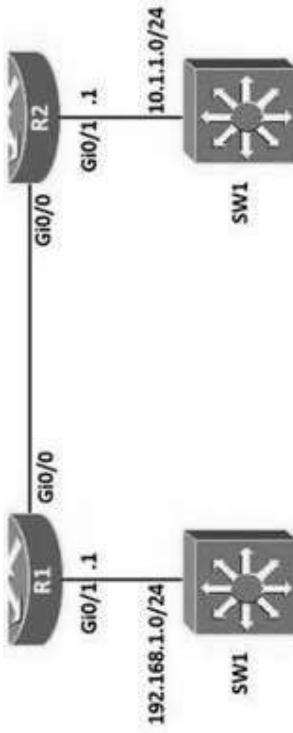
*Correct Answer: C*

**Explanation:** - Control Connection: The control connection uses very simple rules for communication. Through control connection, we can transfer a line of command or line of response at a time. The control connection is made between the control processes. The control connection remains connected during the entire interactive FTP session.

- Data Connection: The Data Connection uses very complex rules as data types may vary. The data connection is made between data transfer processes. The data connection opens when a command comes for transferring the files and closes when the file is transferred.

[https://www.cisco.com/c/en/us/td/docs/ios/sw/upgrades/interlink/r2\\_0/user/ugftpc1.html](https://www.cisco.com/c/en/us/td/docs/ios/sw/upgrades/interlink/r2_0/user/ugftpc1.html)

521. Refer to the exhibit. A network engineer is in the process of establishing IP connectivity between two sites. Routers R1 and R2 are partially configured with IP addressing. Both routers have the ability to access devices on their respective LANs. Which command set configures the IP connectivity between devices located on both LANs in each site?



- A. R1  
ip route 192.168.1.0 255.255.255.0 GigabitEthernet0/0  
R2  
ip route 10.1.1.1 255.255.255.0 GigabitEthernet0/0
- B. R1  
ip route 0.0.0.0 0.0.0.0 209.165.200.2226  
R2  
ip route 0.0.0.0 0.0.0.0 209.165.200.2226
- C. R1  
ip route 192.168.1.1 255.255.255.0 GigabitEthernet0/1  
R2  
ip route 10.1.1.1 255.255.255.0 GigabitEthernet0/1
- D. R1  
ip route 0.0.0.0 0.0.0.0 209.165.200.2226  
R2  
ip route 0.0.0.0 0.0.0.0 209.165.200.2225

- A. Option A
- B. Option B
- C. Option C
- D. Option D

*Correct Answer: C*

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

- A. large and requires a flexible, scalable network design

- B. large and must minimize downtime when hardware fails
- C. small and needs to reduce networking costs currently
- D. small but is expected to grow dramatically in the near future

*Correct Answer:* C

**Explanation:**

[https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Small\\_Enterprise\\_Design\\_Profile/SEDP/chap2.html](https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Small_Enterprise_Design_Profile/SEDP/chap2.html)

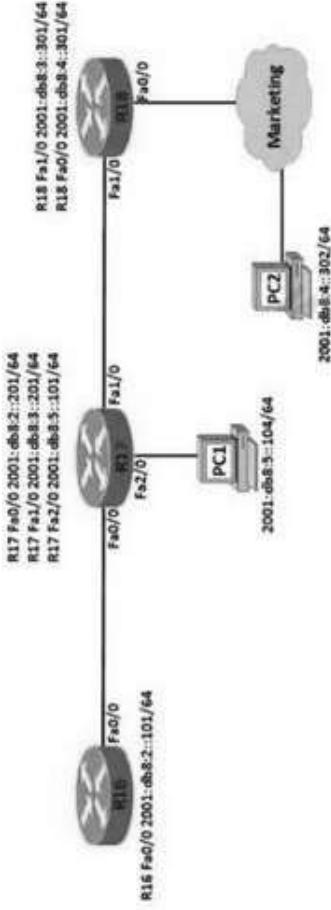
**523.** In software-defined architecture, which place handles switching for traffic through a Cisco router?

- A. Control
- B. Management
- C. Data
- D. application

*Correct Answer:* C

**Explanation:** Data plane—Handles all the data traffic. The basic functionality of a Cisco NX-OS device is to forward packets from one interface to another. The packets that are not meant for the switch itself are called the transit packets. These packets are handled by the data plane

**524.** Refer to the exhibit. Which IPv6 configuration is required for R17 to successfully ping the WAN interface on R18?



A)	
R17#	no ip domain lookup ip cef
	interface FastEthernet0/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:3::201/64
	Interface FastEthernet1/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:2::201/64
	no cdp log mismatch duplex ipv6 route 2001:DB8:4::164 2001:DB8:6::101

B)	
R17#	no ip domain lookup ip cef ipv6 unicast-routing
	interface FastEthernet0/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:2::201/64
	interface FastEthernet1/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:3::201/64
	no cdp log mismatch duplex ipv6 route 2001:DB8:4::164 2001:DB8:3::301

C)	
R17#	no ip domain lookup ip cef ipv6 cef
	interface FastEthernet0/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:2::201/64
	Interface FastEthernet1/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:3::201/64
	no cdp log mismatch duplex ipv6 route 2001:DB8:4::164 2001:DB8:2::201

D)	
R17#	no ip domain lookup ip cef ipv6 unicast-routing
	interface FastEthernet0/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:2::201/64
	interface FastEthernet1/0 no ip address duplex auto speed auto ipv6 address 2001:DB8:3::201/64
	no cdp log mismatch duplex ipv6 route 2001:DB8:4::164 2001:DB8:2::201

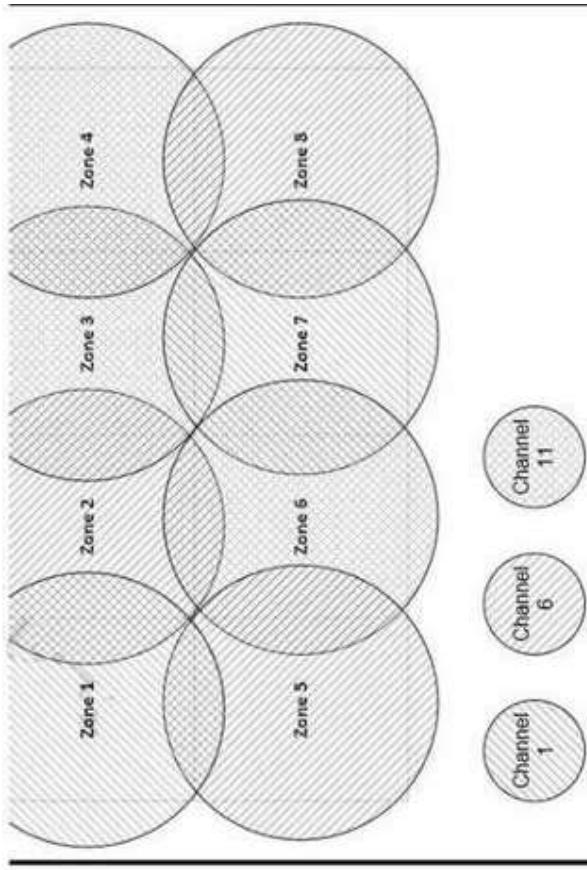
- A. Option A

- B. Option B
- C. Option C
- D. Option D

*Correct Answer:* B

**Explanation:** ipv6 unicast-routing statement included (IPv6 is enabled on the router). Compared to the exhibit, Fa0/0 and Fa0/1 have correct configurations. The route to subnet 2001:db8:4::/64 points to R18's Fa1/0 (correct next-hop).

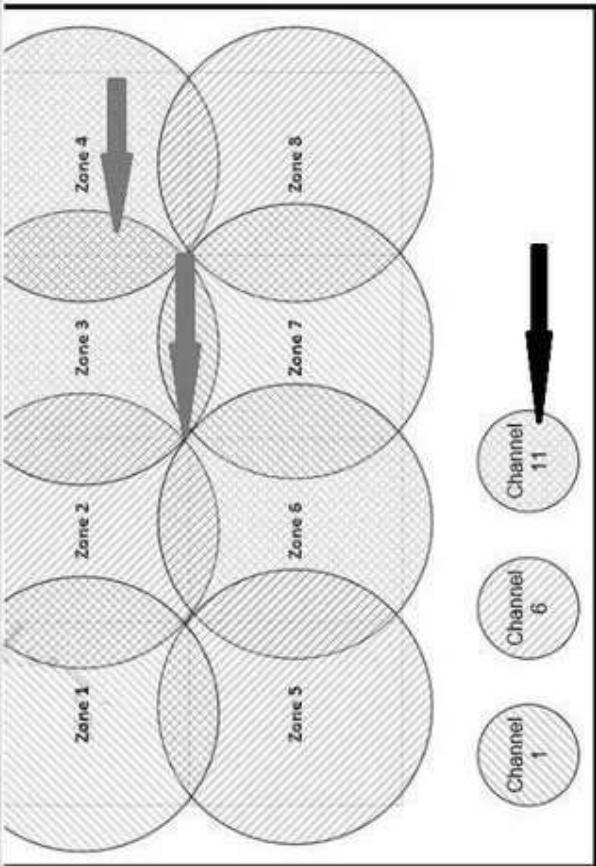
**525.** Refer to the exhibit. Between which zones do wireless users expect to experience intermittent connectivity?



- A. between zones 1 and 2
- B. between zones 2 and 5
- C. between zones 3 and 4
- D. between zones 3 and 6

*Correct Answer:* C

**Explanation:** Zones 3 and 4 both have Channel 11 that is overlapped.  
Zones 3 and 6 do not overlap at all.



**526.** Which device permits or denies network traffic based on a set of rules?

- A. access point
- B. firewall
- C. wireless controller
- D. switch

*Correct Answer: B*

**527.** Refer to the exhibit. The entire MAC address table for SW1 is shown here:

```
SW1#show mac-address-table  
Mac Address Table  
Vlan Mac Address Type Ports  
000c.8590.bb7d DYNAMIC Fa0/1  
010a.7a17.45bc DYNAMIC Fa0/3  
7aa7.4037.8935 DYNAMIC Fa0/4  
SW1#
```

What does SW1 do when Br-4 sends a frame to Br-2?

- A. It inserts the source MAC address and port into the forwarding table and forwards the frame to Br-2.

- B. It maps the Layer 2 MAC address for Fa0/3 to the Layer 3 IP address and forwards the frame.
- C. It performs a lookup in the MAC address table for Br-4 and discards the frame due to a missing entry.
- D. It floods the frame out of all ports except on the port where Br-2 is connected.

*Correct Answer:* A

**528. What is a function of a Layer 3 switch?**

- A. move frames between endpoints limited to IP addresses
- B. transmit broadcast traffic when operating in Layer 3 mode exclusively
- C. forward Ethernet frames between VLANs using only MAC addresses
- D. flood broadcast traffic within a VLAN

*Correct Answer:* A

**529. Refer to the exhibit. For security reasons, automatic neighbor discovery must be disabled on the R5 Gi0/1 interface.**



**These tasks must be completed:**

- \* Disable all neighbor discovery methods on R5 interface Gi0/1.
- \* Permit neighbor discovery on R5 interface Gi0/2.
- \* Verify there are no dynamically learned neighbors on R5 interface Gi0/1.
- \* Display the IP address of R6's interface Gi0/2.

Which configuration must be used?

R5(config)#int Gi0/1  
R5(config-if)#no cdp run  
R5(config-if)#exit  
R5(config)#lldp run  
R5(config)#cdp enable  
R5#sh cdp neighbor  
R5#sh lldp neighbor

R5(config)#int Gi0/1  
R5(config-if)#no cdp enable  
R5(config-if)#exit  
R5(config)#no lldp run  
R5(config)#cdp run  
R5#sh cdp neighbor  
R5#sh lldp neighbor

R5(config)#int Gi0/1  
R5(config-if)#no cdp enable  
R5(config-if)#exit  
R5(config)#no lldp run  
R5(config)#cdp run  
R5#sh cdp neighbor detail  
R5#sh lldp neighbor

R5(config)#int Gi0/1  
R5(config-if)#no cdp enable  
R5(config-if)#exit  
R5(config)#lldp run  
R5(config)#no cdp run  
R5#sh cdp neighbor detail  
R5#sh lldp neighbor

- A. Option A
- B. Option B
- C. Option C
- D. Option D

*Correct Answer: C*

530. Which type of API allows SDN controllers to dynamically make changes to the network?

- A. northbound API
- B. REST API
- C. SOAP API
- D. southbound API

*Correct Answer: D*

Explanation: Cisco overview doc for SDN here:  
[https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Data\\_Center/VMDC/SDN/SDN.html](https://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Data_Center/VMDC/SDN/SDN.html)

531. What is the purpose of the ip address dhcp command?

- A. to configure an interface as a DHCP server
- B. to configure an interface as a DHCP helper
- C. to configure an interface as a DHCP relay
- D. to configure an interface as a DHCP client

Correct Answer: D

532. Refer to the exhibit. Which configuration enables DHCP addressing for hosts connected to interface FastEthernet0/1 on router R4?

```
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname R4
!
boot-start-marker
boot-end-marker
!
ip cef
!
interface FastEthernet0/0
description WAN_INTERFACE
ip address 10.0.1.2 255.255.255.252
ip access-group 100 in
!
interface FastEthernet0/1
description LAN_INTERFACE
ip address 10.148.2.1 255.255.255.0
duplex auto
speed auto
!
ip forward-protocol nd
!
access-list 100 permit eigrp any any
access-list 100 permit icmp any any
access-list 100 permit tcp 10.149.3.0 0.0.0.255 host 10.0.1.2 eq 22
access-list 100 permit tcp any any eq 80
access-list 100 permit tcp any any eq 443
access-list 100 deny ip any any log
```

A.  
interface FastEthernet0/0
ip helper-address 10.0.1.1
!
access-list 100 permit udp host 10.0.1.1 eq bootps host 10.148.2.1

B.  
interface FastEthernet0/1  
ip helper-address 10.0.1.1  
!  
access-list 100 permit tcp host 10.0.1.1 eq 67 host 10.148.2.1

C.  
interface FastEthernet0/0  
ip helper-address 10.0.1.1  
!  
access-list 100 permit host 10.0.1.1 host 10.148.2.1 eq bootps

D.  
interface FastEthernet0/1  
ip helper-address 10.0.1.1  
!  
access-list 100 permit udp host 10.0.1.1 eq bootps host 10.148.2.1

*Correct Answer: D*

533. 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. anycast address
- C. multicast address
- D. link-local address

*Correct Answer: B*

534. OSPF must be configured between routers R1 and R2. Which OSPF configuration must be applied to router R1 to avoid a DR/BDR election?

- A.  
router ospf 1  
network 192.168.1.1 0.0.0.0 area 0  
interface e1/1  
ip address 192.168.1.1 255.255.255.252  
ip ospf network broadcast
- B.  
router ospf 1  
network 192.168.1.1 0.0.0.0 area 0

```
interface e1/1
ip address 192.168.1.1 255.255.255.252
ip ospf network point-to-point

C.
router ospf 1
network 192.168.1.1 0.0.0.0 area 0

interface e1/1
ip address 192.168.1.1 255.255.255.252
ip ospf cost 0

D.
router ospf 1
network 192.168.1.1 0.0.0.0 area 0
hello interval 15
interface e1/1
Ip address 192.168.1.1 255.255.255.252
```

*Correct Answer:B*

535. Refer to the exhibit. A network engineer must update the configuration on Switch2 so that it sends LLDP packets every minute and the information sent via LLDP is refreshed every 3 minutes. Which configuration must the engineer apply?

```
Switch# show lldp
Global LLDP Information
Status: ACTIVE
LLDP advertisements are sent every 30 seconds
LLDP hold time advertised is 120 seconds
LLDP interface reinitialization delay is 2 seconds
```

- A.  
Switch2(config)#lldp timer 60  
Switch2(config)#lldp holdtime 180
- B.  
Switch2(config)#lldp timer 60  
Switch2(config)#lldp tlv-select 180
- C.  
Switch2(config)#lldp timer 1  
Switch2(config)#lldp holdtime 3

- D.  
Switch2(config)#11dp timer 1  
Switch2(config)#11dp tlv-select 3

*Correct Answer:A*

536. What is a requirement for nonoverlapping Wi-Fi channels?
- A. different security settings
  - B. discontinuous frequency ranges
  - C. different transmission speeds
  - D. unique SSIDs

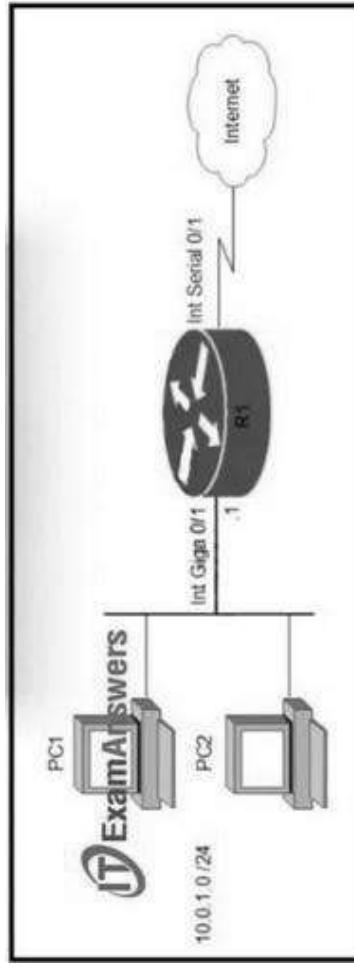
*Correct Answer:B*

537. Which protocol is used for secure remote CLI access?

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

*Correct Answer:D*

538. Refer to the exhibit. Which two commands must be configured on router R1 to enable the router to accept secure remote-access connections? (Choose two)



- A. transport input telnet
- B. crypto key generate rsa
- C. ip ssh pubkey-chain
- D. login console
- E. username cisco password 0 Cisco

*Correct Answer:B, C*

**539. An engineer must configure R1 for a new user account. The account must meet these requirements:**

- It must be configured in the local database.
- The username is engineer.
- It must use the strongest password configurable.

**Which command must the engineer configure on the router?**

- A. R1 (config)# username engineer2 algorithm-type scrypt secret test2021
- B. R1 (config)# username engineer2 secret 5 .password S1\$b1Ju\$kZbBS1Pyh4QzwXYZ
- C. R1 (config)# username engineer2 privilege 1 password 7 test2021
- D. R1 (config)# username eng1neer2 secret 4 S1Sb1Ju\$kZbBS1Pyh4QzwXYZ

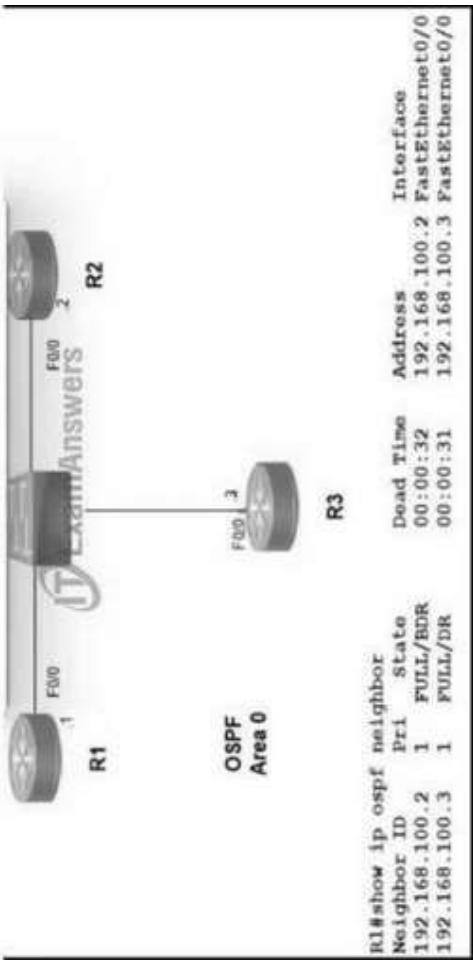
*Correct Answer: A*

**540. Which field within the access-request packet is encrypted by RADIUS?**

- A. authorized services
- B. authenticator
- C. username
- D. password

*Correct Answer: D*

**541. Refer to the exhibit. Which two configurations must the engineer apply on this network so that R1 becomes the DR? (Choose two.)**



A.  
R1 (config)#router ospf 1  
R1 (config-router)#router-id 192.168.100.1

B.  
R1 (config)#interface fastethernet 0/0  
R1 (config-if)#ip ospf priority 200

C.  
R3 (config)#interface fastethernet 0/0  
R3 (config-if)#ip ospf priority 200

D.  
R1 (config)#interface fastethernet 0/0  
R1 (config-if)#ip ospf priority 0

E.  
R3 (config)#interface fastethernet 0/0  
R3 (config-if)#ip ospf priority 200

*Correct Answer:B, C*

**542. What is a requirement when configuring or removing LAG on a WLC?**

- A. The incoming and outgoing ports for traffic flow must be specified if LAG is enabled.
- B. The controller must be rebooted after enabling or reconfiguring LAG.
- C. The management interface must be reassigned if LAG disabled.
- D. Multiple untagged interfaces on the same port must be supported.

Correct Answer:B

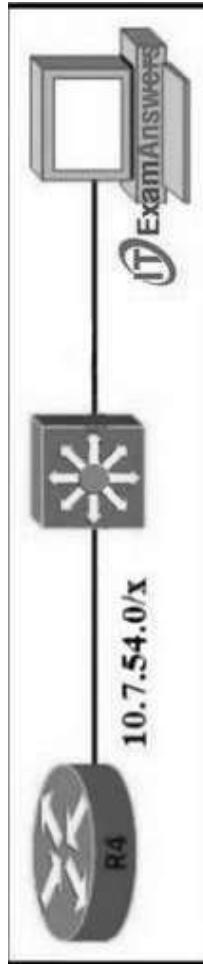
543. Refer to the exhibit. Which network prefix was learned via EIGRP?

```
Router# show ip route | begin gateway | begin network 0.0.0.0
Gateway of last resort is 209.165.200.254 to network 0.0.0.0
S+ 0.0.0.0/0 [1/0] via 209.165.200.254, Serial0/0/1
  is directly connected, Serial0/0/1
  172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
C 172.16.1.0/24 is directly connected, FastEthernet0/0
L 172.16.1.1/32 is directly connected, FastEthernet0/0
R 172.16.2.0/24 [120/2] via 207.165.200.250, 00:00:25, Serial0/0/0
O 192.168.1.0/24 [110/4437] via 207.165.200.254, 00:00:17, Serial0/0/1
D 192.168.2.0/24 [90/84432] via 207.165.200.254, 00:00:15, Serial0/0/1
  207.165.200.0/24 is variably subnetted, 5 subnets, 2 masks
  S 207.165.200.244/30 [1/1] via 207.165.200.254, Serial0/0/1
  C 207.165.200.248/30 is directly connected, Serial0/0/0
  L 207.165.200.249/32 is directly connected, Serial0/0/0
  C 207.165.200.252/30 is directly connected, Serial0/0/0
  L 207.165.200.253/32 is directly connected, Serial0/0/1

  • A. 172.16.0.0/16
  • B. 192.168.2.0/24
  • C. 207.165.200.0/24
  • D. 192.168.1.0/24
```

Correct Answer:B

544. Refer to the exhibit. The router has been configured with a supernet to accommodate the requirement for 380 users on a subnet. The requirement already considers 30% future growth. Which configuration verifies the IP subnet on router R4?



- A.  
Subnet: 10.7.54.0  
Subnet mask: 255.255.254.0  
Broadcast address: 10.7.54.255  
Usable IP address range: 10.7.54.1 – 10.7.55.254
- B.  
Subnet: 10.7.54.0  
Subnet mask: 255.255.254.0  
Broadcast address: 10.7.55.255  
Usable IP address range: 10.7.54.1 – 10.7.55.254

Subnet: 10.7.54.0  
Subnet mask: 255.255.128.0  
Broadcast address: 10.7.55.255  
Usable IP address range: 10.7.54.1 – 10.7.55.254

D.  
Subnet: 10.7.54.0

Subnet mask: 255.255.255.0  
Broadcast address: 10.7.54.255  
Usable IP address range: 10.7.54.1 – 10.7.55.254

*Correct Answer:B*

**545. What is a function of a Next-Generation IPS?**

- A. makes forwarding decisions based on learned MAC addresses
- B. serves as a controller within a controller-based network
- C. integrates with a RADIUS server to enforce Layer 2 device authentication rules
- D. correlates user activity with network events

*Correct Answer:D*

**546. What is the difference between IPv6 unicast and anycast addressing?**

- A. IPv6 anycast nodes must be explicitly configured to recognize the anycast address, but IPv6 unicast nodes require no special configuration
- B. IPv6 unicast nodes must be explicitly configured to recognize the unicast address, but IPv6 anycast nodes require no special configuration
- C. An individual IPv6 unicast address is supported on a single interface on one node but an IPv6 anycast address is assigned to a group of interfaces on multiple nodes.
- D. Unlike an IPv6 anycast address, an IPv6 unicast address is assigned to a group of interfaces on multiple nodes

*Correct Answer:C*

**547. Refer to the exhibit. Which two commands must be added to update the configuration of router R1 so that it accepts only**

encrypted connections? (Choose two)

```
! ip domain-name CNAC.com
!
interface GigabitEthernet0/0/0
ip address 192.168.1.10 255.255.255.0
duplex auto
speed auto
line vty 0 15
login local
```

**! ExamAnswers**

```
R1#show crypto key mypubkey rsa
```

```
R1#show ssh
%No SSHv2 server connections running.
%No SSHv1 server connections running.
```

- A. username CNAC secret R!4!4319115@
- B. ip ssh version 2
- C. line vty 0 4
- D. crypto key generate rsa 1024
- E. transport input ssh

*Correct Answer: D, E*

548. Which action is taken by the data plane within a network device?

- A. forwards traffic to the next hop
- B. constructs a routing table based on a routing protocol
- C. provides CLI access to the network device
- D. looks up an egress interface in the forwarding information base

*Correct Answer: A*

549. A Cisco engineer is configuring a factory-default router with these three passwords:

- \* The user EXEC password for console access is p4ssw0rd1
  - \* The user EXEC password for Telnet access is s3cr3t2
  - \* The password for privileged EXEC mode is pnv4t3p4ss.
- Which command sequence must the engineer configured

A.  
enable secret priv4t3p4ss  
!

line con 0  
password login p4ssword1  
!

line vty 0 15  
password login s3cr3t2  
login

B.  
enable secret privilege 15 priv4t3p4ss

!  
line con 0 password  
p4ssword1 login  
!

line vty 0 15  
password s3cr3t2  
login

C.  
enable secret priv4t3p4ss

!  
line con 0  
password p4ssword1  
login

!  
line vty 0 15  
password s3cr3t2  
login

D.  
enable secret priv4t3p4ss

!  
line con 0

*Correct Answer:C*

**550. What is a function of an endpoint on a network?**

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

*Correct Answer:C*

**551. R1 as an NTP server must have:**

- \* NTP authentication enabled
  - \* NTP packets sourced from Interface Loopback 0
  - \* NTP stratum 2
  - \* NTP packets only permitted to client IP 209.165.200.225
- How should R1 be configured?**

- A.
- ```
ntp authenticate
ntp authentication-key 2 md5 CISCO123
ntp source Loopback0
nntp access-group server-only 10
ntp master 2
!
access-list 10 permit udp host 209.165.200.225 any eq 123
```
- B.
- ```
ntp authenticate
ntp authentication-key 2 md5 CISCO123
ntp source Loopback0
ntp access-group server-only 10
ntp stratum 2
!
access-list 10 permit udp host 209.165.200.225 any eq 123
```
- C.
- ```
ntp authenticate
ntp authentication-key 2 sha1 CISCO123
ntp source Loopback0
ntp access-group server-only 10
ntp master 2
!
access-list 10 permit udp host 209.165.200.225 any eq 123
```
- D.
- ```
ntp authenticate
ntp authentication-key 2 md5 CISCO123
ntp interface Loopback0
ntp access-group server-only 10
```

*Correct Answer:A*

552. Refer to the exhibit. Traffic sourced from the loopback0 Interface is trying to connect via ssh to the host at 10.0.1.15. What Is the next hop to the destination address?

```
R1# show ip route
Codes: C - connected, S - static, I - ICMP, R - RIP, M - mobile, B - BGP
      D - EIGRP, E - EIGRP external, O - OSPF, T - OSPF intra area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
      1 - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-1-2, * - candidate
      U - per-user static route, o - CDR
Gateway of last resort is not set
C 192.168.3.5 is directly connected, Loopback0
  10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
    10.0.1.3/32 [110/100] via 192.168.0.40, 00:39:08, Serial0
    C 10.0.1.0/24 is directly connected, Serial0
    10.0.1.190/32 [110/51] via 192.168.0.35, 00:39:08, Serial0
    O 10.0.1.0/24 [110/10] via 192.168.0.4, 00:39:08, GigabitEthernet0/0
    D 10.0.1.0/20 [190/10] via 192.168.0.7, 00:39:08, GigabitEthernet0/0
```

**Exam Answers**

- A. 192.168.0.7
- B. 192.168.0.4
- C. 192.168.0.40
- D. 192.168.3.5

*Correct Answer: B*

553. Refer to the exhibit. Which route must be configured on R1 so that OSPF routing is used when OSPF is up, but the server is still reachable when OSPF goes down?

**Normal operation**

```
R1#show ip route 10.1.1.10
Routing entry for 10.1.1.10
Known via "ospf 1", distance 110, metric 2, type intra area
Last update from 172.16.2.2 on GigabitEthernet0/0, 00:00:18 ago
Routing Descriptor Blocks:
* 172.16.2.2, from 10.1.1.10, 00:00:18 ago, via GigabitEthernet0/0
  Route metric is 2, traffic share count is 1
```

**During outage**

```
R1#show ip route 10.1.1.10
* Network not in table
```

**Exam Answers**

- A. ip route 10.1.1.10 255.255.255.172.16.2.2 100
- B. ip route 10.1.1.0 255.255.255.0 gi0/1 125
- C. ip route 10.1.1.0 255.255.255.0 172.16.2.2 100
- D. ip route 10.1.1.10 255.255.255.0 172.16.2.2 125

*Correct Answer: D*

554. How does Rapid PVST+ create a fast loop-free network topology?