

# CCNA – New Questions 5

## Question 1

Refer to the exhibit.

```
Switch#show etherchannel summary  
[output omitted]
```

Group	Port-channel	Protocol	Ports	
10	Po10 (SU)	LACP	Gi0/0 (P)	Gi0/1 (P)
20	Po20 (SU)	LACP	Gi0/2 (P)	Gi0/3 (P)

Which two commands when used together create port channel 10? (Choose two)

- 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

**Answer:** A C

## Question 2

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

**Answer:** B

## Question 3

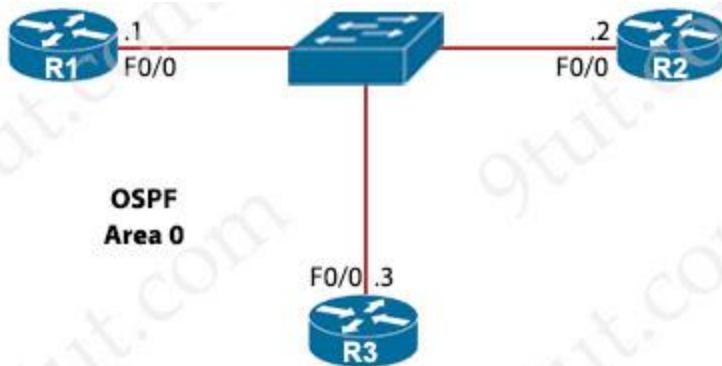
Which field within the access-request packet is encrypted by RADIUS?

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

**Answer:** D

#### Question 4

Refer to the exhibit.



```
R1#show ip ospf neighbor
Neighbor ID      Pri  State        Dead Time   Address          Interface
192.168.100.2    1    FULL/BDR   00:00:35    192.168.100.2  FastEthernet0/0
192.168.100.3    1    FULL/DR    00:00:34    192.168.100.3  FastEthernet0/0
```

Which two configurations must the engineer apply on this network so that R1 becomes the DR? (Choose two)

- A. R1(config)#interface fastethernet0/0  
R1(config-if)#ip ospf priority 200
- B. R1(config)#router ospf 1  
R1(config-router)#router-id 192.168.100.1
- C. R3(config)#interface fastethernet0/0  
R3(config-if)#ip ospf priority 0
- D. R1(config)#interface fastethernet0/0  
R1(config-if)#ip ospf priority 0
- E. R3(config)#interface fastethernet0/0  
R3(config-if)#ip ospf priority 200

**Answer:** A C

#### Question 5

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

C. 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

**Answer: B**

### **Question 6**

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

**Answer: D**

### **Question 7**

What is the difference between IPv6 unicast and anycast addressing?

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

**Answer:** A

### **Question 8**

Refer to the exhibit.

```
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
```

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

```
R1#show ssh
```

```
%No SSHv2 server connections running.
%No SSHv1 server connections running.
```

Which two commands must be added to update the configuration of router R1 so that it accepts only encrypted connections? (Choose two)

- A. username CNAC secret R!41!4319115@
- B. crypto key generate rsa 1024
- C. ip ssh version 2
- D. line vty 0 4
- E. transport input ssh

**Answer:** B E

### **Question 9**

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

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

**Answer:** D

### Question 10

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?

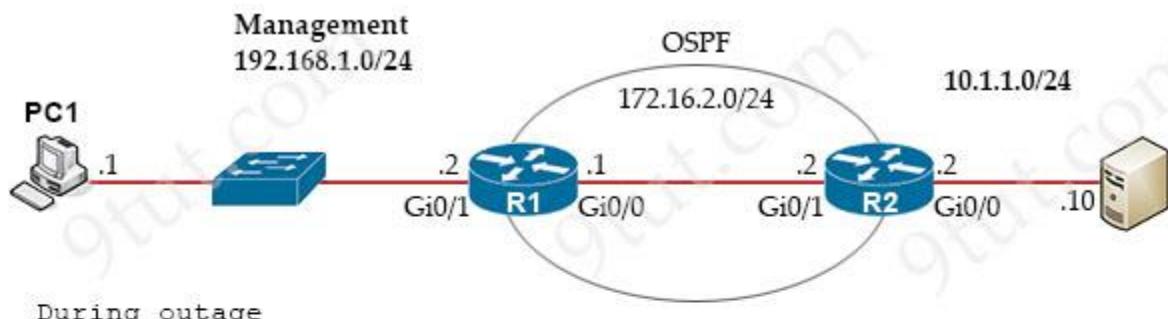
<b>Option A</b>	<b>Option B</b>
<pre> ntp authenticate ntp authentication-key 2 sha1 CISCO123 ntp source Loopback0 ntp access-group server-only 10 ntp master 2 ! access-list 10 permit udp host 209.165.200.225 any eq 123 </pre>	<pre> ntp authenticate ntp authentication-key 2 md5 CISCO123 ntp source Loopback0 ntp access-group server-only 10 ntp stratum 2 ! access-list 10 permit udp host 209.165.200.225 any eq 123 </pre>
<b>Option C</b>	<b>Option D</b>
<pre> ntp authenticate ntp authentication-key 2 md5 CISCO123 ntp interface Loopback0 ntp access-group server-only 10 ntp stratum 2 ! access-list 10 permit 209.165.200.225 </pre>	<pre> ntp authenticate ntp authentication-key 2 md5 CISCO123 ntp source Loopback0 ntp access-group server-only 10 ntp master 2 ! access-list 10 permit 209.165.200.225 </pre>

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

**Answer:** D

### Question 11

Refer to the exhibit.



During outage

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

Normal operation

```
R1#show ip route 10.1.1.10  
Routing entry for 10.1.1.0/24  
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
```

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?

- A. ip route 10.1.1.10 255.255.255.255 172.16.2.2 100
- 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 10.1.1.10 255.255.255.255 gi0/0 125

**Answer:** D

### Question 12

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

- A. It requires multiple links between core switches
- B. It maps multiple VLANs into the same spanning-tree instance
- C. It generates one spanning-tree instance for each VLAN
- D. It uses multiple active paths between end stations

**Answer:** C

### **Question 13**

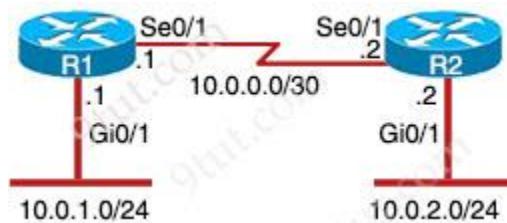
Which WLC management connection type is vulnerable to man-in-the-middle attacks?

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

**Answer:** C

### **Question 14**

Refer to the exhibit.



Which command configures OSPF on the point-to-point link between routers R1 and R2?

- A. network 10.0.0.0 0.0.0.255 area 0
- B. neighbor 10.1.2.0 cost 180
- C. ip ospf priority 100
- D. router-id 10.0.0.15

**Answer:** A

### **Question 15**

Which characteristic differentiates the concept of authentication from authorization and accounting?

- A. user-activity logging
- B. service limitations
- C. consumption-based billing
- D. identity verification

**Answer:** D

### **Question 16**

(this question is duplicated so we removed it)

### Question 17

Refer to the exhibit.

TenGigabitEthernet0/0/0 is up, line protocol is up  
Hardware is BUILT-IN-2T+6X1GE, address is 74a0.2f7a.0123 (bia 74a0.2f7a.0123)  
Description: Uplink  
Internet address is 10.1.1.1/24  
MTU 1500 bytes, BW 10000000 Kbit/sec, DLY 10 usec,  
reliability 255/255, txload 1/255, rxload 1/255  
Encapsulation ARPA, loopback not set  
Keepalive not supported  
Full Duplex, 10000Mbps, link type is force-up, media type is unknown media type  
output flow control is on, input flow-control is on  
ART type: ARPA, ARP Timeout 04:00:00  
Last input 00:00:00, output 00:05:40, output hang never  
Last clearing of "show interface" counters never  
Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0  
Queueing strategy: fifo  
Output queue: 0/40 (size/max)  
5 minute input rate 6160000 bits/sec, 1113 packets/sec  
5 minute output rate 11213000 bits/sec, 1553 packets/sec  
12662416065 packets input, 12607032232894 bytes, 0 no buffer  
Received 14117163 broadcasts (0 IP multicasts)  
0 runts, 0 giants, 0 throttles  
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored  
0 watchdog, 26271385 multicast, 0 pause input  
7907770090 packets output, 5072790424092 bytes, 0 underruns  
0 output errors, 8662414049 collisions, 1 interface resets  
0 unknown protocol drops  
0 babbles, 0 late collision, 0 deferred  
0 lost carrier, 0 no carrier, 0 pause output  
0 output buffer failures, 0 output buffers swapped out  
1 carrier transitions

Traffic that is flowing over interface TenGigabitEthernet0/0 experiences slow transfer speeds. What is the reason for the issue?

- A. heavy traffic congestion
- B. queuing drops
- C. a speed conflict
- D. a duplex incompatibility

**Answer:** D

### Question 18

Which type of network attack overwhelms the target server by sending multiple packets to a port until the half-open TCP resources of the target are exhausted?

- A. SYN flood
- B. reflection
- C. teardrop
- D. amplification

**Answer:** A

### **Question 19**

Which interface mode must be configured to connect the lightweight APs in a centralized architecture?

- A. WLAN dynamic
- B. management
- C. trunk
- D. access

**Answer:** D

### **Question 20**

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

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

**Answer:** A E

### **Question 21**

Refer to the exhibit.

```
A#show ip ospf neighbor
Neighbor ID  Pri  State          Dead Time   Address      Interface
172.1.1.1     1    EXCHANGE/-  00:00:36   172.16.32.1  Serial0.1
```

An engineer assumes a configuration task from a peer. Router A must establish an OSPF neighbor relationship with neighbor 172.1.1.1. The output displays the status of the adjacency after 2 hours. What is the next step in the configuration process for the routers to establish an adjacency?

- A. Set the router B OSPF ID to the same value as its IP address
- B. Set the router B OSPF ID to a nonhost address
- C. Configure a point-to-point link between router A and router B
- D. Configure router A to use the same MTU size as router B

**Answer:** D

### **Question 22**

Refer to the exhibit.

```
CPE#show ip route
  192.168.1.0/24 is variably subnetted, 3 subnets, 3 masks
B    192.168.1.0/24 [20/1] via 192.168.12.2, 00:00:06
R    192.168.1.128/25 [120/5] via 192.168.13.3, 00:02:22, Ethernet0/1
O    192.168.1.192/26 [110/11] via 192.168.14.4, 00:02:22, Ethernet0/2
D    192.168.1.224/27 [90/1024640] via 192.168.15.5, 00:01:33, Ethernet0/3
```

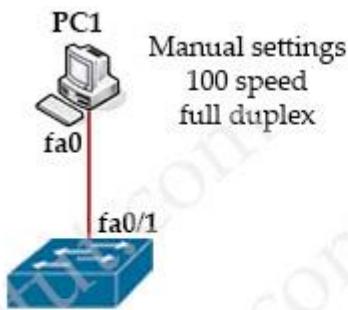
All traffic enters the CPE router from interface Serial0/3 with an IP address of 192.168.50.1. Web traffic from the WAN is destined for a LAN network where servers are load-balanced. An IP packet with a destination address of the HTTP virtual IP of 192.168.1.250 must be forwarded. Which routing table entry does the router use?

- A. 192.168.1.0/24 via 192.168.12.2
- B. 192.168.1.128/25 via 192.168.13.3
- C. 192.168.1.192/26 via 192.168.14.4
- D. 192.168.1.224/27 via 192.168.15.5

**Answer:** D

### **Question 23**

Refer to the exhibit.



**Switch#show interface status**

Port	Name	Status	Vlan	Duplex	Speed	Type
Fa0/1		connected	1	auto	auto	10/100BaseTX

The link between PC1 and the switch is up, but it is performing poorly. Which interface condition is causing the performance problem?

- A. There is a duplex mismatch on the interface
- B. There is an issue with the fiber on the switch interface
- C. There is a speed mismatch on the interface
- D. There is an interface type mismatch

**Answer:** A

#### **Question 24**

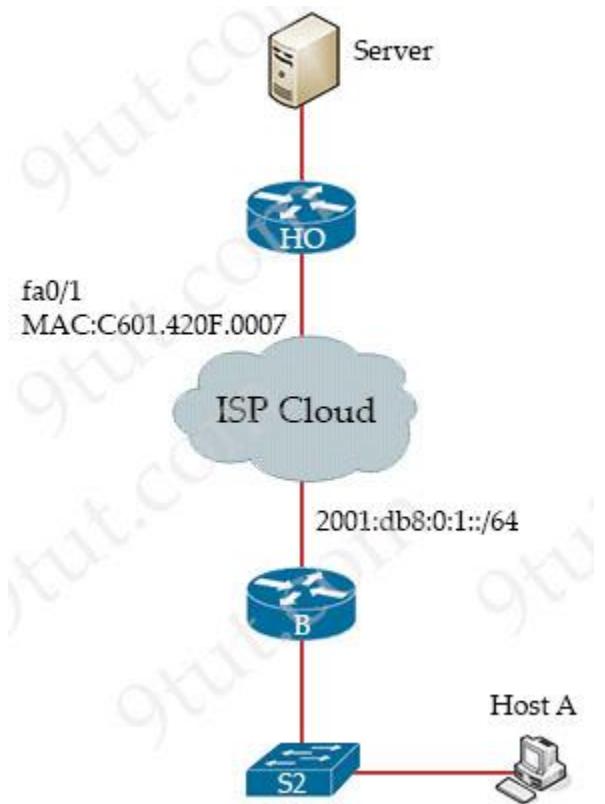
What provides centralized control of authentication and roaming in an enterprise network?

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

**Answer:** C

#### **Question 25**

Refer to the exhibit.



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

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

**Answer:** B

### Question 26

Refer to the exhibit.



```

Router#show run
Building configuration...
!
interface GigabitEthernet0/0
 ip address 10.10.10.1 255.255.255.0
 duplex auto
 speed auto
!
interface GigabitEthernet0/1
 ip address 172.16.2.1 255.255.255.0
 duplex auto
 speed auto
!
```

An engineer is configuring a new router on the network and applied this configuration. Which additional configuration allows the PC to obtain its IP address from a DHCP server?

- A. Configure the **ip dhcp relay information** command under interface Gi0/1
- B. Configure the **ip dhcp smart-relay** command globally on the router
- C. Configure the **ip helper-address 172.16.2.2** command under interface Gi0/0
- D. Configure the **ip address dhcp** command under interface Gi0/0

**Answer:** C

### Question 27

Refer to the exhibit.



A static route must be configured on R14 to forward traffic for the 172.21.34.0/25 network that resides on R86. Which command must be used to fulfill the request?

- A. ip route 172.21.34.0 255.255.255.192 10.73.65.65
- B. ip route 172.21.34.0 255.255.255.0 10.73.65.65
- C. ip route 172.21.34.0 255.255.128.0 10.73.65.64
- D. ip route 172.21.34.0 255.255.255.128 10.73.65.66

**Answer:** D

### Question 28

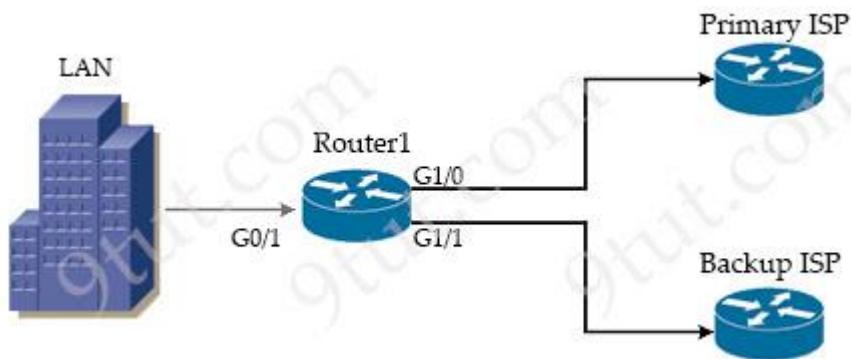
What is a function of Opportunistic Wireless Encryption in an environment?

- A. offer compression
- B. increase security by using a WEP connection
- C. provide authentication
- D. protect traffic on open networks

**Answer:** D

### Question 29

Refer to the exhibit.



A company is configuring a failover plan and must implement the default routes in such a way that a floating static route will assume traffic forwarding when the primary link goes down. Which primary route configuration must be used?

- A. ip route 0.0.0.0 0.0.0.0 192.168.0.2 GigabitEthernet1/0
- B. ip route 0.0.0.0 0.0.0.0 192.168.0.2 tracked
- C. ip route 0.0.0.0 0.0.0.0 192.168.0.2 floating
- D. ip route 0.0.0.0 0.0.0.0 192.168.0.2

**Answer:** D

### Question 30

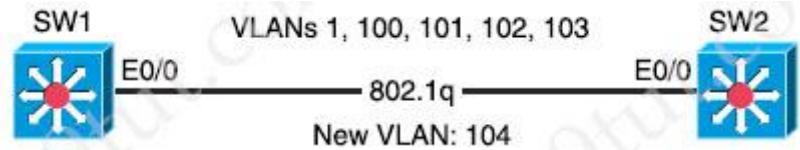
Which action implements physical access control as part of the security program of an organization?

- A. setting up IP cameras to monitor key infrastructure
- B. backing up syslogs at a remote location
- C. configuring enable passwords on network devices
- D. configuring a password for the console port

**Answer:** D

**Question 31**

Refer to the exhibit.



An engineer is asked to insert the new VLAN into the existing trunk without modifying anything previously configured. Which command accomplishes this task?

- A. switchport trunk allowed vlan 100-104
- B. switchport trunk allowed vlan all
- C. switchport trunk allowed vlan add 104
- D. switchport trunk allowed vlan 104

**Answer:** C

**Question 32**

Refer to the exhibit.

Hardware is ISR4331-3x1GE, address is 5486.bc25.1f70 (bia 5486.bc25.1f70)  
Description: << WAN Link >>  
Internet address is 192.0.2.2/30  
MTU 1500 bytes, BW 1000000 Kbit/sec, DLY 10 usec,  
reliability 255/255, txload 1/255, rxload 1/255  
Encapsulation ARPA, loopback not set  
Keepalive not supported  
Full Duplex, 1000Mbps, link type is auto, media type is RJ45  
output flow control is off, input flow-control is off  
ART type: ARPA, ARP Timeout 04:00:00  
Last input 00:00:00, output 00:00:11, output hang never  
Last clearing of "show interface" counters never  
Input queue: 0/375/0/0 (size/max/drops/flushes); Total output drops: 0  
Queueing strategy: fifo  
Output queue: 0/40 (size/max)  
5 minute input rate 7000 bits/sec, 4 packets/sec  
5 minute output rate 4000 bits/sec, 4 packets/sec  
22579370 packets input, 8825545968 bytes, 0 no buffer  
Received 67 broadcasts (0 IP multicasts)  
0 runts, 0 giants, 0 throttles  
3612699 input errors, 3612699 CRC, 0 frame, 0 overrun, 0 ignored  
0 watchdog, 10747057 multicast, 0 pause input  
12072167 packets output, 1697953637 bytes, 0 underruns  
0 output errors, 0 collisions, 1 interface resets  
6 unknown protocol drops  
0 babbles, 0 late collision, 0 deferred  
5 lost carrier, 0 no carrier, 0 pause output  
0 output buffer failures, 0 output buffers swapped out

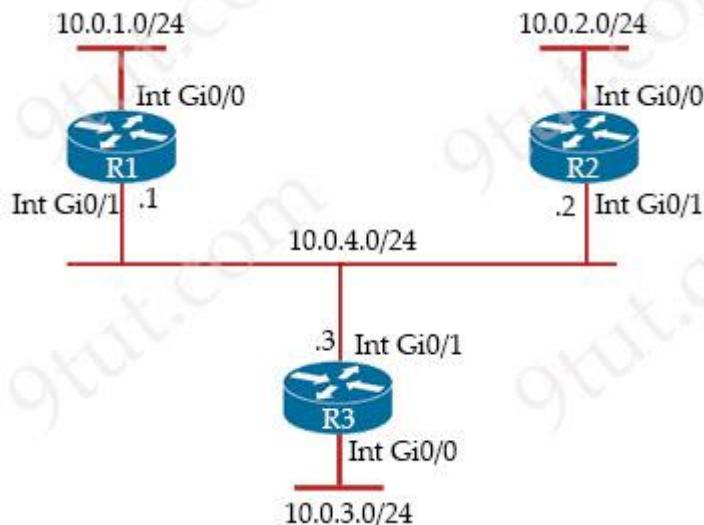
What is a reason for poor performance on the network interface?

- A. The interface is receiving excessive broadcast traffic.
- B. The cable connection between the two devices is faulty.
- C. The interface is operating at a different speed than the connected device.
- D. The bandwidth setting of the interface is misconfigured

**Answer:** C

### **Question 33**

Refer to the exhibit.



Routers R1 and R3 have the default configuration. The router R2 priority is set to 99. Which commands on R3 configure it as the DR in the 10.0.4.0/24 network?

- A. R3(config)#interface Gig0/1  
R3(config-if)#ip ospf priority 100
- B. R3(config)#interface Gig0/0  
R3(config-if)#ip ospf priority 100
- C. R3(config)#interface Gig0/0  
R3(config-if)#ip ospf priority 1
- D. R3(config)#interface Gig0/1  
R3(config-if)#ip ospf priority 0

**Answer:** A

#### Question 34

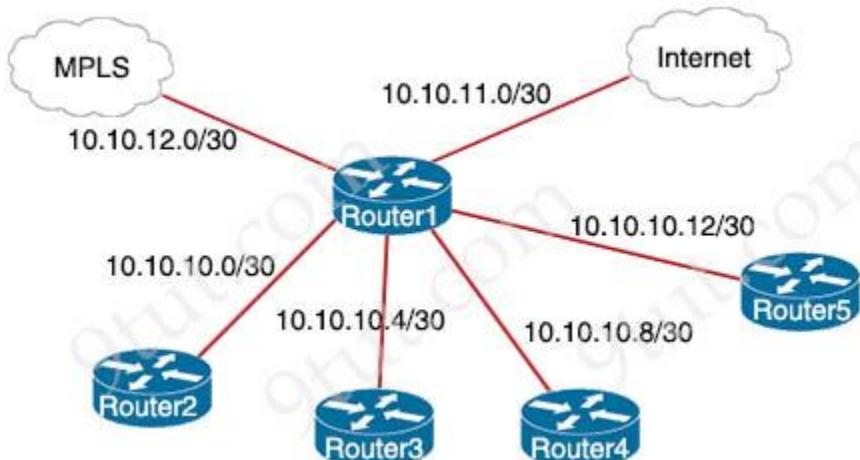
Which QoS per-hop behavior changes the value of the ToS field in the IPv4 packet header?

- A. shaping
- B. marking
- C. policing
- D. classification

**Answer:** B

#### Question 35

Refer to the exhibit.



```

Router1#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 10.10.12.2,03:32:14
  209.165.201.0/27 is subnetted, 1 subnets
B    209.165.201.0 [20/0] via 10.10.12.2,02:26:53
  209.165.202.0/27 is subnetted, 1 subnets
B    209.165.202.128 [20/0] via 10.10.12.2,02:46:03
  10.0.0.0/8 is variably subnetted, 10 subnets, 4 masks
O     10.10.13.0/25 [110/2] via 10.10.10.1,00:00:04, GigabitEthernet0/0
O     10.10.13.128/28 [110/2] via 10.10.10.5,00:00:12, GigabitEthernet0/1
O     10.10.13.144/28 [110/2] via 10.10.10.9,00:01:57, GigabitEthernet0/2
O     10.10.13.160/29 [110/2] via 10.10.10.5,00:00:12, GigabitEthernet0/1
O     10.10.13.208/29 [110/2] via 10.10.10.13,00:01:57, GigabitEthernet0/3
S*   0.0.0.0/0 [1/0] via 10.10.11.2

```

Which next-hop IP address does Router1 use for packets destined to host 10.10.13.158?

- A. 10.10.10.5
- B. 10.10.11.2
- C. 10.10.12.2
- D. 10.10.10.9

**Answer:** D

### Question 36

What is one reason to implement LAG on a Cisco WLC?

- A. to increase security and encrypt management frames
- B. to provide link redundancy and load balancing
- C. to allow for stateful and link-state failover
- D. to enable connected switch ports to failover and use different VLANs

**Answer:** B

### **Question 37**

Refer to the exhibit.

R1# show ip route

Codes:

C - connected, S - static, I - IGRP, 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, E - EGP  
i - IS-IS, LI - IS-IS level-1, L2 - IS-IS level-2, \* - candidate default,  
U - per-user static route, o- ODR

Gateway of last resort not set

- C 10.0.0.0/8 is directly connected, Loopback0
- C 10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
- O 10.0.1.3/32 [110/100] via 10.0.1.100, 00:39:08, Serial0
- C 10.0.1.0/24 is directly connected, Serial0
- O 10.0.1.5/32 [110/5] via 10.0.1.50, 00:39:08, Serial0
- O 10.0.10.0/24 [110/10] via 10.0.1.4, 00:39:08, Gigabit Ethernet 0/0
- D 10.0.10.0/24 [90/10] via 10.0.1.5, 00:39:08, Gigabit Ethernet 0/1

Web traffic is coming in from the WAN interface. Which route takes precedence when the router is processing traffic destined for the LAN network at 10.0.10.0/24?

- A. via next-hop 10.0.1.5
- B. via next-hop 10.0.1.4
- C. via next-hop 10.0.1.50
- D. via next-hop 10.0.1.100

**Answer: A**

### **Question 38**

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

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

**Answer: D**

### **Question 39**

A Cisco engineer must configure a single switch interface to meet these requirements

- \* accept untagged frames and place them in VLAN 20
- \* accept tagged frames in VLAN 30 when CDP detects a Cisco IP phone

Which command set must the engineer apply?

A. switchport mode access

switchport access vlan 20  
switchport voice vlan 30

B. switchport mode trunk

switchport access vlan 20  
switchport voice vlan 30

C. switchport mode dynamic auto

switchport trunk native vlan 20  
switchport trunk allowed vlan 30  
switchport voice vlan 30

D. switchport mode dynamic desirable

switchport access vlan 20  
switchport trunk allowed vlan 30  
switchport voice vlan 30

**Answer:** C

#### **Question 40**

Refer to the exhibit.

```
Router#show run
Building configuration...
Current configuration : 1530 bytes
!
Last configuration change at 11:32:53 UTC Thu Feb 10 2020
upgrade fpd auto
version 15.2
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname Router
!
boot-start-marker
boot-end-marker
!
!
!
no aaa new-model
no ip icmp rate-limit unreachable
!
!
--More--
```

Which minimum configuration items are needed to enable Secure Shell version 2 access to R15?

A. Router(config)#hostname R15

```
R15(config)#crypto key generate rsa general-keys modulus 1024
R15(config-line)#line vty 0 15
R15(config-line)# transport input ssh
R15(config)#ip ssh source-interface Fa0/0
R15(config)#ip ssh stricthostkeycheck
```

B. Router(config)#ip domain-name cisco.com

```
Router(config)#crypto key generate rsa general-keys modulus 1024
Router(config)#ip ssh version 2
Router(config-line)#line vty 0 15
Router(config-line)# transport input all
Router(config)#ip ssh logging events
```

C. Router(config)#hostname R15

```
R15(config)#ip domain-name cisco.com
R15(config)#crypto key generate rsa general-keys modulus 1024
R15(config)#ip ssh version 2
R15(config-line)#line vty 0 15
R15(config-line)# transport input ssh
```

D. Router(config)#crypto key generate rsa general-keys modulus 1024

```
Router(config)#ip ssh version 2
Router(config-line)#line vty 0 15
```

```
Router(config-line)# transport input ssh  
Router(config)#ip ssh logging events  
R15(config)#ip ssh stricthostkeycheck
```

**Answer:** C

### Question 41

Refer to the exhibit.

The exhibit shows a configuration interface for a wireless access point. It includes sections for 'Protected Management Frame' (Fast Transition set to Disable, PMF set to Disabled), 'WPA+WPA2 Parameters' (WPA Policy is unchecked, WPA2 Policy is checked, WPA2 Encryption includes AES, TKIP, CCMP256, GCMP128, and GCMP256), and 'Authentication Key Management' (802.1X, CCKM, PSK, FT 802.1X, and FT PSK options with checkboxes for Enable).

Parameter	Setting
Fast Transition	Disable
PMF	Disabled
WPA Policy	unchecked
WPA2 Policy	checked
WPA2 Encryption	AES, TKIP, CCMP256, GCMP128, GCMP256
OSEN Policy	unchecked
802.1X	Enable
CCKM	Enable
PSK	Enable
FT 802.1X	Enable
FT PSK	Enable

Users need to connect to the wireless network with IEEE 802.11r-compatible devices. The connection must be maintained as users travel between floors or to other areas in the building. What must be the configuration of the connection?

- A. Select the WPA Policy option with the CCKM option
- B. Disable AES encryption
- C. Enable Fast Transition and select the FT 802.1x option
- D. Enable Fast Transition and select the FT PSK option

**Answer:** C

### Question 42

Refer to the exhibit.



```

interface Po1
switchport
switchport mode access
switchport access vlan 2

interface E1/1 - 2
switchport
switchport mode access
switchport access vlan 2

interface Po1
switchport
switchport mode access
switchport access vlan 2

interface E1/1 - 2
switchport
switchport mode access
switchport access vlan 2

```

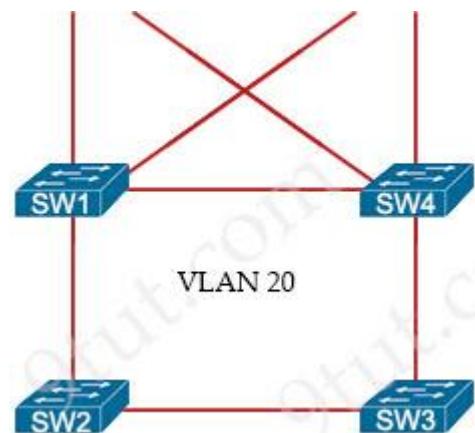
An engineer is configuring an EtherChannel using LACP between Switches 1 and 2. Which configuration must be applied so that only Switch 1 sends LACP initiation packets?

- A. Switch1(config-if)#channel-group 1 mode on  
Switch2(config-if)#channel-group 1 mode passive
- B. Switch1(config-if)#channel-group 1 mode passive  
Switch2(config-if)#channel-group 1 mode active
- C. Switch1(config-if)#channel-group 1 mode active  
Switch2(config-if)#channel-group 1 mode passive
- D. Switch1(config-if)#channel-group 1 mode on  
Switch2(config-if)#channel-group 1 mode active

**Answer:** C

#### Question 43

Refer to the exhibit.



SW1 = 24596 0018.184e.3c00
SW2 = 28692 004a.14e5.4077
SW3 = 32788 0022.55cf.dd00

SW4 = 64000 0041.454d.407f

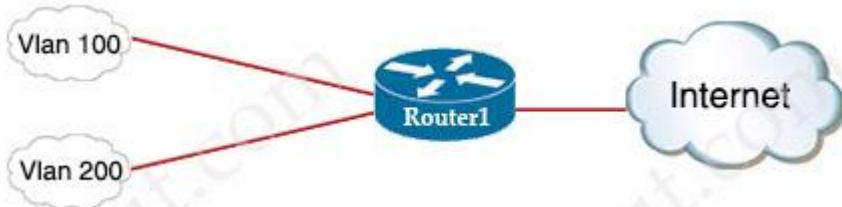
Which switch becomes the root of a spanning tree for VLAN 20 if all links are of equal speed?

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

**Answer:** A

#### Question 44

Refer to the exhibit.



```
Router1(config)#interface GigabitEthernet0/0
Router1(config-if)#ip address 209.165.200.225 255.255.255.224
Router1(config-if)#ip nat outside
Router1(config)#interface GigabitEthernet0/1
Router1(config-if)#ip nat inside
Router1(config)#interface GigabitEthernet
Router1(config-if)#encapsulation dot1Q 100
Router1(config-if)#ip address 10.10.10.1 255.255.255.0
Router1(config)#interface GigabitEthernet0/1.200
Router1(config-if)#encapsulation dot1Q 200
Router1(config-if)#ip address 10.10.20.1 255.255.255.0
Router1(config)#ip access-list standard NAT_INSIDE_RANGES
Router1(config-std-nacl)#permit 10.10.10.0 0.0.0.255
Router1(config)#ip nat inside source list NAT_INSIDE_RANGES interface GigabitEthernet0/0
overload
```

Users on existing VLAN 100 can reach sites on the Internet. Which action must the administrator take to establish connectivity to the Internet for users in VLAN 200?

- A. Define a NAT pool on the router.
- B. Update the NAT INSIDF RANGFS ACL

- C. Configure the ip nat outside command on another interface for VLAN 200
- D. Configure static NAT translations for VLAN 200

**Answer:** B

#### **Question 45**

Which protocol uses the SSL?

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

**Answer:** B

#### **Question 46**

Drag and drop the facts about wireless architectures from the left onto the types of access point on the right. Not all options are used.



**Answer:**

#### **Autonomous Access Point**

- + requires a management IP address
- + accessible for management via Telnet, SSH, or a web GUI

#### **Cloud-Based Access Point**

- + configured and managed by a WLC
- + supports automatic deployment

### Question 47

Which value is the unique identifier that an access point uses to establish and maintain wireless connectivity to wireless network devices?

- A. VLANID
- B. SSID
- C. RFID
- D. WLANID

**Answer:** B

### Question 48

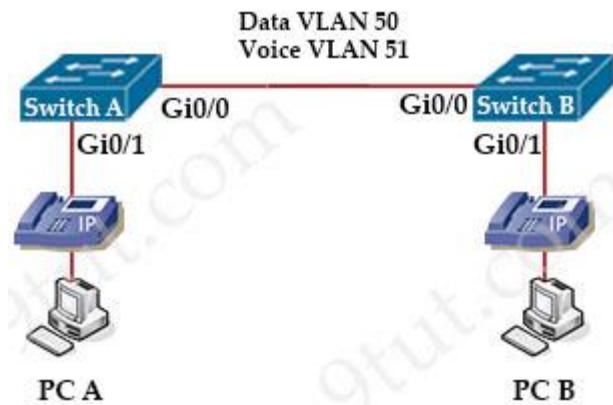
A network engineer is configuring a switch so that it is remotely reachable via SSH. The engineer has already configured the host name on the router. Which additional command must the engineer configure before entering the command to generate the RSA key?

- A. password password
- B. crypto key generate rsa modulus 1024
- C. ip domain-name domain
- D. ip ssh authentication-retries 2

**Answer:** C

### Question 49

Refer to the exhibit.



Switch A is newly configured. All VLANs are present in the VLAN database. The IP phone and PC A on Gi0/1 must be configured for the appropriate VLANs to establish connectivity between the PCs. Which command set fulfills the requirement?

- A. SwitchA(config-if)#switchport mode access  
 SwitchA(config-if)#switchport access vlan 50  
 SwitchA(config-if)#switchport voice vlan 51
- B. SwitchA(config-if)#switchport mode access  
 SwitchA(config-if)#switchport access vlan 50  
 SwitchA(config-if)#switchport voice vlan untagged
- C. SwitchA(config-if)#switchport mode trunk  
 SwitchA(config-if)#switchport trunk allowed vlan add 50, 51  
 SwitchA(config-if)#switchport voice vlan dot1p
- D. SwitchA(config-if)#switchport mode trunk  
 SwitchA(config-if)#switchport trunk allowed vlan 50, 51  
 SwitchA(config-if)#switchport qos trust cos

**Answer:** A

### Question 50

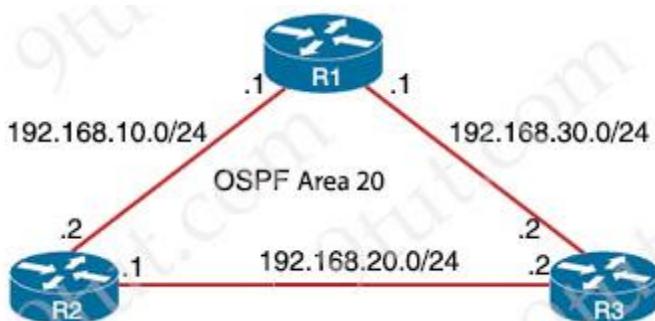
Which QoS traffic handling technique retains excess packets in a queue and reschedules these packets for later transmission when the configured maximum bandwidth has been surpassed?

- A. traffic shaping  
 B. traffic policing  
 C. weighted random early detection  
 D. traffic prioritization

**Answer:** A

### Question 51

Refer to the exhibit.



R1 learns all routes via OSPF. Which command configures a backup static route on R1 to reach the 192.168.20.0/24 network via R3?

- A. R1(config)#ip route 192.168.20.0 255.255.255.0 192.168.30.2 111
- B. R1(config)#ip route 192.168.20.0 255.255.255.0 192.168.30.2 90
- C. R1(config)#ip route 192.168.20.0 255.255.0.0 192.168.30.2
- D. R1(config)#ip route 192.168.20.0 255.255.255.0 192.168.30.2

**Answer:** A

**Question 52**

Which Layer 2 switch function encapsulates packets for different VLANs so that the packets traverse the same port and maintain traffic separation between the VLANs?

- A. VLAN numbering
- B. VLAN DSCP
- C. VLAN tagging
- D. VLAN marking

**Answer:** C

**Question 53**

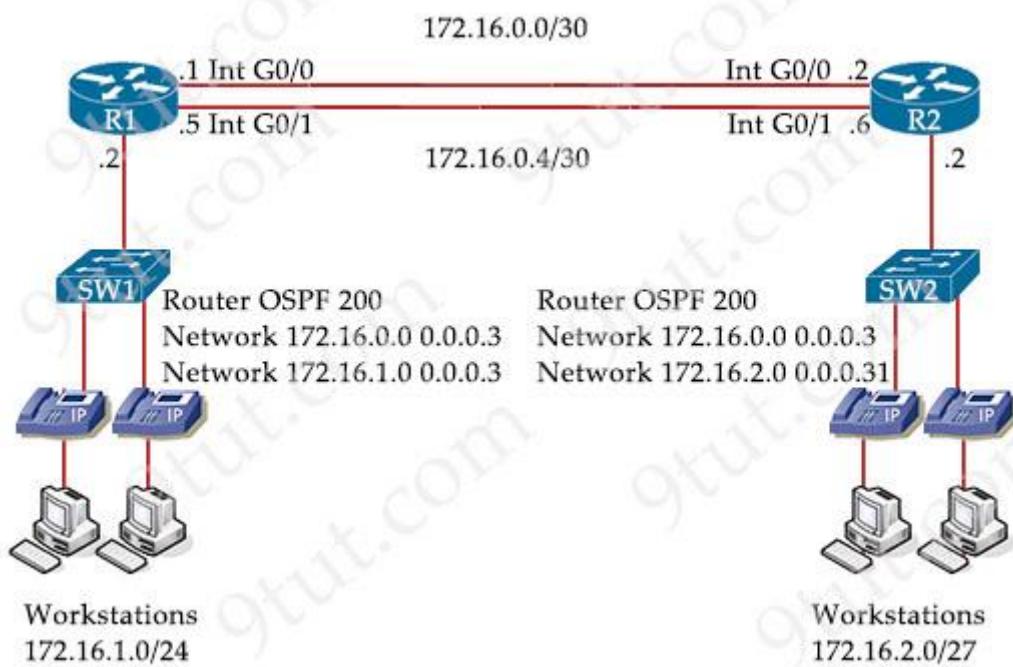
What is an expected outcome when network management automation is deployed?

- A. A distributed management plane must be used.
- B. Software upgrades are performed from a central controller
- C. Complexity increases when new device configurations are added
- D. Custom applications are needed to configure network devices

**Answer:** B

**Question 54**

Refer to the exhibit.



The primary route across Gi0/0 is configured on both routers. A secondary route must be configured to establish connectivity between the workstation networks. Which command set must be configured to complete this task?

A. R1  
`ip route 172.16.2.0 255.255.255.240 172.16.0.2 113`

R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.1 114`

B. R1  
`ip route 172.16.2.0 255.255.255.240 172.16.0.5 89`

R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.6 89`

C. R1  
`ip route 172.16.2.0 255.255.255.248 172.16.0.5 110`

R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.6 110`

D. R1  
`ip route 172.16.2.0 255.255.255.224 172.16.0.6 111`

R2  
`ip route 172.16.1.0 255.255.255.0 172.16.0.5 112`

**Answer: D**

===== New Questions (added on 4th-Mar-2022) =====

### Question 55

Refer to the exhibit.

```
Cat9300#show cdp
Global CDP information:
  Sending CDP packets every 60 seconds
  Sending a holdtime value of 180 seconds
  Sending CDPv2 advertisements is enabled
```

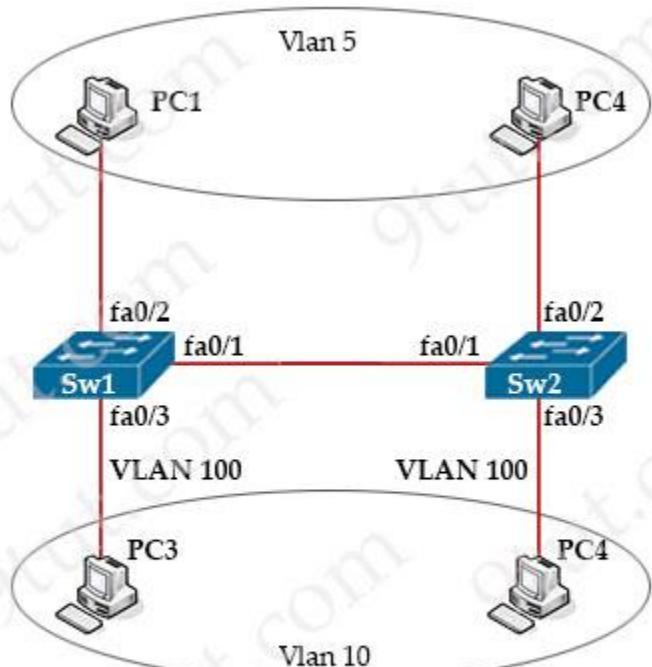
Which action must be taken so that neighboring devices rapidly discover switch Cat9300?

- A. Enable portfast on the ports that connect to neighboring devices
- B. Configure the **cdp holdtime 10** command on switch Cat9300
- C. Configure the **cdp timer 10** command on the neighbors of switch Cat9300
- D. Configure the **cdp timer 10** command on switch Cat9300

**Answer:** D

### Question 56

Refer to the exhibit.



```
Switch2(config)#interface fa0/1
Switch2(config-if)#switchport mode dynamic auto
Switch2(config-if)#switchport trunk allowed vlan 5,10
```

SW2 is replaced due to a hardware failure. A network engineer starts to configure SW2 by copying the Fa0/1 interface configuration from SW1. Which command must be configured on the Fa0/1 interface of SW2 to enable PC1 to connect to PC2?

- A. switchport mode trunk
- B. switchport trunk native vlan 10
- C. switchport trunk allowed remove 10
- D. switchport mode access

**Answer:** A

## CCNA – New Questions 4

### Question 1

Which communication interaction takes place when a southbound API is used?

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

**Answer:** B

### Question 2

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

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

**Answer:** A

### Question 3

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.

**Answer: A**

**Question 4**

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

**Answer: D**

**Question 5**

Refer to the exhibit.

```
Switch1#show etherchannel summary
Flags: D - down    P - bundled 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
```

Which change to the configuration on Switch allows the two switches to establish an EtherChannel?

- 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 PAgP and use auto mode

**Answer: B**

**Question 6**

Where does wireless authentication happen?

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

**Answer: D**

**Question 7**

What is the path for traffic sent from one user workstation to another workstation on a separate switch in a three-layer architecture model?

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

**Answer: D**

**Question 8**

What are two benefits of FHRPs? (Choose two)

- A. They prevent loops 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

**Answer: D E**

### **Question 9**

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

**Answer:** D

### **Question 10**

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

**Answer:** A D

### **Question 11**

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

**Answer:** D

### **Question 12**

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

**Answer:** D

### **Question 13**

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

- A. access ports
- B. Layer 3 main interfaces
- C. Layer 3 subinterfaces
- D. trunk ports

**Answer:** A

### **Question 14**

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

**Answer:** C

### **Question 15**

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

**Answer:** A C

**Question 16**

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

**Answer:** D

**Question 17**

What prevents a workstation from receiving a DHCP address?

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

**Answer:** B

**Question 18**

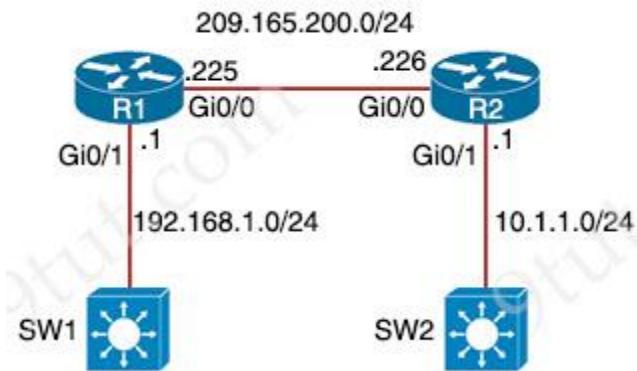
What is a capability of FTP in network management operations?

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

**Answer:** A

**Question 19**

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 0.0.0.0 0.0.0.0 209.165.200.225  
 R2  
 ip route 0.0.0.0 0.0.0.0 209.165.200.226

B.  
 R1  
 ip route 0.0.0.0 0.0.0.0 209.165.200.226  
 R2  
 ip route 0.0.0.0 0.0.0.0 209.165.200.225

C.  
 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

D.  
 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

**Answer:** B

### Question 20

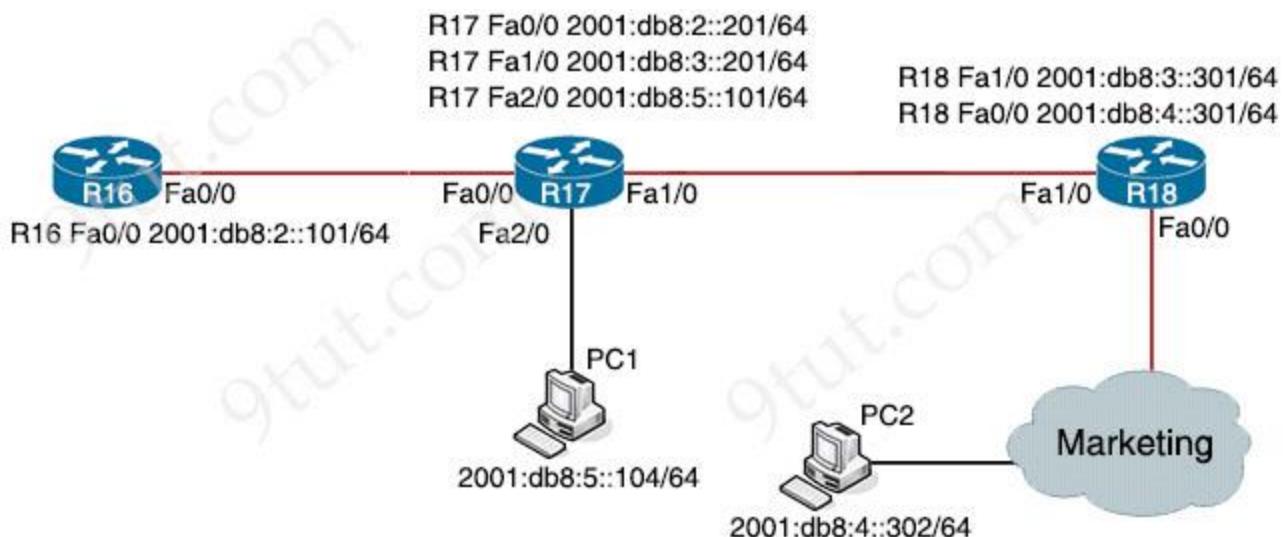
Which type of organization should use a collapsed-core architecture?

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

**Answer: B**

### Question 21

Refer to the exhibit.



Which IPv6 configuration is required for R17 to successfully ping the WAN interface on R18?

Option A	Option B
<pre>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</pre>	<pre>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</pre>

! no cdp log mismatch duplex ipv6 route 2001:DB8:4::/64 2001:DB8:3::301	! no cdp log mismatch duplex ipv6 route 2001:DB8:4::/64 2001:DB8:2::201
<b>Option C</b>  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::/64 2001:DB8:5::101	<b>Option D</b>  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::/64 2001:DB8:4::302

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

**Answer:** A

### Question 22

Drag and drop the lightweight access point operation modes from the left onto the descriptions on the right.

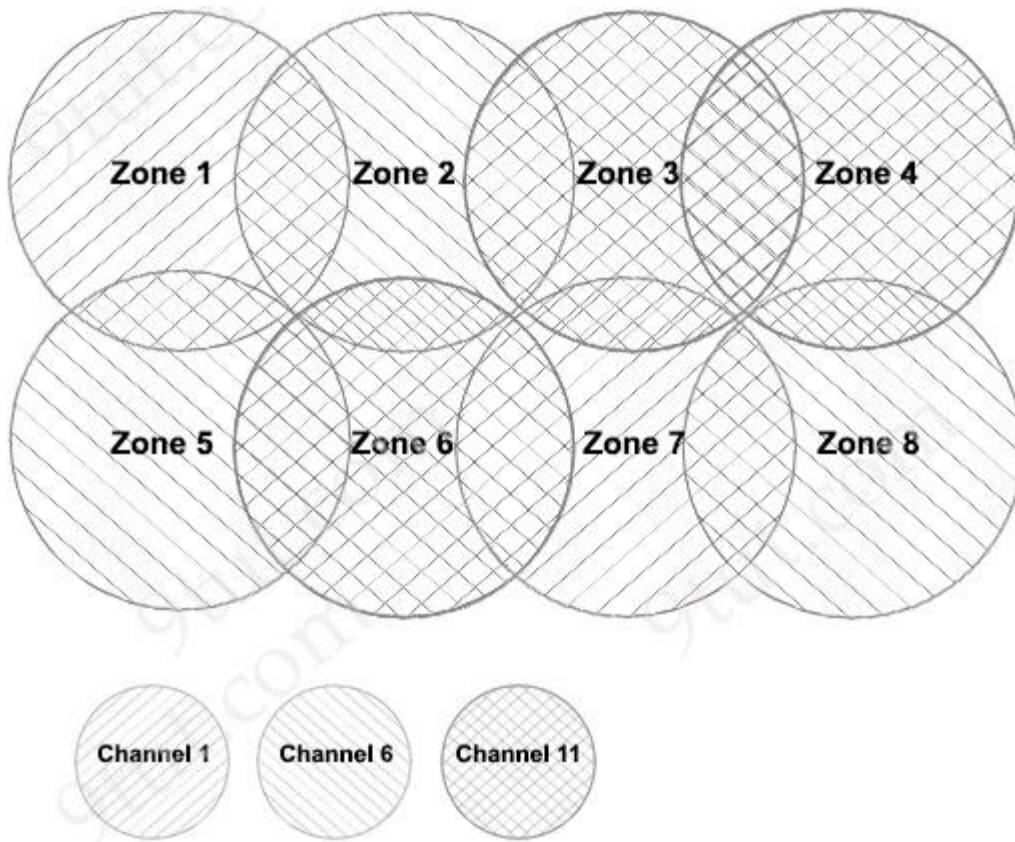
monitor mode	allows for packet captures of wireless traffic
bridge mode	allows the access point to communicate with the WLC over a WAN link
Flexconnect mode	receive only mode which acts as a dedicated sensor for RFID and IDS
local mode	preferred for connecting access points in a mesh environment
rogue detector mode	transmits normally on one channel and monitors other channels for noise and interference
sniffer mode	monitor for rogue APs, does not handle data at all

### Answer:

- + allows for packet captures of wireless traffic: sniffer mode
- + allows the access point to communicate with the WLC over a WAN link: Flexconnect mode
- + receive only mode which acts as a dedicated sensor for RFID and IDS: monitor mode
- + preferred for connecting access points in a mesh environment: bridge mode
- + transmits normally on one channel and monitors other channels for noise and interference: local mode
- + monitor for rogue APs, does not handle data at all: rogue detector mode

### Question 23

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

**Answer:** C

#### **Question 24**

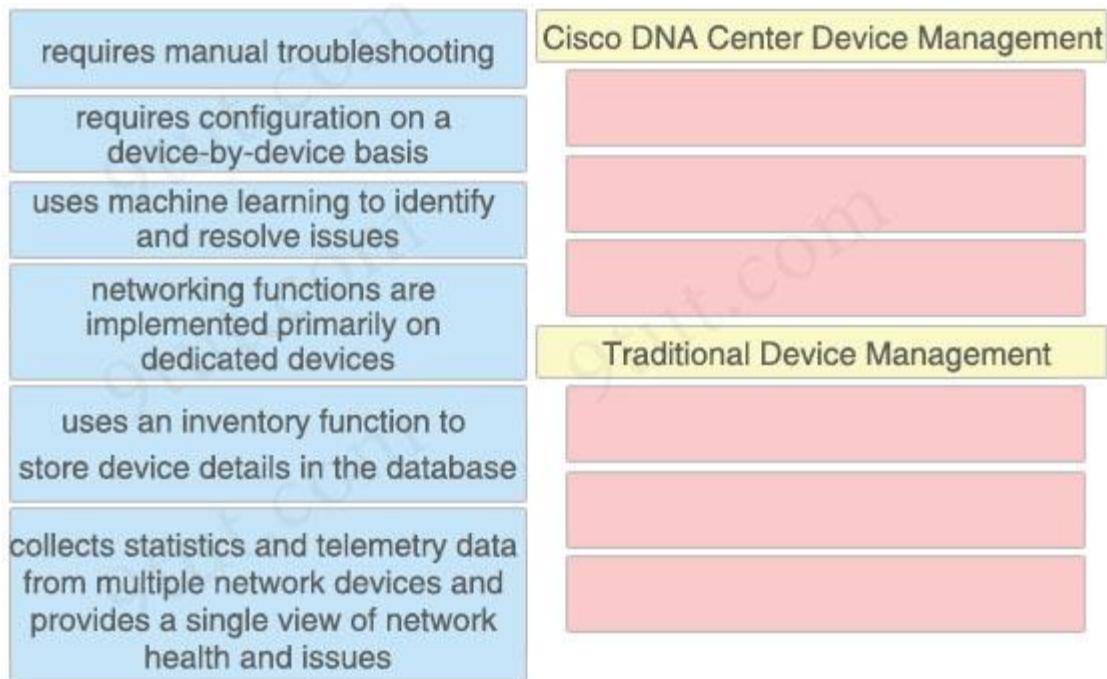
Which device permits or denies network traffic based on a set of rules?

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

**Answer:** D

#### **Question 25**

Drag the descriptions of device management from the left onto the types of device management on the right.



#### Answer:

##### **Cisco DNA Center Device Management:**

- + uses machine learning to identify and resolve issues
- + networking functions are implemented primarily on dedicated devices
- + collects statistics and telemetry data from multiple network devices and provides a single view of network health and issues

##### **Traditional Device Management:**

- + requires manual troubleshooting
- + requires configuration on a device-by-device basis
- + uses an inventory function to store device details in the database

#### Question 26

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

#### Answer: A

### **Question 27**

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:db8::700:3:400F:572B
- B. ipv6 address 2001:db8:0::700:3:4F:572B
- C. ipv6 address 2001:Odb8::7:3:4F:572B
- D. ipv6 address 2001::db8:0000::700:3:400F:572B

**Answer:** A

### **Question 28**

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

**Answer:** D

### **Question 29**

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

### **Question 30**

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**

**Question 31**

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?

Option A	Option B
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	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
Option C	Option D
R5(config)#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)#no lldp run R5(config)#cdp run R5#sh cdp neighbor R5#sh lldp neighbor

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

**Answer:** C

**Question 32**

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

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

**Answer:** B

**Question 33**

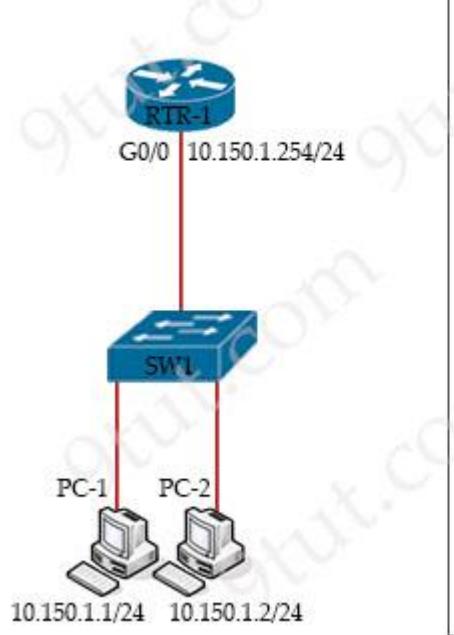
What is a DNS lookup operation?

- A. serves requests over destination port 53
- B. DNS server pings the destination to verify that it is available
- 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:** A

**Question 34**

Refer to the exhibit.



```

RTR-1:
hostname RTR-1
!
interface GigabitEthernet0/0
ip address 10.150.1.254 255.255.255.0
duplex auto
speed auto
!
access-list 10 deny host 10.150.1.1
!
line con 0
password 7 083238384A11
login
!
line vty 0 4
access-class 10 in
password 7 083238384A11
login
!
end

```

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".

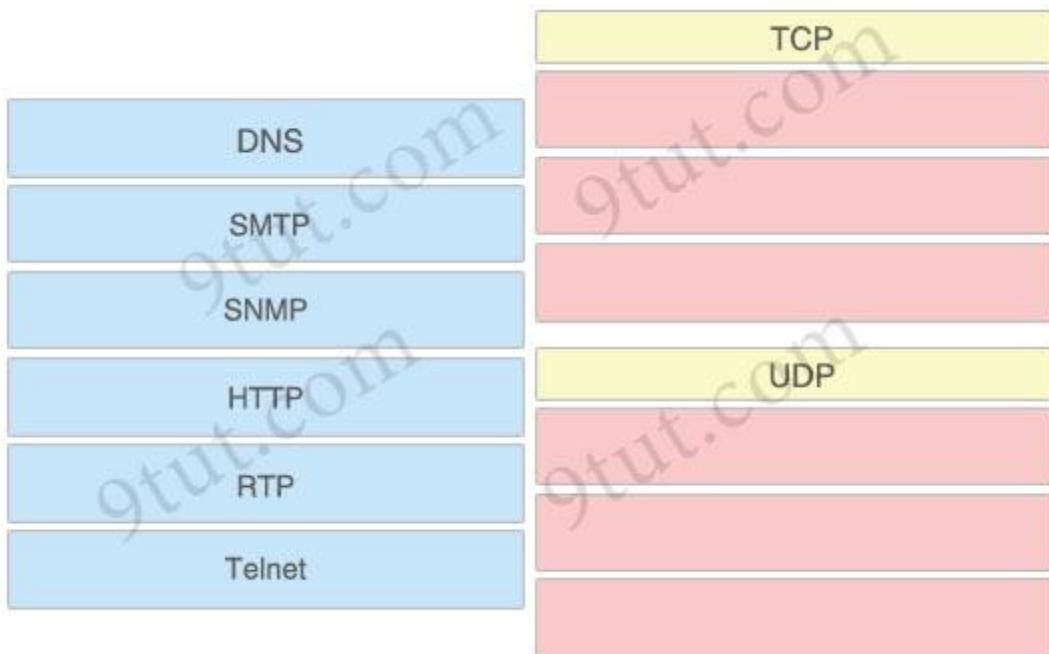
Without allowing Telnet access from PC-1, which action must be taken to permit the traffic?

- 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

### Question 35

Drag and drop the TCP/IP protocols from the left onto their primary transmission protocols on the right.



**Answer:**

TCP:

- + SMTP
- + HTTP
- + Telnet

UDP:

- + DNS
- + SNMP
- + RTP

===== New Questions (added on 13th-Feb-2022) =====

**Question 36**

Refer to the exhibit.

```

Switch#show ip dhcp snooping
Switch DHCP snooping is enabled
Switch DHCP gleaning is disabled
DHCP snooping is configured on following VLANs:
1
DHCP snooping is operational on following VLANs:
1
DHCP snooping is configured on the following L3 Interfaces:
Insertion of option 82 is disabled
circuit-id default format: vlan-mod-port
remote-id: aabb.cc00.6500 (MAC)
Option 82 on untrusted port is not allowed
Verification of hwaddr field is enabled
Verification of giaddr field is enabled
DHCP snooping trust/rate is configured on the following interfaces:
Interface Trusted Allow option Rate limit (pps)

```

```

Switch#show ip dhcp snooping statistics detail
Packets Processed by DHCP Snooping = 34
Packets Dropped Because
IDB not known = 0
Queue full = 0
Interface is in errdisabled = 0
Rate limit exceeded = 0
Received on untrusted ports = 32
Nonzero giaddr = 0
Source mac not equal to chaddr = 0
No binding entry = 0
Insertion of opt82 fail = 0
Unknown packet = 0
Interface Down = 0
Unknown output interface = 0
Misdirected Packets = 0
Packets with Invalid Size = 0
Packets with Invalid Option = 0

```

The DHCP server and clients are connected to the same switch. What is the next step to complete the DHCP configuration to allow clients on VLAN 1 to receive addresses from the DHCP server?

- A. Configure the **ip dhcp snooping trust** command on the interface that is connected to the DHCP server
- B. Configure the **ip dhcp relay information option** command on the interface that is connected to the DHCP server
- C. Configure the **ip dhcp relay information option** command on the interface that is connected to the DHCP client
- D. Configure the **ip dhcp snooping trust** command on the interface that is connected to the DHCP client

**Answer:** A

### Question 37

Which two components comprise part of a PKI? (Choose two)

- A. RSA token
- B. clear-text password that authenticates connections
- C. one or more CRLs
- D. preshared key that authenticates connections
- E. CA that grants certificates

**Answer:** C E

### Question 38

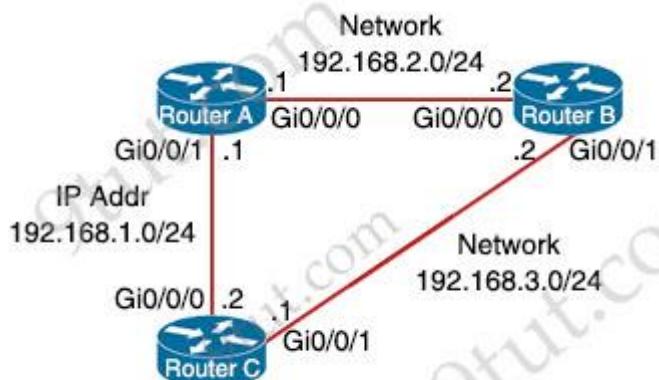
A network administrator is setting up a new IPv6 network using the 64-bit address 2001:0EB8:00C1:2200:0001:0000:0000:0331/64. To simplify the configuration, the administrator has decided to compress the address. Which IP address must the administrator configure?

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

**Answer:** D

### Question 39

Refer to the exhibit.



```
RouterA(config)#ip route 0.0.0.0 0.0.0.0 192.168.2.2
```

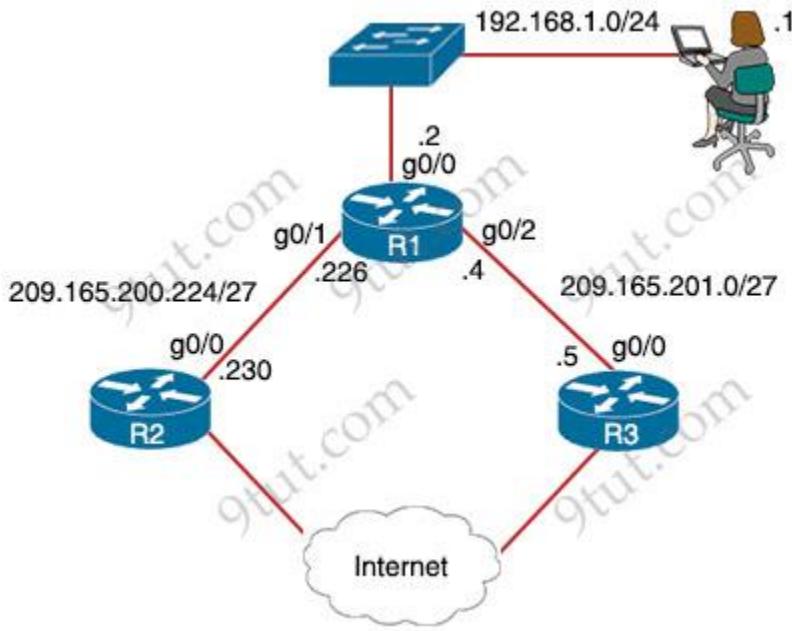
Which command must be issued to enable a floating static default route on router A?

- A. ip route 0.0.0.0 0.0.0.0 192.168.2.1 10
- B. ip route 0.0.0.0 0.0.0.0 192.168.1.2
- C. ip route 0.0.0.0 0.0.0.0 192.168.1.2 10
- D. ip default-gateway 192.168.2.1

**Answer:** C

### Question 40

Refer to the exhibit.



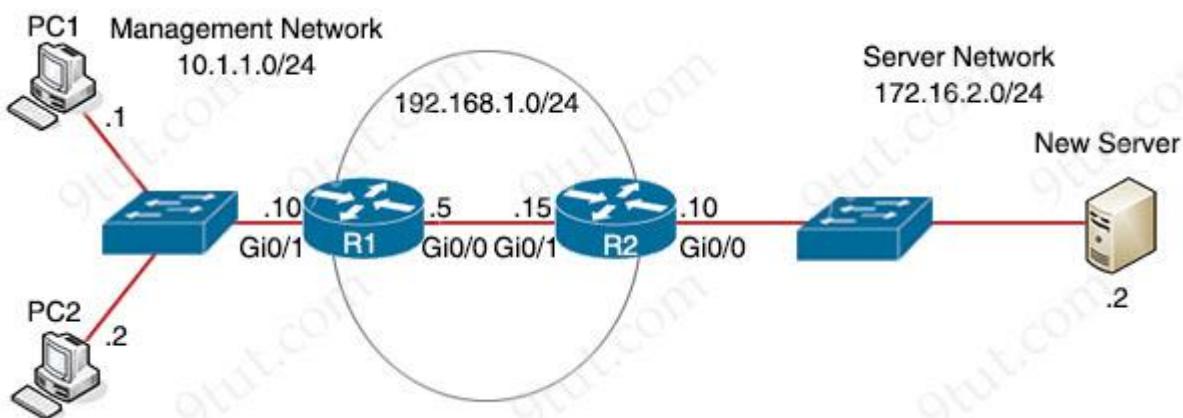
Router R1 currently is configured to use R3 as the primary route to the Internet, and the route uses the default administrative distance settings. A network engineer must configure R1 so that it uses R2 as a backup, but only if R3 goes down. Which command must the engineer configure on R1 so that it correctly uses R2 as a backup route, without changing the administrative distance configuration on the link to R3?

- A. ip route 0.0.0.0 0.0.0.0 g0/1 6
- B. ip route 0.0.0.0 0.0.0.0 g0/1 1
- C. ip route 0.0.0.0 0.0.0.0 209.165.201.5 10
- D. ip route 0.0.0.0 0.0.0.0 209.165.200.226 1

**Answer:** A

#### Question 41

Refer to the exhibit.



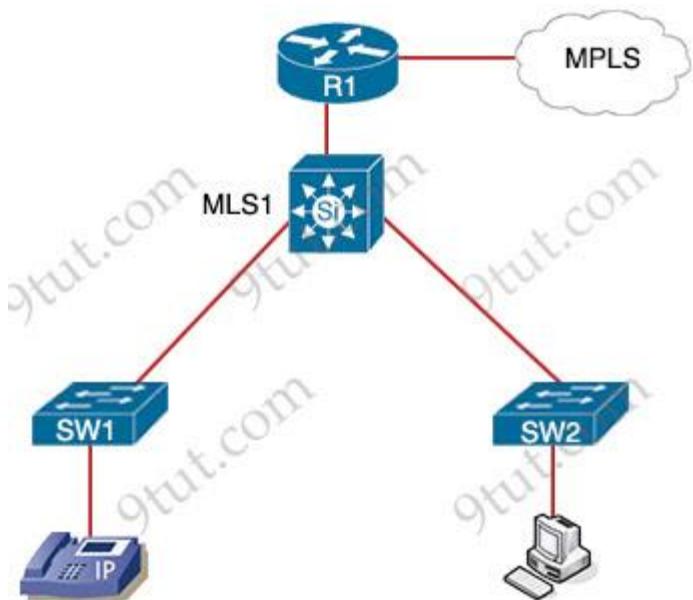
An engineer is updating the R1 configuration to connect a new server to the management network. The PCs on the management network must be blocked from pinging the default gateway of the new server. Which command must be configured on R1 to complete the task?

- A. R1(config)#ip route 172.16.2.0 255.255.255.0 192.168.1.15
- B. R1(config)#ip route 172.16.2.2 255.255.255.255 gi0/0
- C. R1(config)#ip route 172.16.2.0 255.255.255.0 192.168.1.5
- D. R1(config)#ip route 172.16.2.2 255.255.255.248 gi0/1

**Answer:** B

#### Question 42

Refer to the exhibit.



Which plan must be implemented to ensure optimal QoS marking practices on this network?

- A. As traffic enters from the access layer on SW1 and SW2, trust all traffic markings
- B. Trust the IP phone markings on SW1 and mark traffic entering SW2 at SW2
- C. As traffic traverses MLS1 remark the traffic, but trust all markings at the access layer
- D. Remark traffic as it traverses R1 and trust all markings at the access layer

**Answer:** B

#### Question 43

Drag and drop the Rapid PVST+ forwarding state actions from the left to the right. Not all actions are used.

Frames received from the attached segment are discarded	action
BPDUs received are forwarded to the system module	action
The port in the forwarding state responds to network management messages	action
BPDUs received from the system module are processed and transmitted	action
Switched frames received from other ports are advanced	
Frames received from the attached segment are processed	

### Answer:

BPDUs received are forwarded to the system module  
 The port in the forwarding state responds to network management messages  
 Switched frames received from other ports are advanced  
 Frames received from the attached segment are processed

### Question 44

Refer to the exhibit.

```

interface FastEthernet0/10
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
  
```

Which configuration enables DHCP addressing for hosts connected to interface FastEthernet0/1 on router R4?

- A. 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
- B. 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
- C. 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
- 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

**Answer:** D

#### Question 45

Refer to the exhibit.



Which configuration allows routers R14 and R16 to form an OSPFv2 adjacency while acting as a central point for exchanging OSPF information between routers?

Option A	Option B
R14# interface FastEthernet0/0 ip address 10.73.65.65 255.255.255.252 ip ospf network broadcast ip ospf priority 0 ip mtu 1400  router ospf 10 router-id 10.10.1.14 network 10.10.1.14 0.0.0.0 area 0	R14# interface FastEthernet0/0 ip address 10.73.65.65 256.255.255.252 ip ospf network broadcast ip ospf priority 255 ip mtu 1500  router ospf 10 router-id 10.10.1.14 network 10.10.1.14 0.0.0.0 area 0

<pre> network 10.73.65.64 0.0.0.3 area 0 R86# interface Loopback0 ip address 10.10.1.86 266.255.255.255 interface FastEthernet0/0 ip address 10.73.65.66 255.255.255.252 ip ospf network broadcast ip mtu 1500 router ospf 10 router-id 10.10.1.86 network 10.10.1.86 0.0.0.0 area 0 network 10.73.65.64 0.0.0.3 area 0 </pre>	<pre> network 10.73.65.64 0.0.0.3 area 0 R86# interface FastEthernet0/0 ip address 10.73.65.66 256.255.255.252 ip ospf network broadcast ip mtu 1500 router ospf 10 router-id 10.10.1.86 network 10.10.1.86 0.0.0.0 area 0 network 10.73.65.64 0.0.0.3 area 0 </pre>
<b>Option C</b> <pre> R14# interface Loopback0 ip ospf 10 area 0 interface FastEthernet0/0 ip address 10.73.65.65 255.255.255.252 ip ospf network broadcast ip ospf 10 area 0 ip mtu 1500 router ospf 10 ip ospf priority 255 router-id 10.10.1.14 R86# interface Loopback0 ip ospf 10 area 0 interface FastEthernet0/0 ip address 10.73.65.66 255.255.255.252 ip ospf network broadcast ip ospf 10 area 0 ip mtu 1500 router ospf 10 router-id 10.10.1.86 </pre>	<b>Option D</b> <pre> R14# interface FastEthernet0/0 ip address 10.73.65.65 255.255.255.252 ip ospf network broadcast ip ospf priority 255 ip mtu 1500 router ospf 10 router-id 10.10.1.14 network 10.10.1.14 0.0.0.0 area 0 network 10.73.65.64 0.0.0.3 area 0 R86# interface FastEthernet0/0 ip address 10.73.65.66 255.255.255.252 ip ospf network broadcast ip mtu 1400 router ospf 10 router-id 10.10.1.86 network 10.10.1.86 0.0.0.0 area 0 network 10.73.65.64 0.0.0.3 area 0 </pre>

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

**Answer: B**

**Question 46**

Which wireless security protocol relies on Perfect Forward Secrecy?

- A. WPA
- B. WPA3
- C. WPA2
- D. WEP

**Answer: B**

**Question 47**

Refer to the exhibit.

MacOs\$ ifconfig

```
en0: flags=8863<UP,BROADCAST,SMART,RUNNING,SIMPLEX,MULTICAST> mtu 1500
    options=400<CHANNEL_IO>
    ether f0:18:34:34:34
    inet6 fe80::492:c09f:57cc:3343%en0 prefixlen 64 sexured scopeid 0x6
        inet 10.8.138.14 netmask 0xfffffe000 broadcast 10.8.159.255
        nd6 options=201<PERFORMNUD,DAD>
        media: autoselect
        status: active
```

A network engineer must provide configured IP addressing details to investigate a firewall rule issue. Which subnet and mask identify what is configured on the en0 interface?

- A. 10.8.0.0/16
- B. 10.8.64.0/18
- C. 10.8.128.0/19
- D. 10.8.138.0/24

**Answer: C**

**Question 48**

A network engineer must configure two new subnets using the address block 10.70.128.0/19 to meet these requirements:

- \* The first subnet must support 24 hosts.

- \* The second subnet must support 472 hosts
- \* Both subnets must use the longest subnet mask possible from the address block

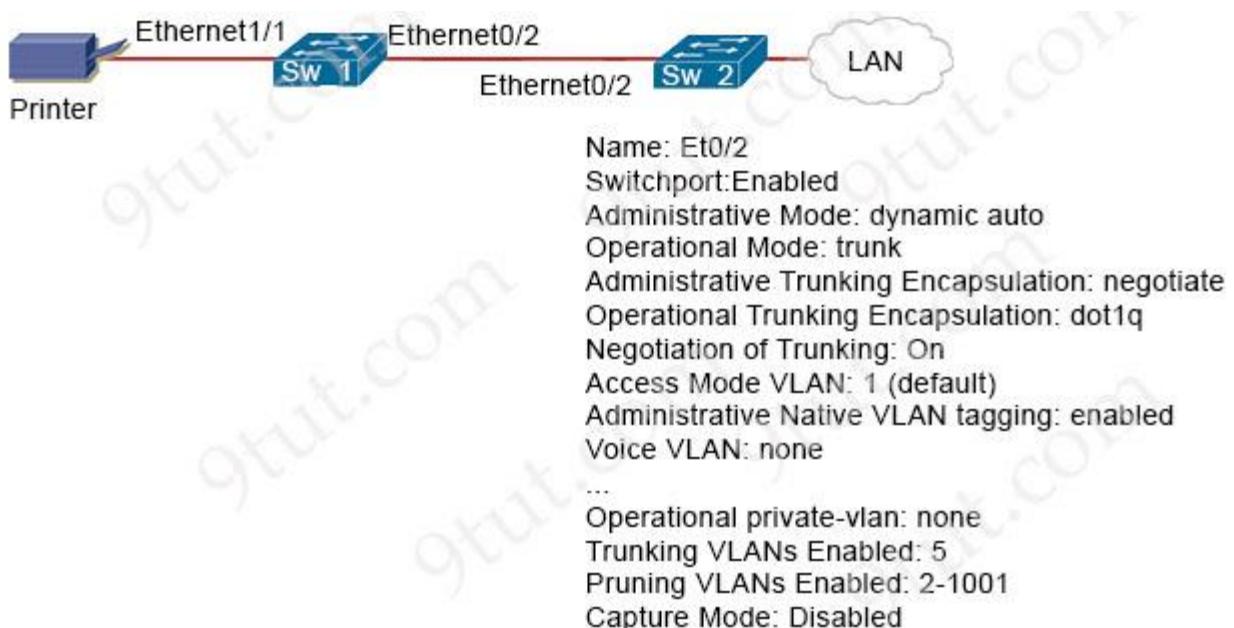
Which two configurations must be used to configure the new subnets and meet a requirement to use the first available address in each subnet for the router interfaces? (Choose two)

- A. interface vlan 4722  
ip address 10.70.133.17 255.255.255.192
- B. interface vlan 3002  
ip address 10.70.147.17 255.255.255.224
- C. interface vlan 1148  
ip address 10.70.148.1 255.255.254.0
- D. interface vlan 1234  
ip address 10.70.159.1 255.255.254.0
- E. interface vlan 155  
ip address 10.70.155.65 255.255.255.224

**Answer:** C E

### Question 49

Refer to the exhibit.



An administrator must connect SW\_1 and the printer to the network. SW\_2 requires DTP to be used for the connection to SW\_1. The printer is configured as an access port with VLAN 5. Which set of commands completes the connectivity?

- A. switchport mode trunk  
switchport trunk pruning vlan add 5
- B. switchport mode dynamic desirable

switchport trunk allowed vlan add 5  
C. switchport mode dynamic auto  
switchport private-vlan association host 5  
D. switchport mode dynamic auto  
switchport trunk encapsulation negotiate

**Answer:** B

### **Question 50**

Refer to the exhibit.

```
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 - ODR, P - periodic downloaded static route
```

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
- O 10.0.1.3/32 [110/100] via 192.168.0.40, 00:33:32, Serial0
- C 10.0.1.0/24 is directly connected, Serial0
- O 10.0.1.190/32 [110/5] via 192.168.0.35, 00:33:32, Serial0
- O 10.0.1.0/24 [110/10] via 192.168.0.4, 00:33:32, GigabitEthernet0/0
- D 10.0.1.0/28 [90/10] via 192.168.0.7, 00:33:32, GigabitEthernet0/0

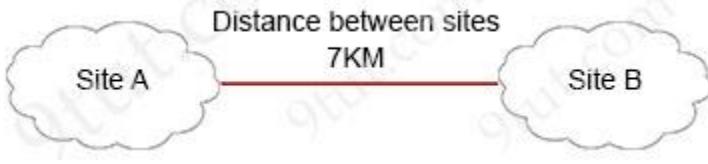
Traffic sourced from the loopback0 interface is trying to connect via ssh to the host at 10.0.1.15.  
What is the next hop to the destination address?

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

**Answer:** A

### **Question 51**

Refer to the exhibit.



```
SiteA#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
Hardware is BUILT-IN-EPA-8x10G, address is aabb.cc00.0100 (bia aabb.cc00.0100)
Description: Connection to SiteB
Internet address is 10.10.10.1/30
MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Full Duplex, 10000Mbps, link type is force-up, media type is SFP-SR
5 minute input rate 264797000 bits/sec, 26672 packets/sec
5 minute output rate 122464000 bits/sec, 15724 packets/sec
```

```
SiteB#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
Hardware is BUILT-IN-EPA-8x10G, address is 0000.0c00.750c (bia 0000.0c00.750c)
Description: Connection to SiteA
Internet address is 10.10.10.2/30
MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
5 minute input rate 123245000 bits/sec, 15343 packets/sec
5 minute output rate 265746000 bits/sec, 12453 packets/sec
```

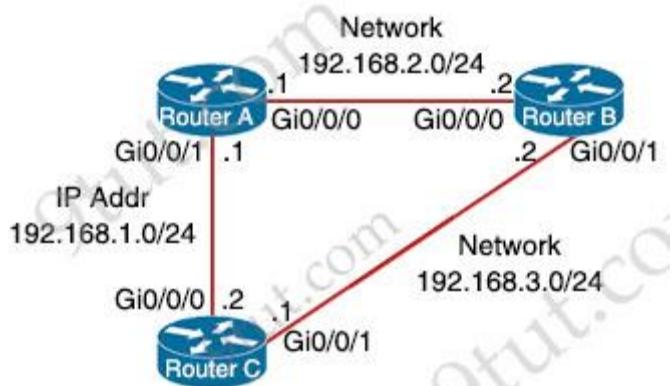
Shortly after SiteA was connected to SiteB over a new single-mode fiber path, users at SiteA report intermittent connectivity issues with applications hosted at SiteB. What is the cause of the intermittent connectivity issue?

- A. An incorrect type of transceiver has been inserted into a device on the link.
- B. The wrong cable type was used to make the connection.
- C. Heavy usage is causing high latency.
- D. Physical network errors are being transmitted between the two sites.

**Answer: A**

### Question 52

Refer to the exhibit.



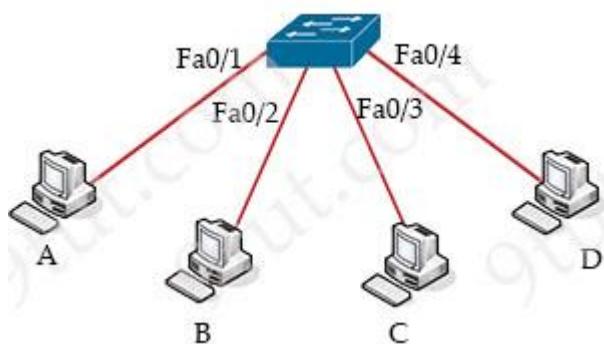
Which action must be taken to ensure that router A is elected as the DR for OSPF area 0?

- A. Configure the OSPF priority on router A with the lowest value between the three routers
- B. Configure the router A interfaces with the highest OSPF priority value within the area.
- C. Configure router A with a fixed OSPF router ID.
- D. Configure router B and router C as OSPF neighbors of router A.

**Answer: B**

### Question 53

Refer to the exhibit.



```
SwitchA#show mac-address table
```

Vlan	Mac Address	Type	Ports
2	000c.65dc.bb7b	DYNAMIC	Fa0/1
2	0010.11dc.3e91	DYNAMIC	Fa0/2
2	0041.48d7.c782	DYNAMIC	Fa0/3

```
SwitchA#
```

Host A sent a data frame destined for host D.

- What does the switch do when it receives the frame from host A?
- It shuts down the port Fa0/1 and places it in err-disable mode.
  - It experiences a broadcast storm.
  - It floods the frame out of all ports except port Fa0/1.
  - It drops the frame from the switch CAM table.

**Answer:** C

### Question 54

Refer to the exhibit.



An engineer has started to configure replacement switch SW1. To verify part of the configuration, the engineer issued the commands as shown and noticed that the entry for PC2 is missing. Which change must be applied to SW1 so that PC1 and PC2 communicate normally?

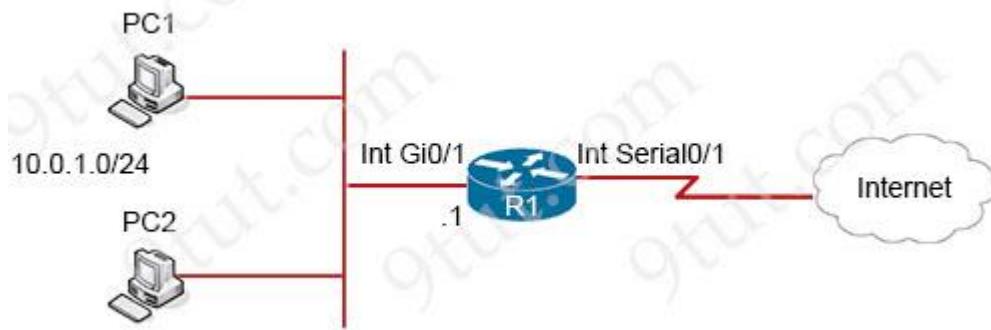
- SW1(config)#interface fa0/2  
SW1(config-if)#no switchport access vlan 2  
SW1(config-if)#no switchport trunk allowed vlan 3  
SW1 (config-if)#switchport trunk allowed vlan 2
- SW1(config)#interface fa0/1  
SW1(config-if)#no switchport access vlan 2  
SW1(config-if)#switchport trunk native vlan 2  
SW1(config-if)#switchport trunk allowed vlan 3
- SW1(config-if)#interface fa0/2  
SW1(config-if)#no switchport mode trunk  
SW1(config-if)#no switchport trunk allowed vlan 3  
SW1(config-if)#switchport mode access

```
D. SW1(config)#interface fa0/1  
SW1(config-if)#no switchport access vlan 2  
SW1(config-if)#switchport access vlan 3  
SW1(config-if)#switchport trunk allowed vlan 2
```

**Answer:** C

### Question 55

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. username cisco password 0 cisco
- C. login console
- D. ip ssh pubkey-chain
- E. crypto key generate rsa

**Answer:** D E

### Question 56

Which two spanning-tree states are bypassed on an interface running PortFast? (Choose two)

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

**Answer:** D E

### **Question 57**

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 is disabled.
- D. Multiple untagged interfaces on the same port must be supported.

**Answer:** B

### **Question 58**

What is a requirement for nonoverlapping WI-FI channels?

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

**Answer:** C

### **Question 59**

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 engineer2
- \* It must use the strongest password configurable.

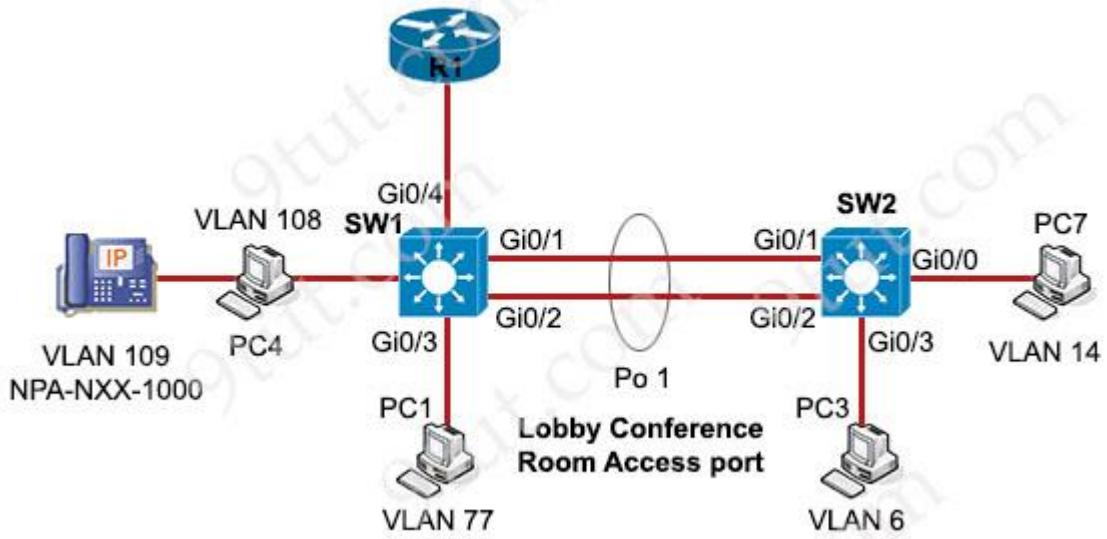
Which command must the engineer configure on the router?

- A. R1(config)# username engineer2 algorithm-type scrypt secret test2021
- B. R1(config)# username engineer2 secret 5 password \$1\$bUu\$kZbBS1Pyh4QzwXyZ
- C. R1(config)# username engineer2 privilege 1 password 7 test2021
- D. R1(config)# username engineer2 secret 4 \$1\$Ju\$kZbBS1Fyh4QxwXyZ

**Answer:** A

### **Question 60**

Refer to the exhibit.



Which configuration enables an EtherChannel to form dynamically between SW1 and SW2 by using an industry-standard protocol, and to support full IP connectivity between all PCs?

Option A	Option B
<pre>SW1# interface Gi0/1 switchport switchport mode trunk channel-group 1 mode on ! interface Gi0/2 switchport switchport mode trunk channel-group 1 mode auto</pre>	<pre>SW1# interface Gi0/1 switchport switchport mode trunk channel-group 1 mode auto ! interface Gi0/2 switchport switchport mode access channel-group 1 mode active</pre>
<pre>SW2# interface Gi0/1 switchport switchport mode trunk channel-group 1 mode auto ! interface Gi0/2 switchport switchport mode trunk channel-group 1 mode on interface port-channel 1 switchport switchport mode trunk</pre>	<pre>SW2# interface gi0/1 switchport switchport mode access channel-group 1 mode desirable ! interface Gi0/2 switchport switchport mode access channel-group 1 mode desirable</pre>
Option C	Option D
<pre>SW1# interface Gi0/1 switchport</pre>	—missing config—

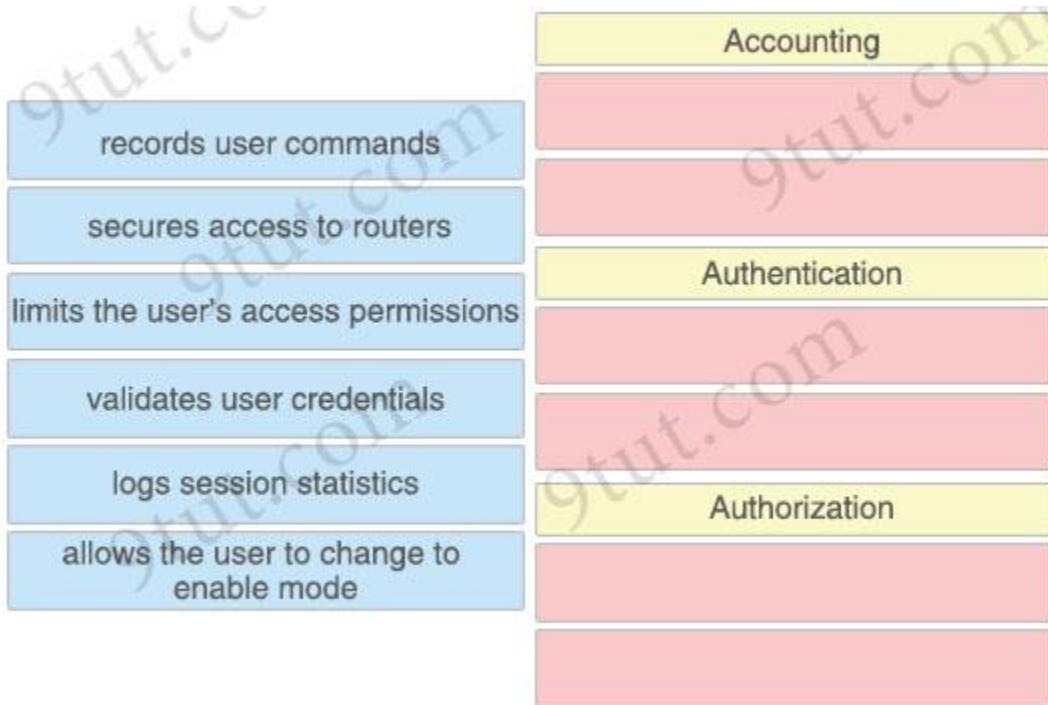
```
switchport mode trunk  
channel-group 1 mode active  
!  
interface Gi0/2  
switchport  
switchport mode trunk  
channel-group 1 mode active  
  
SW2#  
interface Gi0/1  
switchport  
switchport mode trunk  
channel-group 1 mode passive  
!  
interface Gi0/2  
switchport  
switchport mode trunk  
channel-group 1 mode passive
```

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

**Answer:** C

**Question 61**

Drag and drop the descriptions or AAA services from the left onto the corresponding services on the right.



#### **Answer:**

##### **Accounting**

- + records user commands
- + logs session statistics

##### **Authentication**

- + secures access to routers
- + validates user credentials

##### **Authorization**

- + limits the user's access permissions
- + allows the user to change to enable mode

#### **Question 62**

Drag and drop the TCP or UDP details from the left onto their corresponding protocols on the right.

transmitted based on data contained in the packet without the need for a data channel	TCP
used to reliably share files between devices	
appropriate for streaming operations with minimal latency	UDP
requires the client and the server to establish a connection before sending the packet	

### Answer:

#### TCP

- + used to reliably share files between devices
- + requires the client and the server to establish a connection before sending the packet

#### UDP

- + transmitted based on data contained in the packet without the need for a data channel
- + appropriate for streaming operations with minimal latency

### Question 63

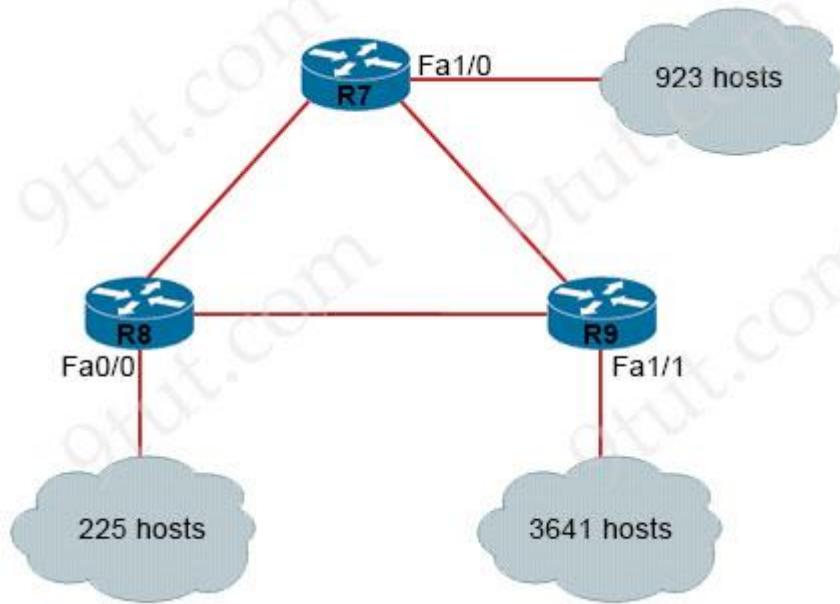
What is the function of the controller in a software-defined network?

- A. forwarding packets
- B. making routing decisions
- C. multicast replication at the hardware level
- D. fragmenting and reassembling packets

### Answer: B

### Question 64

Refer to the exhibit.



An IP subnet must be configured on each router that provides enough addresses for the number of assigned hosts and anticipates no more than 10% growth for new hosts. Which configuration script must be used?

<b>Option A</b>	<b>Option B</b>
R7# configure terminal interface Fa1/0 ip address 10.1.56.1 255.255.240.0 no shutdown	R7# configure terminal interface Fa1/0 ip address 10.1.56.1 255.255.248.0 no shutdown
R8# configure terminal interface Fa0/0 ip address 10.9.32.1 255.255.224.0 no shutdown	R8# configure terminal interface Fa0/0 ip address 10.9.32.1 255.255.254.0 no shutdown
R9# configure terminal interface Fa1/1 ip address 10.23.96.1 255.255.192.0 no shutdown	R9# configure terminal interface Fa1/1 ip address 10.23.96.1 255.255.248.0 no shutdown
<b>Option C</b>	<b>Option D</b>
R7# configure terminal interface Fa1/0 ip address 10.1.56.1 255.255.252.0 no shutdown	R7# configure terminal interface Fa1/0 ip address 10.1.56.1 255.255.192.0 no shutdown
	R8#

R8#	configure terminal
configure terminal	interface Fa0/0
interface Fa0/0	ip address 10.9.32.1 255.255.255.0
ip address 10.9.32.1 255.255.255.0	no shutdown
no shutdown	R9#
R9#	configure terminal
configure terminal	interface Fa1/1
interface Fa1/1	ip address 10.23.96.1 255.255.128.0
ip address 10.23.96.1 255.255.128.0	no shutdown
no shutdown	

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

**Answer:** C

### Question 65

Refer to the exhibit.

```
R1#show ip route | begin gateway
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, 00:00:15, Serial0/0/1
D      192.168.2.0/24 [90/84437] 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, 00:00:25, 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, Serial0/0/1
L      207.165.200.253/32 is directly connected, Serial0/0/1
```

Which network prefix was learned via EIGRP?

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

**Answer:** C

**Question 66**

Refer to the exhibit.



```
SW1#show run interface fastEthernet0/1
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 100,200,300
channel-group 1 mode on
```

```
SW1#show run interface fastEthernet0/2
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 100,200,300
channel-group 1 mode on
```

```
SW2#show run interface fastEthernet 0/1
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 100,200,300
channel-group 1 mode active
```

```
SW2#show run interface fastEthernet 0/2
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk allowed vlan 100,200,300
channel-group 1 mode active
```

An engineer built a new L2 LACP EtherChannel between SW1 and SW2 and executed these **show** commands to verify the work. Which additional task allows the two switches to establish an LACP port channel?

- A. Change the channel-group mode on SW1 to desirable.
- B. Change the channel-group mode on SW1 to active or passive.
- C. Change the channel-group mode on SW2 to auto.
- D. Configure the interface port-channel 1 command on both switches.

**Answer:** B

**Question 67**

Refer to the exhibit.

```
Switch2#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 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?

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

**Answer:** B

### Question 68

Refer to the exhibit.

```
R1#show run
!
router ospf 1
auto-cost reference-bandwidth 100000
!
interface GigabitEthernet0/0
bandwidth 10000000
!
interface GigabitEthernet0/1
bandwidth 100000000
!
interface GigabitEthernet0/2
ip ospf cost 100
!
interface GigabitEthernet0/3
ip ospf cost 1000
```

Router R1 resides in OSPF Area 0. After updating the R1 configuration to influence the paths that it will use to direct traffic, an engineer verified that each of the four Gigabit interfaces has the same route to 10.10.0.0/16. Which interface will R1 choose to send traffic to reach the route?

- A. GigabitEthernet0/0
- B. GigabitEthernet0/1
- C. GigabitEthernet0/2
- D. GigabitEthernet0/3

**Answer: B**

**Question 69**

An engineer is configuring remote access to a router from IP subnet 10.139.58.0/28. The domain name, crypto keys, and SSH have been configured. Which configuration enables the traffic on the destination router?

- A. interface FastEthernet0/0  
ip address 10.122.49.1 255.255.255.252  
ip access-group 10 in  
!  
ip access-list standard 10  
permit udp 10.139.58.0 0.0.0.7 host 10.122.49.1 eq 22
- B. line vty 0 15  
access-class 120 in  
!  
ip access-list extended 120  
permit tcp 10.139.58.0 0.0.0.15 any eq 22
- C. line vty 0 15  
access-group 120 in  
!  
ip access-list extended 120  
permit tcp 10.139.58.0 0.0.0.15 any eq 22
- D. interface FastEthernet0/0  
ip address 10.122.49.1 255.255.255.252  
ip access-group 110 in  
!  
ip access-list standard 110  
permit tcp 10.139.58.0 0.0.0.15 eq 22 host 10.122.49.1

**Answer: B**

**Question 70**

Which protocol is used for secure remote CLI access?

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

**Answer:** C

**Question 71**

What is a characteristic of private IPv4 addressing?

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

**Answer:** C

**Question 72**

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

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

**Answer:** D

**Question 73**

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

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

**Answer: C**

**Question 74**

Refer to the exhibit.



```
interface GigabitEthernet0/0
 ip address 172.16.0.5 255.255.255
 duplex auto
 speed auto
!
interface GigabitEthernet0/1
 ip address 209.165.202.130 255.255.255.224
 duplex auto
 speed auto
!
ip nat inside source list 1 interface GigabitEthernet0/1 overload
!
access-list 1 permit 172.16.0.1
access-list 1 permit 172.16.0.2
```

How should the configuration be updated to allow PC1 and PC2 access to the Internet?

- A. Modify the configured number of the second access list
- B. Remove the **overload** keyword from the **ip nat inside source** command
- C. Add either the **ip nat {inside|outside}** command under both interfaces
- D. Change the **ip nat inside source** command to use interface GtgbabitEthernet0/0

**Answer: C**

**Question 75**

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

```

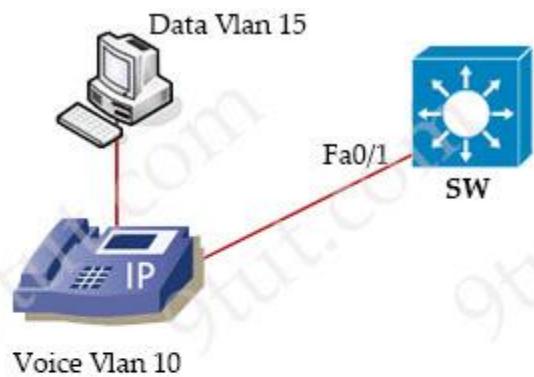
ip address 192.160.1.1 255.255.255.252
ip ospf network broadcast
B. router ospf 1
network 192.168.1.1 0.0.0.0 area 0
interface e1/1
ip address 192.168.1.1 255.255.255.252
ip ospf cost 0
C. router ospf 1
network 192.168.1.1 0.0.0.0 area 0
hello interval 15
interface e1/1
ip address 192.168.1.1 255.255.255.252
D. router ospf 1
network 192.168.1.1 0.0.0.0 area 0
interface e1/1
ip address 192.168.1.1 255.55.255.252
ip ospf network point-to-point

```

**Answer:** D

### Question 76

Refer to the exhibit.



```

SW#show run
Building configuration...
!
interface FastEthernet0/1
switchport access vlan 15
!
end

```

All VLANs are present in the VLAN database. Which command sequence must be applied to complete the configuration?

- A. interface FastEthernet0/1  
switchport trunk native vlan 10  
switchport trunk allowed vlan 10,15

- B. interface FastEthernet0/1  
switchport mode trunk  
switchport trunk allowed vlan 10,15
- C. interface FastEthernet0/1  
switchport trunk allowed vlan add 10  
vlan 10  
private-vlan isolated
- D. interface FastEthernet0/1  
switchport mode access  
switchport voice vlan 10

**Answer:** D

### Question 77

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 priv4t3p4ss.

Which command sequence must the engineer configure?

Option A	Option B
<pre>enable secret priv4t3p4ss ! line con 0 password p4ssw0rd1 login ! line vty 0 15 password s3cr3t2 login</pre>	<pre>enable secret privilege 15 priv4t3p4ss ! line con 0 password p4ssw0rd1 login ! line vty 0 15 password s3cr3t2 login</pre>
Option C	Option D
<pre>enable secret priv413p4ss ! line con 0 password login p4ssw0rd1 ! line vty 0 15 password login s3cr3t2 login</pre>	<pre>enable secret priv4t3p4ss ! line con 0 password p4ssw0rd1 ! line vty 0 15 password s3cr3t2</pre>

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

**Answer: A**

**Question 78**

Refer to the exhibit.

```
EIGRP 10.10.10.0/24[90/1441] via F0/10
EIGRP 10.10.10.0/24[90/144] via F0/11
EIGRP 10.10.10.0/24[90/1441] via F0/12
OSPF 10.10.10.0/24[110/20] via F0/13
OSPF 10.10.10.0/24[110/30] via F0/14
```

Packets received by the router from BGP enter via a serial interface at 209.165.201.10. Each route is present within the routing table. Which interface is used to forward traffic with a destination IP of 10.10.10.24?

- A. F0/10
- B. F0/11
- C. F0/12
- D. F0/13

**Answer: B**

**Question 79**

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

**Answer: D**

**Question 80**

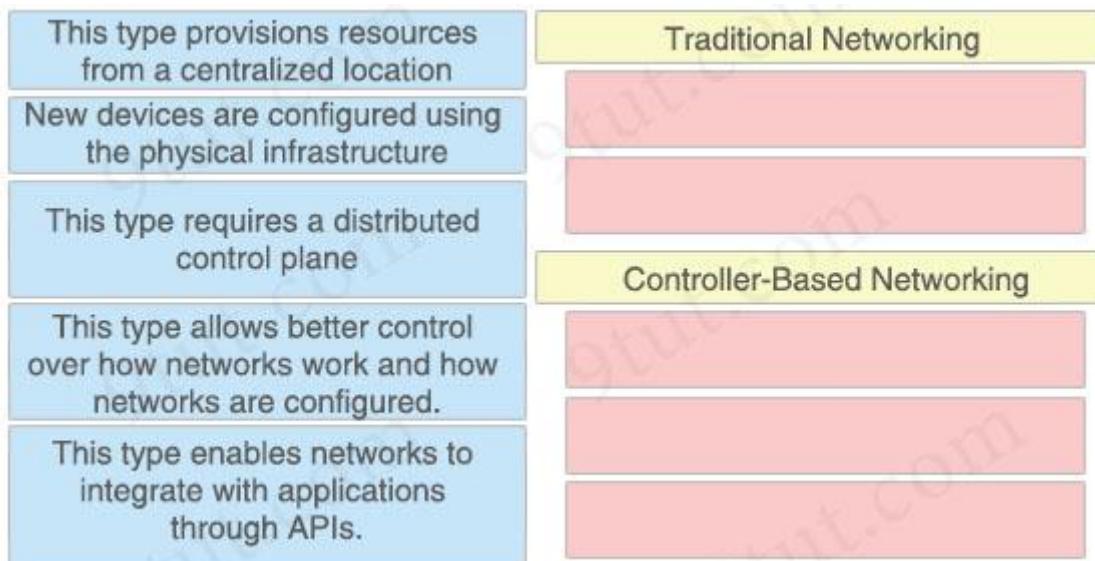
What is a function of an endpoint on a network?

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

**Answer: B**

**Question 81**

Drag and drop the statements about networking from the left onto the corresponding networking types on the right.



**Answer:**

**Traditional Networking**

- + New devices are configured using the physical infrastructure
- + This type requires a distributed control plane

**Controller-Based Networking**

- + This type provisions resources from a centralized location
- + This type allows better control over how networks work and how networks are configured
- + This type enables networks to integrate with applications through APIs.

**Question 82**

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

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

**Answer: A**

## CCNAv7 – New Questions 3

### Question 1

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

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

**Answer: D**

### Question 2

What is a characteristic of cloud-based network topology?

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

**Answer: B**

### Question 3

A network analyst is tasked with configuring 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

**Answer: D**

### Question 4

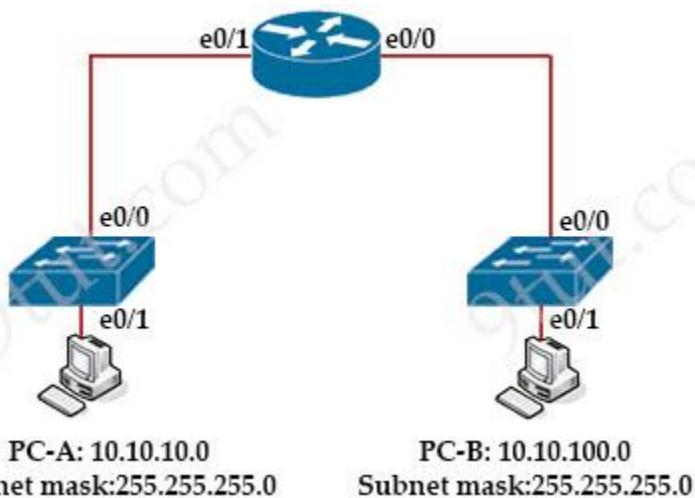
Which HTTP status code is returned after a successful REST API request?

- A. 200
- B. 301
- C. 404
- D. 500

**Answer:** A

### Question 5

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. firewall
- C. Load balancer
- D. Router

**Answer:** D

### Question 6

Refer to the exhibit.

```
Router1#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, 00:08:34
            10.0.0.0/8 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, 00:09:25, GigabitEthernet0/0
```

C 10.10.12.0/30 is directly connected, GigabitEthernet0/1

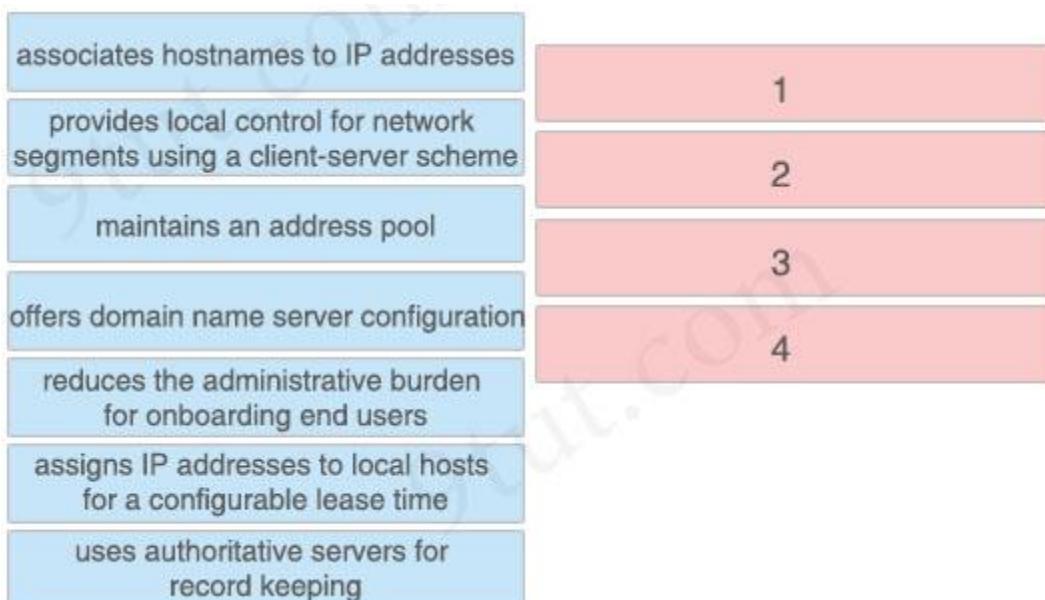
Which action is taken by the router when a packet is sourced from 10.10.10.2 and destined for 10.10.10.16?

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

**Answer:** A

### **Question 7**

Drag and drop the functions of DHCP from the left onto any of the positions on the right. Not all functions are used.



**Answer:**

- 1 – maintains an address pool
- 2 – offers domain name server configuration
- 3 – reduces the administrative burden for onboarding end users
- 4 – assigns IP addresses to local hosts for a configurable lease time

### **Question 8**

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

- A. It is a pair of core routers that maintain all routing decisions for a campus
- 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 serves as the centralized management point of an SDN architecture

**Answer:** D

### Question 9

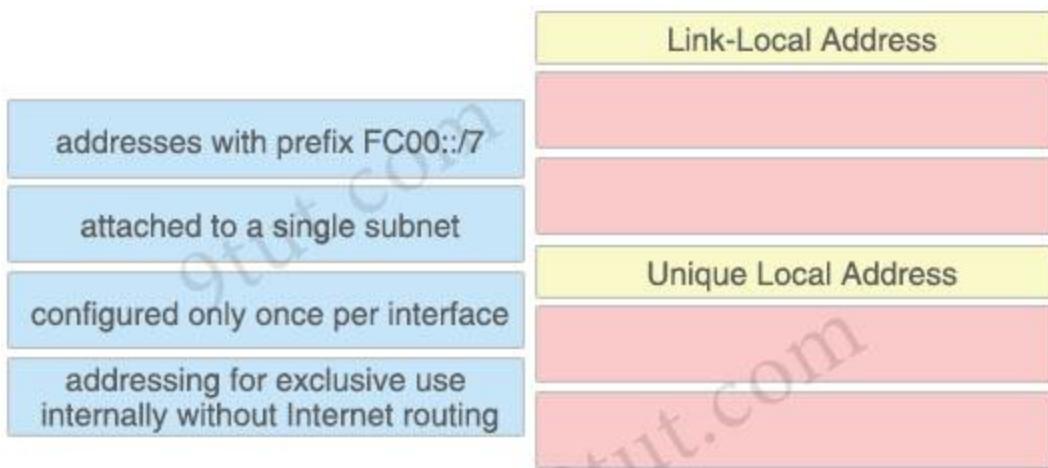
When a switch receives a frame for a known destination MAC address, how is the frame handled?

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

**Answer:** D

### Question 10

Drag and drop the IPv6 address type characteristics from the left to the right.



**Answer:**

#### **Link-Local Address:**

- + attached to a single subnet
- + configured only once per interface

**Unique Local Address:**

- + addresses with prefix FC00::/7
- + addressing for exclusive use internally without Internet routing

**Question 11**

Why was the RFC 1918 address space defined?

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

**Answer:** D

**Question 12**

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

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

**Answer:** D

**Question 13**

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

**Answer:** B

**Question 14**

An engineer is configuring an encrypted password for the enable command on a router where the local user database has already been configured. Drag and drop the configuration commands from the left into the correct sequence on the right. Not all commands are used.

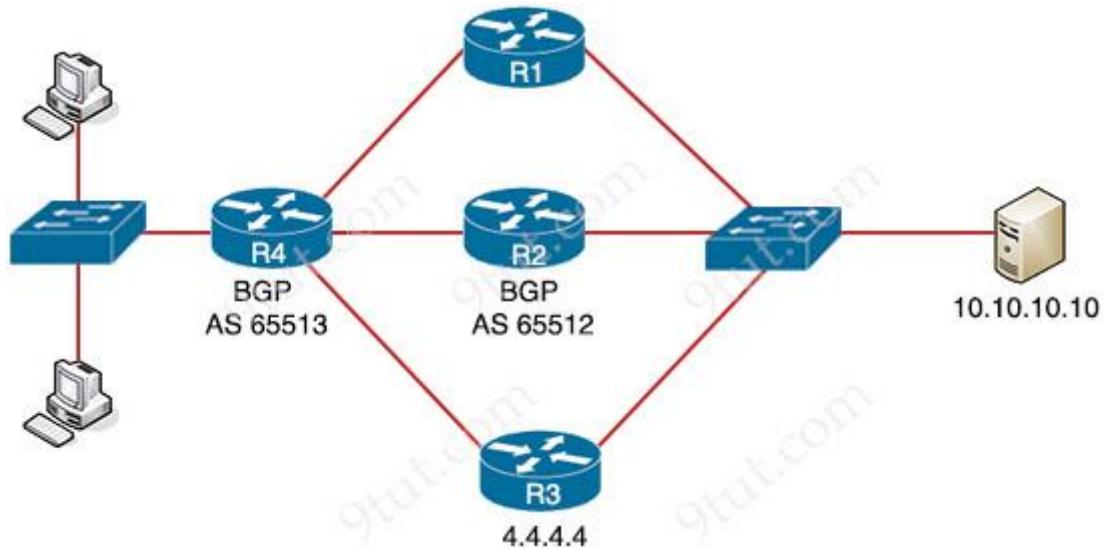
exit	first
configure terminal	second
enable secret \$fkg!@34i4	third
enable	fourth
service password-encryption	
line vty 0 4	

### Answer:

- + first: enable
- + second: configure terminal
- + third: service password-encryption
- + fourth: exit

### Question 15

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

**Answer: A**

**Question 16**

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

- A. It summarizes daily and weekly CPU usage for servers and workstations in the network.
- 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 provides a summary of the top 10 global issues.

**Answer: D**

**Question 17**

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

- A. TFTP
- B. FTP
- C. DTP
- D. SMTP

**Answer: B**

**Question 18**

Where is the interface between the control plane and data plane within the software-defined architecture?

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

**Answer: D**

**Question 19**

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 encapsulates the original packet and then includes a tag that identifies the source router MAC address and transmit transparently to the destination
- D. 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

**Answer:** D

### Question 20

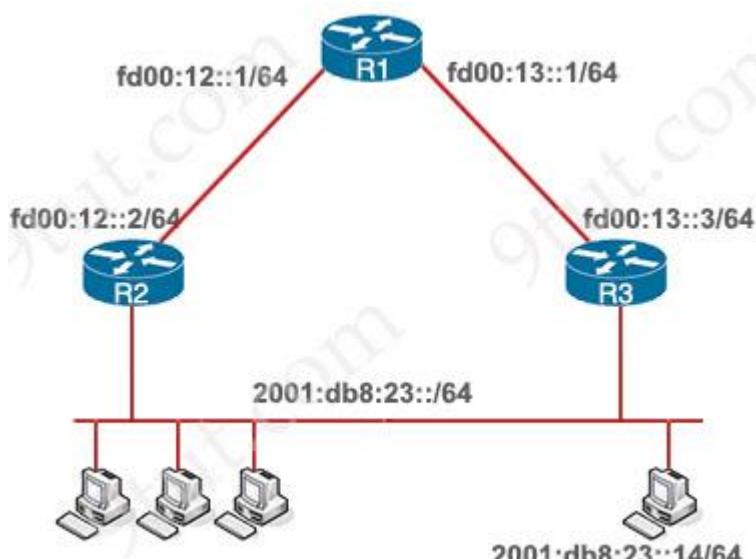
When a site-to-site VPN is configured, which IPsec mode provides encapsulation and encryption of the entire original IP packet?

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

**Answer:** C

### Question 21

Refer to the exhibit.



Which two commands, when configured on router R1, fulfill these requirements? (Choose two)

- Packets toward the entire network 2001:db8:23::/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::14/64 fd00:12::2 200
- E. ipv6 route 2001:db8:23::/64 fd00:12::2

**Answer:** B E

### **Question 22**

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

- A. determines which packets are allowed to cross from unsecured to secured networks
- B. processes unauthorized packets and allows passage to less secure segments of the network
- C. forwards packets based on stateless packet inspection
- D. explicitly denies all packets from entering an administrative domain

**Answer:** A

### **Question 23**

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

**Answer:** C

### **Question 24**

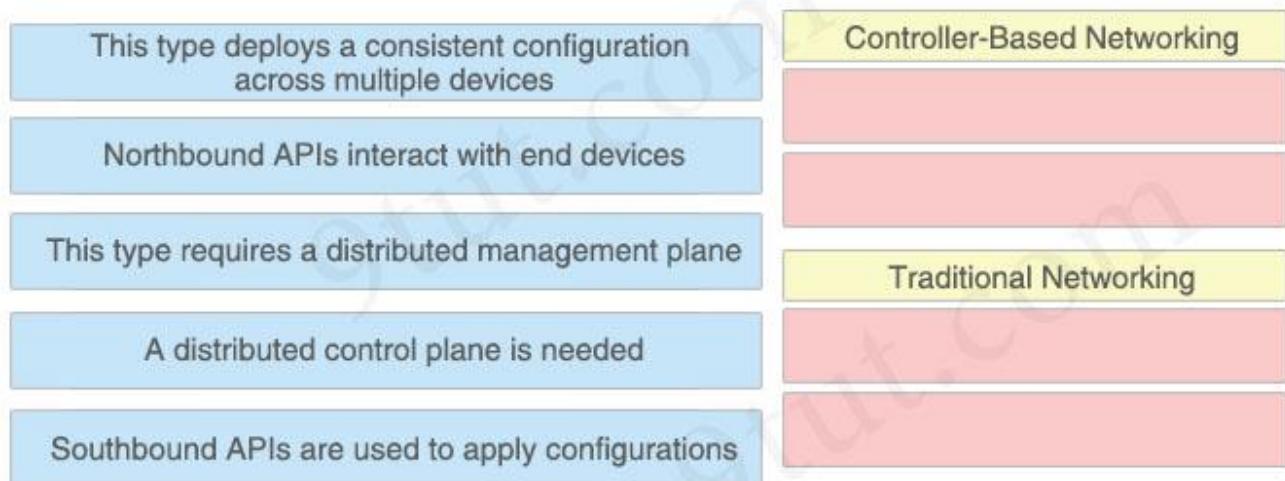
How are VLAN hopping attacks mitigated?

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

**Answer:** A

## Question 25

Drag and drop the statement about networking from the left into the corresponding networking types on the right. Not all statements are used.



## Answer:

### Controller-Based Networking:

- + This type deploys a consistent configuration across multiple devices
- + Southbound APIs are used to apply configurations

### Traditional Networking:

- + This type requires a distributed management plane
- + A distributed control plane is needed

## Question 26

Refer to the exhibit.

```
R1#show ip route
--output omitted--

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

C      172.16.1.128/25 is directly connected, GigabitEthernet1/1/0
C      192.168.12.0/24 is directly connected, FastEthernet0/0
C      192.168.13.0/24 is directly connected, FastEthernet0/1
C      192.168.14.0/24 is directly connected, FastEthernet1/0
C      172.16.16.1 is directly connected, Loopback1
      192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O      192.168.10.0/24 [110/2] via 192.168.14.4, 00:03:01, FastEthernet1/0
O      192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:11, FastEthernet0/1
O      192.168.0.0/16 [110/2] via 192.168.15.5, 00:05:11, FastEthernet1/1
D      192.168.10.1/32 [90/52778] via 192.168.12.2, 00:05:11, FastEthernet0/0
O*E2   0.0.0.0/0 [110/1] via 192.168.14.4, 00:05:11, FastEthernet1/0
```

If R1 receives a packet destined to 172.16.1.1, to which IP address does it send the packet?

- A. 192.168.12.2
- B. 192.168.13.3
- C. 192.168.14.4
- D. 192.168.15.5

**Answer:** C

### **Question 27**

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

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

**Answer:** A E

### **Question 28**

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

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

**Answer:** C

### **Question 29**

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

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

**Answer:** A

**Question 30**

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

**Answer:** A C

**Question 31**

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

**Answer:** A

**Question 32**

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

**Answer:** C

**Question 33**

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

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

**Answer:** A C

**Question 34**

Which QoS tool can you use to optimize voice traffic on a network that is primarily intended for data traffic?

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

**Answer:** C

**Question 35**

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

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

**Answer:** D

**Question 36**

Refer to the exhibit.

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

Which two prefixes are included in this routing table entry? (Choose two)

- 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

**Answer:** A B

**Question 37**

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

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

**Answer:** C E

**Question 38**

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

- A. UDP sets up a connection between both devices before transmitting data. TCP uses the three-way handshake to transmit data with a reliable connection.
- B. 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.
- 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.

**Answer:** D

**Question 39**

What are network endpoints?

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

**Answer: A**

**Question 40**

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

**Answer: D**

**Question 41**

Drag and drop the DNS lookup components from the left onto the functions on the right.

domain	service that maps hostname to IP addresses
cache	local database of address mappings that improves name resolution performance
name resolver	in response to client requests, queries a name server for IP address information
DNS	component of a URL that indicates the location or organization type
no ip domain-lookup	disables DNS services on a Cisco device

**Answer:**

- + service that maps hostname to IP addresses: DNS
- + local database of address mappings that improves name resolution performance: cache
- + in response to client requests, queries a name server for IP address information: name resolver
- + component of a URL that indicates the location or organization type: domain
- + disables DNS services on a Cisco device: no ip domain-lookup

**Question 42**

What must be considered when using 802.11a?

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

**Answer:** D

### **Question 43**

This question is duplicated so we removed it.

### **Question 44**

An engineer configures interface Gi1/0 on the company PE router to connect to an ISP.

Neighbor discovery is disabled.

```
interface Gi1/0
description HQ_DC3392-9383
duplex full
speed 100
negotiation auto
lldp transmit
lldp receive
```

Which action is necessary to complete the configuration if the ISP uses third-party network devices?

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

**Answer:** A

### **Question 45**

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

**Answer:** C

### **Question 46**

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.

**Answer:** A D

### **Question 47**

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

- A. Enabled interfaces are automatically placed in listening state
- B. Enabled interfaces wait 50 seconds before they move to the forwarding state
- 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 come up and move to the forwarding state immediately

**Answer:** C E

### **Question 48**

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

**Answer:** B

### **Question 49**

Which function is performed by DHCP snooping?

- A. rate-limits certain traffic
- B. listens to multicast traffic for packet forwarding

- C. provides DDoS mitigation
- D. propagates VLAN information between switches

**Answer:** A

**Question 50**

Which plane is centralized by an SON controller?

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

**Answer:** C

**Question 51**

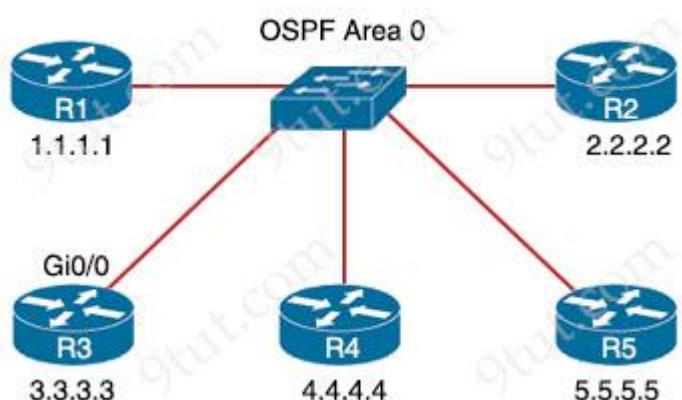
What are two similarities between UTP Cat 5e and Cat 6a cabling? (Choose two)

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

**Answer:** A D

**Question 52**

Refer to the exhibit.



```
R3#show ip ospf neighbor
```

Neighbor	ID	Pri	State	Dead Time	Address	Interface
1.1.1.1		1	2WAY/DROTHER	00:00:35	172.16.10.1	GigabitEthernet0/0
2.2.2.2		1	2WAY/DROTHER	00:00:35	172.16.10.2	GigabitEthernet0/0
4.4.4.4		1	FULL/BDR	00:00:35	172.16.10.4	GigabitEthernet0/0
5.5.5.5		1	FULL/DR	00:00:35	172.16.10.5	GigabitEthernet0/0

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?

Option A	Option B
R4(config)#interface gi0/0 R4(config-if)#ip ospf priority 20	R2(config)#interface gi0/0 R2(config-if)#ip ospf priority 259
R5(config)#interface gi0/0 R5(config-if)#ip ospf priority 10	R3(config)#interface gi0/0 R3(config-if)#ip ospf priority 256
Option C	Option D
R3(config)#interface gi0/0 R3(config-if)#ip ospf priority 255	R5(config)#interface gi0/0 R5(config-if)#ip ospf priority 120
R2(config)#interface gi0/0 R2(config-if)#ip ospf priority 240	R4(config)#interface gi0/0 R4(config-if)#ip ospf priority 110

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

**Answer:** C

### Question 53

Refer to the exhibit.

```
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 - ODR, P - 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
O IA    192.168.10.32/28 [110/193] via 192.168.30.10, 00:11:34, Serial0/0.1
O IA    192.168.10.0/27 [110/192] via 192.168.30.10, 00:11:34, Serial0/0.1
      192.168.20.0/30 is subnetted, 1 subnets
O IA    192.168.20.0 [110/128] via 192.168.30.10, 00:11:34, Serial0/0.1
      192.168.50.0/32 is subnetted, 1 subnets
C      192.168.50.1 is directly connected, Loopback0
O*IA 0.0.0.0/0 [110/84] via 192.168.30.10, 00:11:21, Serial0/0.1

```

What is the metric of the route to the 192.168.10.33/28 subnet?

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

**Answer:** E

#### Question 54

Drag and drop the AAA terms from the left onto the description on the right.

authentication	tracks activity
accounting	verifies access rights
CoA	updates session attributes
authorization	verifies identity

**Answer:**

- + tracks activity: accounting
- + verifies access rights: authorization
- + updates session attributes: CoA
- + verifies identity: authentication

#### Question 55

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

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

**Answer:** D

## CCNAv7 – New Questions 2

### Question 1

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

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

**Answer:** A E

### Question 2

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?

A.  
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate ec keysizze 1024

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

C.  
R1#enable  
R1#configure terminal  
R1(config)#ip domain-name cisco.com  
R1(config)#crypto key generate ec keysizze 2048

D.  
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

**Answer:** B

### **Question 3**

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

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

**Answer:** A

### **Question 4**

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

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

**Answer:** C

### **Question 5**

Which networking function occurs on the data plane?

- A. facilitates spanning-tree elections
- B. processing inbound SSH management traffic

- C. forwarding remote client/server traffic
- D. sending and receiving OSPF Hello packets

**Answer:** C

**Question 6**

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

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

**Answer:** D

**Question 7**

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

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

**Answer:** A

**Question 8**

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

**Answer:** B

**Question 9**

What is the benefit of using FHRP?

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

**Answer:** D

**Question 10**

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

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

**Answer:** C

**Question 11**

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

**Answer:** A

**Question 12**

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

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

**Answer: B**

**Question 13**

When deploying syslog, which severity level logs informational message?

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

**Answer: D**

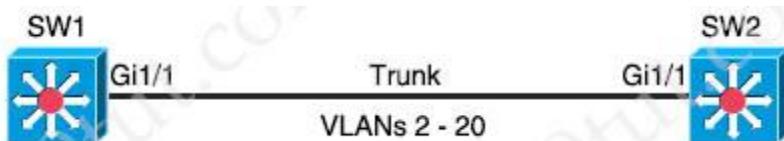
Syslog levels are listed below

Level	Keyword	Description
0	emergencies	System is unusable
1	alerts	Immediate action is needed
2	critical	Critical conditions exist
3	errors	Error conditions exist
4	warnings	Warning conditions exist
5	notification	Normal, but significant, conditions exist
6	informational	Informational messages
7	debugging	Debugging messages

The highest level is level 0 (emergencies). The lowest level is level 7. By default, the router will send informational messages (level 6). That means it will send all the syslog messages from level 0 to 6.

**Question 14**

Refer to the exhibit.



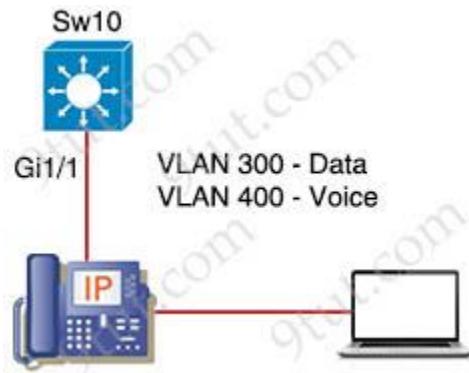
Which command must be executed for Gi1/1 on SW1 to become a trunk port if Gi1/1 on SW2 is configured in desirable or trunk mode?

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

**Answer:** D

### Question 15

Refer to the exhibit.



An engineer must configure GigabitEthernet1/1 to accommodate voice and data traffic. Which configuration accomplishes this task?

<b>Option A</b>	<b>Option B</b>
interface gigabitethernet1/1 switchport mode access switchport access vlan 300 switchport voice vlan 400	interface gigabitethernet1/1 switchport mode access switchport access vlan 400 switchport voice vlan 300
<b>Option C</b>	<b>Option D</b>
interface gigabitethernet1/1 switchport mode trunk switchport access vlan 300 switchport voice vlan 400	interface gigabitethernet1/1 switchport mode trunk switchport trunk vlan 300 switchport trunk vlan 400

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

**Answer:** A

## **Question 16**

What describes the operation of virtual machines?

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

**Answer: A**

## **Question 17**

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

**Answer: A**

## **Question 18**

Refer to the exhibit.

```
SiteA#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
  Hardware is BUILT-IN-EPA-8x10G, address is aabb.cc00.0100 (bia aabb.cc00.0100)
  Description: Connection to SiteB
  Internet address is 10.10.10.1/30
  MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
    reliability 166/255, txload 1/255, rxload 1/255
  Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
  5 minute input rate 265746000 bits/sec, 24343 packets/sec
  5 minute output rate 123245000 bits/sec, 12453 packets/sec

SiteB#show interface TenGigabitEthernet0/1/0
TenGigabitEthernet0/1/0 is up, line protocol is up
  Hardware is BUILT-IN-EPA-8x10G, address is 0000.0c00.750c (bia 0000.0c00.750c)
  Description: Connection to SiteA
  Internet address is 10.10.10.2/30
  MTU 8146 bytes, BW 10000000 Kbit/sec, DLY 10 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Full Duplex, 10000Mbps, link type is force-up, media type is SFP-LR
  5 minute input rate 123245000 bits/sec, 15343 packets/sec
  5 minute output rate 265746000 bits/sec, 12453 packets/sec
```

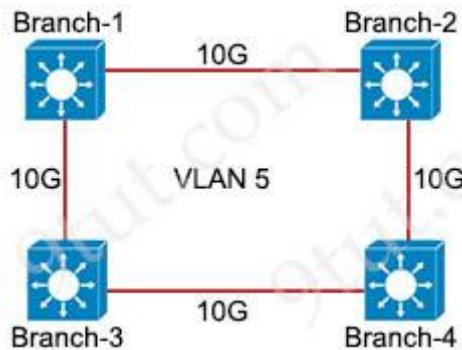
Shortly after SiteA was connected to SiteB over a new single-mode fiber path, users at SiteA report intermittent connectivity issues with applications hosted at SiteB. What is the cause of the intermittent connectivity issue?

- A. Interface errors are incrementing
- B. 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

**Answer:** A

### Question 19

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

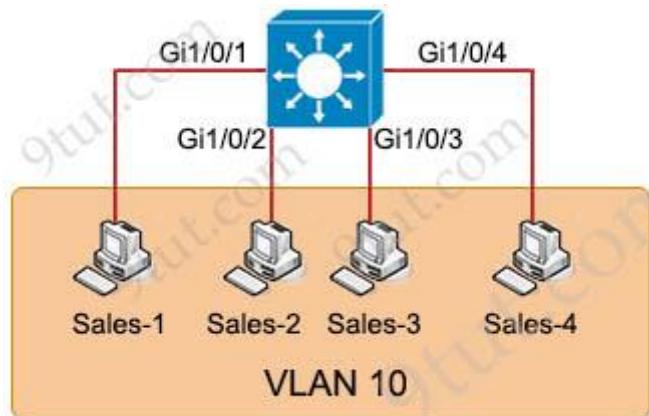
Which switch becomes the permanent root bridge for VLAN 5?

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

**Answer:** C

### Question 20

Refer to the exhibit.



```

Sales-SW#show mac-address-table
Mac Address Table
-----
VLAN  MAC Address      Type      Ports
10    000c.8590.bb7d    DYNAMIC   Gi1/0/1
10    3910.3456.9d3d    DYNAMIC   Gi1/0/2
10    00d0.d323.d343    DYNAMIC   Gi1/0/3
Sales-SW#

```

The entire contents of the MAC address table are shown. Sales-4 sends a data frame to Sales-1. What does the switch do as it receives the frame from Sales-4?

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

**Answer:** B

### Question 21

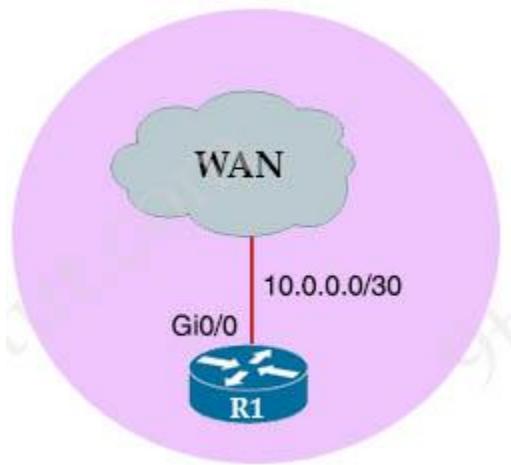
Which technology allows for multiple operating systems to be run on a single host computer?

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

**Answer:** D

### Question 22

Refer to the exhibit.



An administrator must turn off the Cisco Discovery Protocol on the port configured with 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 run
- D. interface gi0/0  
no cdp advertise-v2

**Answer:** C

### Question 23

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

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

**Answer:** C E

### Question 24

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. Network communications are open to eavesdropping
- D. Users experience poor wireless network performance

**Answer:** D

**Question 25**

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

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

**Answer:** C

**Question 26**

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

**Answer:** A

**Question 27**

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

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

**Answer:** A

# CCNAv7 – New Questions

## Question 1

Which two QoS tools are used to guarantee minimum bandwidth to certain traffic? (Choose two)

- A. FIFO
- B. CBWFQ
- C. LLC
- D. WFQ
- E. RSVP

**Answer:** B D

## Question 2

Drag and drop the SNMP manager and agent identifier commands from the left onto the functions on the right.

show snmp group	displays information about the SNMP recipient
show snmp community	displays the IP address of the remote SNMP device
show snmp chassis	displays the SNMP access string
show snmp engineID	displays the SNMP security model in use
show snmp host	displays the SNMP server serial number

**Answer:**

- + show snmp group: displays the SNMP security model in use
- + show snmp community: displays the SNMP access string
- + show snmp chassis: displays the SNMP server serial number
- + show snmp engineID: displays the IP address of the remote SNMP device
- + show snmp host: displays information about the SNMP recipient

## Question 3

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

**Question 4**

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

**Question 5**

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

**Question 6**

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:** C D

**Question 7**

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

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

**Answer:** C

**Question 8**

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

**Question 9**

Which CRUD operation corresponds to the HTTP GET method?

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

**Answer:** A

**Question 10**

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

**Question 11**

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

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

**Answer:** A

**Question 12**

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

**Question 13**

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 0.0.0.255 172.16.10.0 0.0.0.255 eq ssh
- B. access-list 101 permit tcp 10.11.0.0 0.0.0.255 172.16.10.0 0.0.0.255 eq scp
- C. access-list 101 permit tcp 10.11.0.0 0.0.0.255 172.16.10.0 0.0.0.255 eq telnet
- D. access-list 101 permit tcp 10.1.10.0 0.0.0.255 172.16.10.0 0.0.0.255 eq https

**Answer:** A (?)

#### **Question 14**

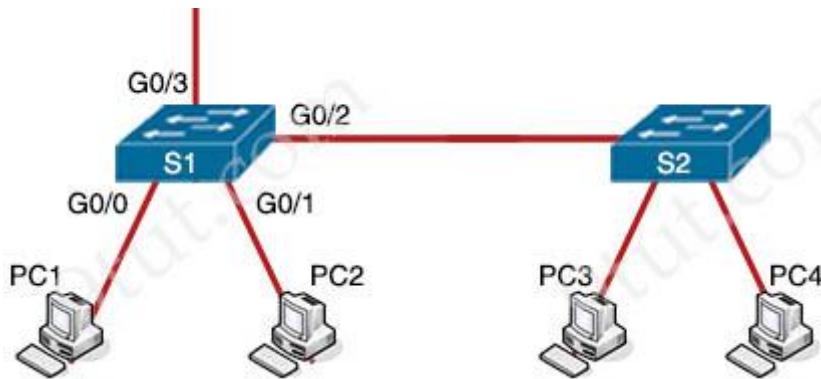
A network administrator must enable DHCP services between two sites. What must be configured for the router to pass DHCPDISCOVER messages on to the server?

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

**Answer:** A

#### **Question 15**

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

### Question 16

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

### Question 17

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

**Question 18**

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

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

**Answer:** A

**Question 19**

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:** A

**Question 20**

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

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

**Answer:** D

**Question 21**

Which network plane is centralized and manages routing decisions?

- A. policy plane
- B. control plane

- C. management plane
- D. data plane

**Answer:** B

**Question 22**

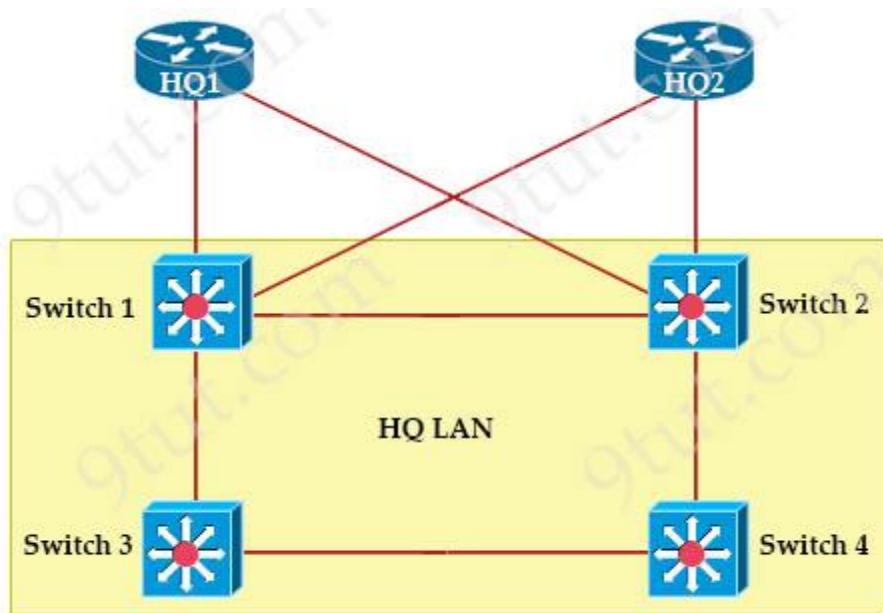
What does a router do when configured with the default DNS lookup settings, and a URL is entered on the CLI?

- 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

**Question 23**

Refer to the exhibit.



Switch 1
VLAN 110 – 32778 0018.184e.3c00
Switch 2
VLAN 110 – 24586 001a.e3ff.a680
Switch 3
VLAN 110 – 28682 0022.55cf.cc00

Switch 4
VLAN 110 – 64000 0e38.7363.657f

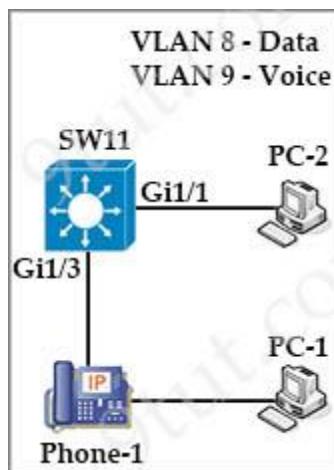
Which switch becomes the root of the spanning tree for VLAN 110?

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

**Answer:** B

#### Question 24

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?

<b>Option A</b>	<b>Option B</b>
interface gigabitethernet1/1 switchport mode access switchport access vlan 8 ! interface gigabitethernet1/3 switchport mode access switchport voice vlan 8 switchport access vlan 9	interface gigabitethernet1/1 switchport mode access switchport access vlan 9 ! interface gigabitethernet1/3 switchport mode trunk switchport voice vlan 8 switchport access vlan 9
<b>Option C</b>	<b>Option D</b>
interface gigabitethernet1/1	interface gigabitethernet1/1

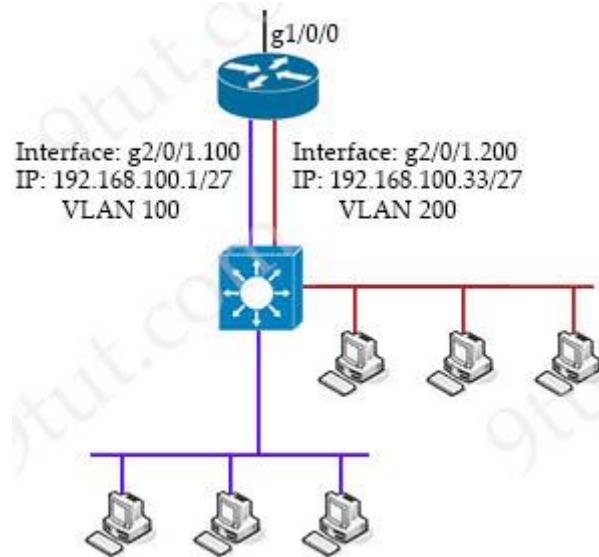
switchport mode access switchport access vlan 8 ! interface gigabitethernet1/3 switchport mode access switchport access vlan 8 switchport voice vlan 9	switchport mode access switchport access vlan 8 ! interface gigabitethernet1/3 switchport mode trunk switchport voice vlan 8 switchport access vlan 9
--	---

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

**Answer:** C

### Question 25

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?

Option A	Option B
<pre>Router1(config)#access-list 99 permit 209.165.201.2 0.0.0.0 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload Router1(config)#interface gi2/0/1.200 Router1(config)#ip nat inside</pre>	<pre>Router1(config)#access-list 99 permit 209.165.201.2 255.255.255.255 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload Router1(config)#interface gi2/0/1.200 Router1(config)#ip nat inside</pre>

Router1(config)#interface gi1/0/0 Router1(config)#ip nat outside	Router1(config)#interface gi1/0/0 Router1(config)#ip nat outside
<b>Option C</b>  Router1(config)#access-list 99 permit 192.168.100.0 0.0.0.255 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload Router1(config)#interface gi2/0/1.200 Router1(config)#ip nat inside Router1(config)#interface gi1/0/0 Router1(config)#ip nat outside	<b>Option D</b>  Router1(config)#access-list 99 permit 192.168.100.32 0.0.0.31 Router1(config)#ip nat inside source list 99 interface gi1/0/0 overload Router1(config)#interface gi2/0/1.200 Router1(config)#ip nat inside Router1(config)#interface gi1/0/0 Router1(config)#ip nat outside

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

**Answer:** D

### Question 26

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

**Answer:** A

### Question 27

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.

**Answer:** B

## Question 28

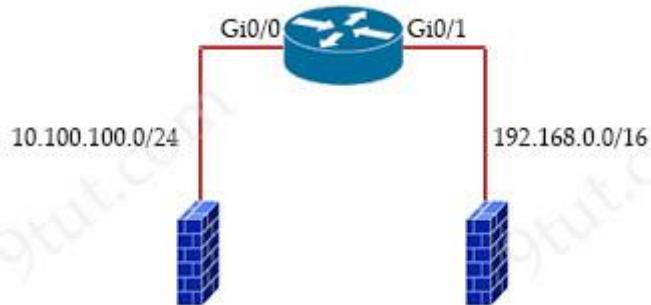
Which protocol does an IPv4 host use to obtain a dynamically assigned IP address?

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

**Answer:** D

## Question 29

Refer to the exhibit.



<b>Option A</b> ip access-list standard 99 permit 10.100.100.0 0.0.0.255 deny 192.168.0.0 0.0.255.255	<b>Option B</b> ip access-list standard 99 permit 10.100.100.0 0.0.0.255 deny 192.168.0.0 0.255.255.255
<b>Option C</b> ip access-list standard 100 permit 10.100.100.0 0.0.0.255 deny 192.168.0.0 0.255.255.255	<b>Option D</b> ip access-list standard 199 permit 10.100.100.0 0.0.0.255 deny 192.168.0.0 0.0.255.255

An access list is required to permit traffic from any host on interface G0/0 and deny traffic from interface Gi0/1. Which access list must be applied?

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

**Answer:** A

### **Question 30**

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

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

**Answer:** C

### **Question 31**

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

**Answer:** B

### **Question 32**

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

- A. applications
- B. operating system
- C. VM configuration file
- D. disk

**Answer:** D

### **Question 33**

Which implementation provides the strongest encryption combination for the wireless environment?

- A. WPA2 + AES
- B. WPA + AES
- C. WEP
- D. WPA + TKIP

**Answer: A**

**Question 34**

Refer to the exhibit.

```
import ncclient  
  
with manager.connect(host='192.168.1.1', port=830,  
username='root', password='teset123!', allow_agent=False) as m:  
    print(m.get_config('running').data_xml)
```

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?

- A. Use the xml 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.

**Answer: D**

**Question 35**

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

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

**Answer: A D**

**Question 36**

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

- A. The previous frame is delivered, the new frame is dropped, and a retransmission request is sent.
- B. The new frame is delivered first, the previous frame is dropped, and a retransmission request is sent.

- C. The two frames are processed and delivered at the same time.
- D. The new frame is placed in a queue for transmission after the previous frame.

**Answer:** D

**Question 37**

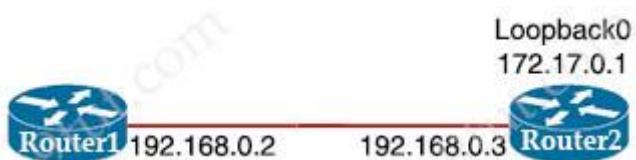
Which WAN topology provides a combination of simplicity quality, and availability?

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

**Answer:** C

**Question 38**

Refer to the exhibit.



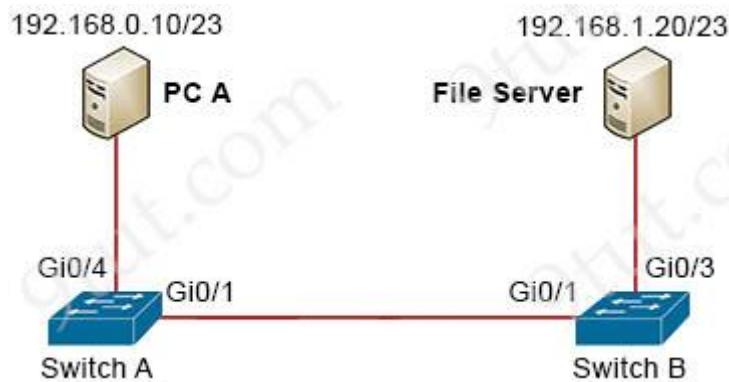
The ntp server 192.168.0.3 command has been configured on Router1 to make it an NTP client of router 2. Which command must be configured on Router2 so that it operates in server-only mode and relies only on its internal clock?

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

**Answer:** B

**Question 39**

Refer to the exhibit.



<b>Switch A</b>	<b>Switch B</b>
Vlan 10,11,12,13  interface GigabitEthernet0/1 switchport mode trunk switchport trunk allowed vlan 10-12 ! interface GigabitEthernet0/4 switchport access vlan 13 switchport mode access	Vlan 10,11,12,13  interface GigabitEthernet0/1 switchport mode trunk ! interface GigabitEthernet0/3 switchport access vlan 13 switchport mode access

A network engineer must configured 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

#### Question 40

Why does a switch flood a frame to all ports?

- A. The destination MAC address of the frame is unknown
- 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 frame has zero destination MAC addresses

**Answer:** A

#### Question 41

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

**Answer:** A

#### **Question 42**

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

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

**Answer:** D

#### **Question 43**

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

**Answer:** A

#### **Question 44**

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

**Answer:** C

**Question 45**

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

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

**Answer:** D

**Question 46**

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

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

**Answer:** B

**Question 47**

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

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

**Answer:** D

**Question 48**

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

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

**Answer:** D

**Question 49**

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

**Answer:** A

**Question 50**

What is a characteristic of private IPv4 addressing?

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

**Answer:** A

**Question 51**

Which network action occurs within the data plane?

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

**Answer:** A

## Basic Questions

<https://www.9tut.com/basic-questions-3>

**Question 1**

Which two statements about the purpose of the OSI model are accurate? (Choose two)

- A. Defines the network functions that occur at each layer
- B. Facilitates an understanding of how information travels throughout a network
- C. Changes in one layer do not impact other layer
- D. Ensures reliable data delivery through its layered approach

**Answer:** A B

### **Question 2**

What is the default behavior of a Layer 2 switch when a frame with an unknown destination MAC address is received?

- A. The Layer 2 switch drops the received frame
- B. The Layer 2 switch floods packets to all ports except the receiving port in the given VLAN
- C. The Layer 2 switch sends a copy of a packet to CPU for destination MAC address learning
- D. The Layer 2 switch forwards the packet and adds the destination MAC address to Its MAC address table

**Answer:** B

### **Question 3**

What is the destination MAC address of a broadcast frame?

- A. 00:00:0c:07:ac:01
- B. ff:ff:ff:ff:ff:ff
- C. 43:2e:08:00:00:0c
- D. 00:00:0c:43:2e:08
- E. 00:00:0crfHfrff

**Answer:** B

### **Question 4**

Which action is taken by a switch port enabled for PoE power classification override?

- A. When a powered device begins drawing power from a PoE switch port a syslog message is generated
- B. As power usage on a PoE switch port is checked data flow to the connected device is temporarily paused
- C. If a switch determines that a device is using less than the minimum configured power it assumes the device has failed and disconnects

D. If a monitored port exceeds the maximum administrative value for power, the port is shutdown and err-disabled

**Answer:** D

**Question 5**

In which way does a spine and-leaf architecture allow for scalability in a network when additional access ports are required?

- A. A spine switch and a leaf switch can be added with redundant connections between them
- B. A spine switch can be added with at least 40 GB uplinks
- C. A leaf switch can be added with a single connection to a core spine switch
- D. A leaf switch can be added with connections to every spine switch

**Answer:** D

**Question 6**

A frame that enters a switch fails the Frame Check Sequence. Which two interface counters are incremented? (Choose two)

- A. runts
- B. giants
- C. frame
- D. CRC
- E. input errors

**Answer:** D E

**Question 7**

What are two reasons that cause late collisions to increment on an Ethernet interface? (Choose two)

- A. when the sending device waits 15 seconds before sending the frame again
- B. when the cable length limits are exceeded
- C. when one side of the connection is configured for half-duplex
- D. when Carrier Sense Multiple Access/Collision Detection is used
- E. when a collision occurs after the 32nd byte of a frame has been transmitted

**Answer:** B C

## **Question 8**

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

**Answer:** B

## **Question 9**

What is a function of TFTP in network operations?

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

**Answer:** B

## **Question 10**

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

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

**Answer:** A E

## **Question 11**

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. forward traffic within the same broadcast domain
- D. to pass traffic between different networks

**Answer:** D

### **Question 12**

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 accommodate single-mode and multi-mode in a single module
- C. They offer reliable bandwidth up to 100 Mbps in half duplex mode
- D. They provide minimal interruption to services by being hot-swappable

**Answer:** D

## **Topology Architecture Questions**

<https://www.9tut.com/topology-architecture-questions>

### **Question 1**

What is a characteristic of spine-and-leaf architecture?

- A. Each device is separated by the same number of hops
- B. It provides variable latency
- C. It provides greater predictability on STP blocked ports
- D. Each link between leaf switches allows for higher bandwidth

**Answer:** A

### **Question 2**

What are two descriptions of three-tier network topologies? (Choose two)

- A. The core and distribution layers perform the same functions
- B. The access layer manages routing between devices in different domains
- C. The network core is designed to maintain continuous connectivity when devices fail
- D. The core layer maintains wired connections for each host
- E. The distribution layer runs Layer 2 and Layer 3 technologies

**Answer:** C E

### **Question 3**

What benefit does controller-based networking provide versus traditional networking?

- A. moves from a two-tier to a three-tier network architecture to provide maximum redundancy
- B. provides an added layer of security to protect from DDoS attacks
- C. allows configuration and monitoring of the network from one centralized port
- D. combines control and data plane functionality on a single device to minimize latency

**Answer:** C

**Question 4**

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

**Answer:** D

**Question 5**

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

**Answer:** C

**Question 6**

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

**Answer:** D

**Question 7**

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

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

**Answer:** A C

**Question 8**

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

**Answer:** A

**Question 9**

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

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

**Answer:** C E

**Question 10**

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

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

**Answer:** C

## Cloud & Virtualization Questions

<https://www.9tut.com/cloud-virtualization-questions>

### Question 1

Which statement identifies the functionality of virtual machines?

- A. Virtualized servers run most efficiently when they are physically connected to a switch that is separate from the hypervisor
- B. The hypervisor can virtualize physical components including CPU, memory, and storage
- C. Each hypervisor can support a single virtual machine and a single software switch
- D. The hypervisor communicates on Layer 3 without the need for additional resources

**Answer:** B

### Question 2

An organization has decided to start using cloud-provided services. Which cloud service allows the organization to install its own operating system on a virtual machine?

- A. platform-as-a-service
- B. software-as-a-service
- C. network-as-a-service
- D. infrastructure-as-a-service

**Answer:** D

### Question 3

Anycompany 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

**Answer:** B

**Question 4**

What are two fundamentals of virtualization? (Choose two)

- A. The environment must be configured with one hypervisor that serves solely as a network manager to monitor SNMP traffic
- B. It allows logical network devices to move traffic between virtual machines and the rest of the physical network
- C. It allows multiple operating systems and applications to run independently on one physical server
- D. It allows a physical router to directly connect NICs from each virtual machine into the network
- E. It requires that some servers, virtual machines and network gear reside on the Internet

**Answer:** B C

**Question 5**

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

- A. control and distribution of physical resources
- B. software-as-a-service
- C. services as a hardware controller
- D. infrastructure-as-a-service

**Answer:** A

**Question 6**

Which cloud service model does the engineer recommend?

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

**Answer:** D

**Question 7**

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

**Answer:** B

## CDP & LLDP Questions

<https://www.9tut.com/cdp-lldp-questions-2>

### Question 1

How can the Cisco Discovery Protocol be used?

- A. to allow a switch to discover the devices that are connected to its ports
- B. to determine the hardware platform of the device
- C. to determine the IP addresses of connected Cisco devices
- D. all of the above

**Answer:** D

### Question 2

In a CDP environment, what happens when the CDP interface on an adjacent device is configured without an IP address?

- A. CDP operates normally, but it cannot provide any information for that neighbor.
- B. CDP operates normally, but it cannot provide IP address information for that neighbor.
- C. CDP uses the IP address of another interface for that neighbor.
- D. CDP becomes inoperable on that neighbor.

**Answer:** C

### Question 3

Which command should you enter to configure an LLDP delay time of 5 seconds?

- A. lldp reinit 5
- B. lldp reinit 5000
- C. lldp holdtime 5
- D. lldp timer 5000

**Answer:** A

#### **Question 4**

Which command is used to enable LLDP globally on a Cisco IOS ISR?

- A. lldp run
- B. lldp enable
- C. lldp transmit
- D. cdp run
- E. cdp enable

**Answer:** A

#### **Question 5**

Refer to the exhibit. Which command provides this output?

Capability Codes: k - Router, I - Trans Bridge, B - source Route bridge  
S - Switch, H - Host, I - IGMP, r - Repeater, P - Phone,  
D - Remote, C - CVTA, M - Two-port Mac Relay

Device ID	Local Intrfce	Holdtme	Capability	Platform	Port ID
10.1.1.2	Gig37/3	176	RI	CPT 600	Gig36/41
10.1.1.2	Gig37/1	174	RI	CPT 600	Gig36/43
10.1.1.2	Gig36/41	134	RI	CPT 600	Gig37/3
10.1.1.2	Gig36/43	134	RI	CPT 600	Gig37/1
10.1.1.2	Ten3/2	132	RI	CPT 600	Ten4/2
10.1.1.2	Ten4/2	174	RI	CPT 600	Ten3/2

- A. show ip route
- B. show ip interface
- C. show interface
- D. show cdp neighbor

**Answer:** D

#### **Question 6**

Which command is used to specify the delay time in seconds for LLDP to initialize on any interface?

- A. lldp timer
- B. lldp holdtime
- C. lldp reinit
- D. lldp tlv-select

**Answer:** C

### **Question 7**

A network engineer must create a diagram of a multivendor network. Which command must be configured on the Cisco devices so that the topology of the network can be mapped?

- A. Device(Config)#lldp run
- B. Device(Config)#cdp run
- C. Device(Config-if)#cdp enable
- D. Device(Config)#flow-sampler-map topology

**Answer:** A

### **Question 8**

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

**Answer:** B

## **Switch Questions**

<https://www.9tut.com/switch-questions-3>

### **Question 1**

Which three statements about MAC addresses are correct? (Choose three)

- A. To communicate with other devices on a network, a network device must have a unique MAC address
- B. The MAC address is also referred to as the IP address
- C. The MAC address of a device must be configured in the Cisco IOS CLI by a user with

administrative privileges

- D. A MAC address contains two main components, the first of which identifies the manufacturer of the hardware and the second of which uniquely identifies the hardware
- E. An example of a MAC address is 0A:26:B8:D6:65:90
- F. A MAC address contains two main components, the first of which identifies the network on which the host resides and the second of which uniquely identifies the host on the network

**Answer:** A D E

### **Question 2**

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

**Answer:** B E

### **Question 3**

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

- A. makes forwarding decisions based on the MAC address of a packet
- B. selects the best route between networks on a WAN
- C. moves packets within a VLAN
- D. moves packets between different VLANs
- E. acts as a central point for association and authentication servers

**Answer:** A C

### **Question 4**

How does the dynamically-learned MAC address feature function?

- A. It requires a minimum number of secure MAC addresses to be filled dynamically
- 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. The CAM table is empty until ingress traffic arrives at each port

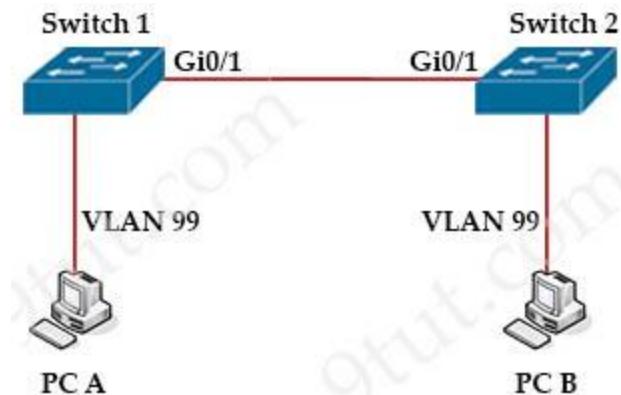
**Answer:** D

# VLAN & Trunking Questions

<https://www.9tut.com/trunking-questions-3>

## Question 1

Refer to the exhibit. After the switch configuration the ping test fails between PC A and PC B. Based on the output for switch 1, which error must be corrected?



Switch 1	Switch 2
Name: Gi0/1	Name: Gi0/1
Switchport: Enabled	Switchport: Enabled
Administrative Mode: trunk	Administrative Mode: trunk
Operational Mode: trunk	Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q	Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q	Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off	Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)	Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)	Trunking Native Mode VLAN: 99 (default)
Administrative Native VLAN tagging: enabled	Administrative Native VLAN tagging: enabled
Voice VLAN: none	Voice VLAN: none
<output omitted>	<output omitted>
Trunking VLANs Enabled: 50-100	Trunking VLANs Enabled: 50-100
Pruning VLANs Enabled: 2-1001	Pruning VLANs Enabled: 2-1001
Capture Mode Disabled	Capture Mode Disabled
Capture VLANs Allowed: ALL	Capture VLANs Allowed: ALL

- A. There is a native VLAN mismatch
- B. Access mode is configured on the switch ports.
- C. The PCs are in the incorrect VLAN
- D. All VLANs are not enabled on the trunk

**Answer: A**

**Question 2**

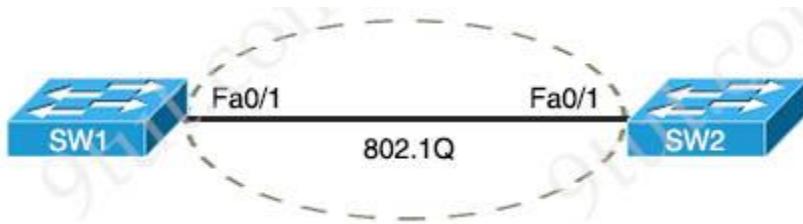
Two switches are connected and using Cisco Dynamic Trunking Protocol. SW1 is set to Dynamic Desirable. What is the result of this configuration?

- A. The link is in a downstate.
- B. The link is in an error disabled state
- C. The link becomes an access port
- D. The link becomes a trunkport

**Answer: D**

**Question 3**

Refer to exhibit. Which action do the switches take on the trunk link?



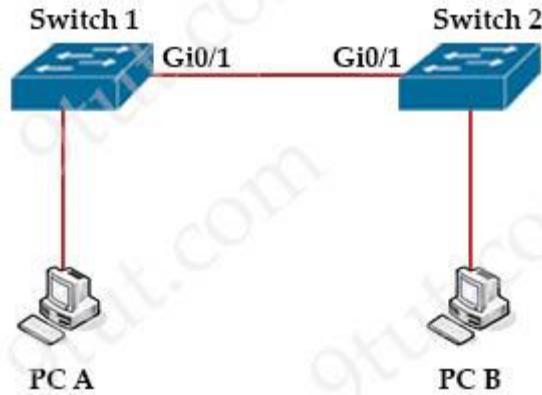
interface FastEthernet0/1 switchport trunk encapsulation dot1q switchport trunk native vlan 999 switchport mode trunk	interface FastEthernet0/1 switchport trunk encapsulation dot1q switchport trunk native vlan 99 switchport mode trunk
--	---

- A. The trunk does not form and the ports go into an err-disabled status
- B. The trunk forms but the mismatched native VLANs are merged into a single broadcast domain
- C. The trunk does not form, but VLAN 99 and VLAN 999 are allowed to traverse the link
- D. The trunk forms but VLAN 99 and VLAN 999 are in a shutdown state

**Answer: B**

**Question 4**

Refer to the exhibit. The network administrator wants VLAN 67 traffic to be untagged between Switch 1 and Switch 2 while all other VLANs are to remain tagged. Which command accomplishes this task?

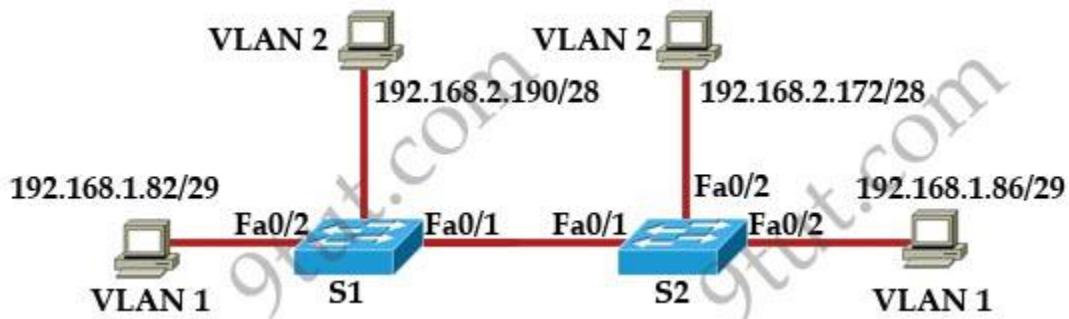


- A. switchport access vlan 67
- B. switchport trunk allowed vlan 67
- C. switchport private-vlan association host 67
- D. switchport trunk native vlan 67

**Answer:** D

### Question 5

Refer to the exhibit.



S1#show interface trunk				
Port	Mode	Encapsulation	Status	Native vlan
Fa0/1	on	802.1q	Trunking	1
Port Vlans allowed a trunk				
Fa0/1	1.1005			
Port Vlans allowed and active in management domain				
Fa0/1	12			
S2#show interface trunk				
Port	Mode	Encapsulation	Status	Native vlan
Fa0/1	on	802.1q	Trunking	2
Port Vlans allowed a trunk				
Fa0/1	1.1005			
Port Vlans allowed and active in management domain				
Fa0/1	12			

A frame from VLAN1 of switch S1 is sent to switch S2 where the frame received on VLAN2. What causes this behavior?

- A. trunk mode mismatches
- B. VLANs that do not correspond to a unique IP subnet
- C. native vlan mismatches
- D. allowing only vlan 2 on the destination

**Answer: C**

### Question 6

Refer to the exhibit. Which action is expected from SW1 when the untagged frame is received on the GigabitEthernet0/1 interface?

```
SW1#show run int gig 0/1
interface GigabitEthernet0/1
switchport access vlan 11
switchport trunk allowed vlan 1-10
switchport trunk encapsulation dot1q
switchport trunk native vlan 5
switchport mode trunk
speed 1000
duplex full
```

- A. The frame is processed in VLAN 5
- B. The frame is processed in VLAN 11

- C. The frame is processed in VLAN 1
- D. The frame is dropped

**Answer:** A

**Question 7**

Refer to the exhibit.



**SW1**

```
interface FastEthernet 0/1
  channel-group 1 mode auto
  switchport trunk encapsulation dot1q
  switchport mode trunk
```

```
interface FastEthernet 0/2
  channel-group 1 mode auto
  switchport trunk encapsulation dot1q
  switchport mode trunk
```

A network administrator is configuring an EtherChannel between SW1 and SW2. The SW1 configuration is shown. What is the correct configuration for SW2?

A. interface FastEthernet 0/1  
channel-group 1 mode active  
switchport trunk encapsulation dot1q  
switchport mode trunk

!  
interface FastEthernet 0/2  
channel-group 1 mode active

switchport trunk encapsulation dot1q  
switchport mode trunk

B. interface FastEthernet 0/1  
channel-group 2 mode auto  
switchport trunk encapsulation dot1q  
switchport mode trunk

!  
interface FastEthernet 0/2  
channel-group 2 mode auto

switchport trunk encapsulation dot1q  
switchport mode trunk

C. interface FastEthernet 0/1  
channel-group 1 mode desirable  
switchport trunk encapsulation dot1q  
switchport mode trunk  
!  
interface FastEthernet 0/2  
channel-group 1 mode desirable  
switchport trunk encapsulation dot1q  
switchport mode trunk

D. interface FastEthernet 0/1  
channel-group 1 mode passive  
switchport trunk encapsulation dot1q  
switchport mode trunk  
!  
interface FastEthernet 0/2  
channel-group 1 mode passive  
switchport trunk encapsulation dot1q  
switchport mode trunk

**Answer:** C

### **Question 8**

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

**Answer:** C

### **Question 9**

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.

**Answer: B**

**Question 10**

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

A.

```
R1 (config)#interface ethernet0/0  
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
```

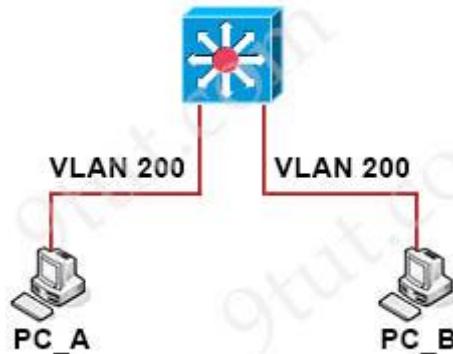
**Answer: B**

## VLAN & Trunking Questions 2

<https://www.9tut.com/vlan-trunking-questions-2>

### Question 1

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

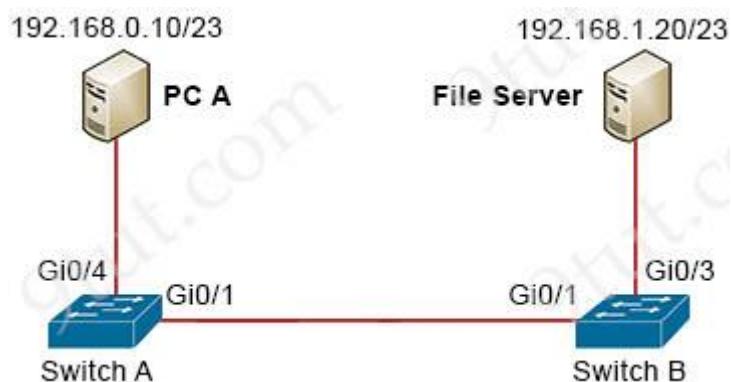


- A. The source MAC address is changed
- B. The source and destination MAC addresses remain the same
- C. The destination MAC address is replaced with ffff.ffff.ffff
- D. The switch rewrites the source and destination MAC addresses with its own

**Answer:** B

### Question 2

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?



<b>Switch A</b>	<b>Switch B</b>
Vlan 10,11,12,13  interface GigabitEthernet0/1 switchport mode trunk switchport trunk allowed vlan 10-12 ! interface GigabitEthernet0/4 switchport access vlan 13 switchport mode access	Vlan 10,11,12,13  interface GigabitEthernet0/1 switchport mode trunk ! interface GigabitEthernet0/3 switchport access vlan 13 switchport mode access

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

**Answer:** D

### Question 3

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**

**Answer:** B

### Question 4

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

**Answer:** B

### Question 5

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 DSCLP

**Answer:** B

## STP & VTP Questions

<https://www.9tut.com/stp-vtp-questions>

### Question 1

How does STP prevent forwarding loops at OSI Layer 2?

- A. TTL
- B. MAC address forwarding
- C. Collision avoidance.
- D. Port blocking

**Answer:** D

### Question 2

What is the primary effect of the spanning-tree portfast command?

- A. It enables BPDU messages
- B. It minimizes spanning-tree convergence time
- C. It immediately puts the port into the forwarding state when the switch is reloaded
- D. It immediately enables the port in the listening state

**Answer:** B

### Question 3

Which result occurs when PortFast is enabled on an interface that is connected to another switch?

- A. Spanning tree may fail to detect a switching loop in the network that causes broadcast storms
- B. VTP is allowed to propagate VLAN configuration information from switch to switch automatically.

- C. Root port choice and spanning tree recalculation are accelerated when a switch link goes down
- D. After spanning tree converges PortFast shuts down any port that receives BPDUs.

**Answer:** A

**Question 4**

Refer to exhibit. How does SW2 interact with other switches in this VTP domain?

```
SW2
vtp domain cisco
vtp mode transparent
vtp password test
interface fastethernet0/1
description connection to SW1
switchport mode trunk
switchport trunk encapsulation dot1q
```

- A. It processes VTP updates from any VTP clients on the network on its access ports
- B. It receives updates from all VTP servers and forwards all locally configured VLANs out all trunk ports
- C. It forwards only the VTP advertisements that it receives on its trunk ports
- D. It transmits and processes VTP updates from any VTP Clients on the network on its trunk ports

**Answer:** C

**Question 5**

Refer to the exhibit. What two conclusions should be made about this configuration? (Choose two)

```
SW1#show spanning-tree vlan 30

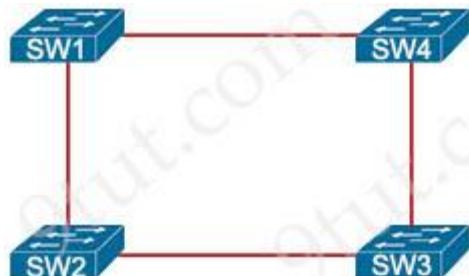
VLAN0030
Spanning tree enabled protocol rstp
Root ID Priority 32798
  Address 0018.7363.4300
  Cost 2
  Port 13 (FastEthernet2/1)
  Hello Time 2 sec
  Max Age 20 sec
  Forward Delay 20 sec
<output omitted>
```

- A. The designated port is FastEthernet 2/1
- B. This is a root bridge
- C. The spanning-tree mode is Rapid PVST+
- D. The spanning-tree mode is PVST+
- E. The root port is FastEthernet 2/1

**Answer:** C E

**Question 6**

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

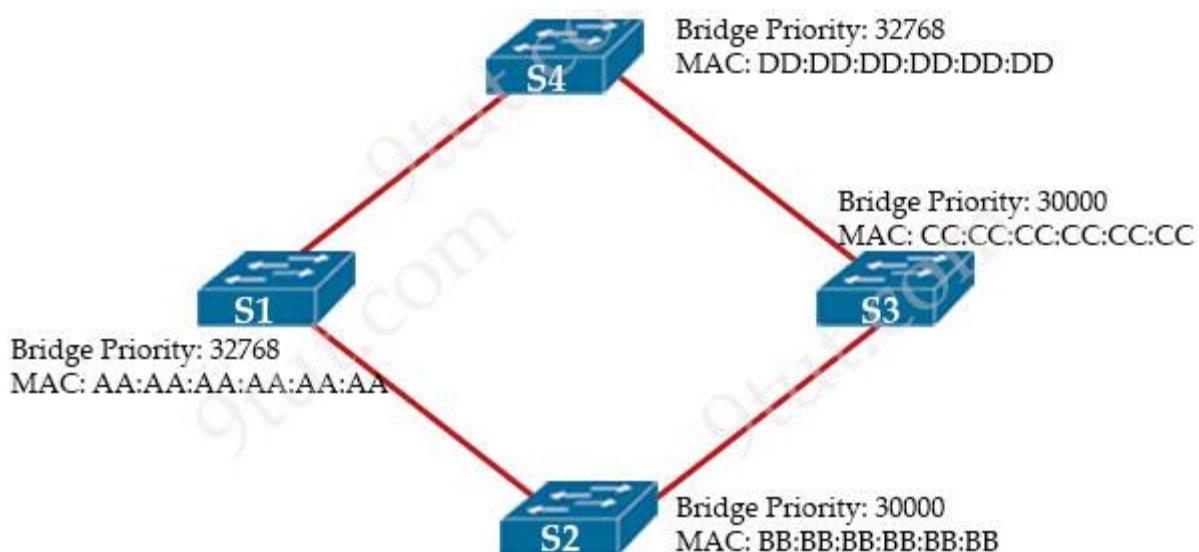
SW4: 0C:E0:18:A1:B3:19

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

**Answer:** C

**Question 7**

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



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

**Answer:** B

**Question 8**

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

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

**Answer:** B

**Question 9**

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

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

**Answer:** B

**Question 10**

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

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

**Answer:** A

## Question 11

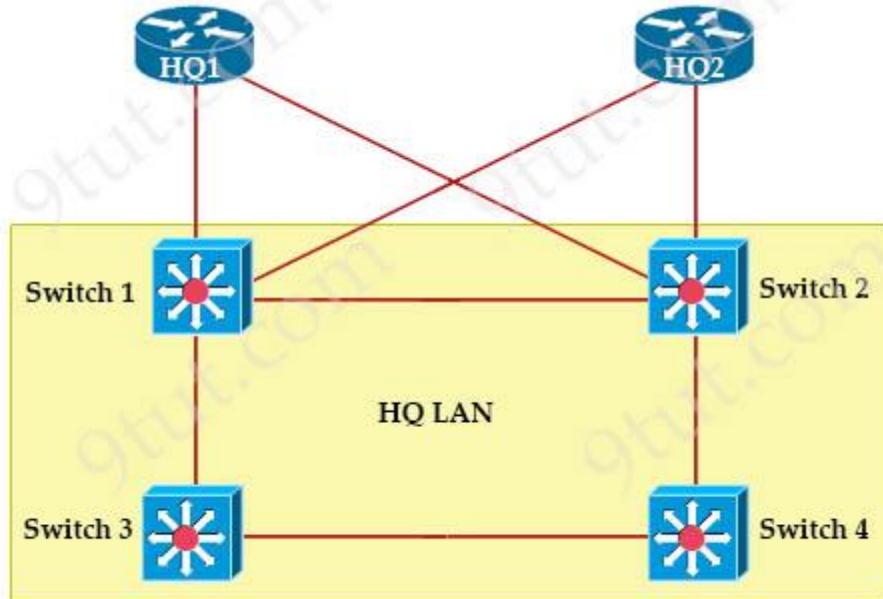
Which spanning-tree enhancement avoids the learning and listening states and immediately places ports in the forwarding state?

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

**Answer:** D

## Question 12

Refer to the exhibit.



Switch1: 0C.E0.38.57.24.22
Switch2: 0C.0E.15.22.1A.61
Switch3: 0C.0E.15.1D.3C.9A
Switch4: 0C.E0.19.A1.4D.16

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

**Answer: C**

### **Question 13**

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

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

**Answer: C**

## **EtherChannel Questions**

<https://www.9tut.com/etherchannel-questions-2>

### **Question 1**

Which two statements about EtherChannel technology are true? (Choose two)

- A. EtherChannel provides increased bandwidth by bundling existing FastEthernet or Gigabit Ethernet interfaces into a single EtherChannel
- B. STP does not block EtherChannel links
- C. You can configure multiple EtherChannel links between two switches, using up to a limit of sixteen physical ports
- D. EtherChannel does not allow load sharing of traffic among the physical links within the EtherChannel
- E. EtherChannel allows redundancy in case one or more links in the EtherChannel fail

**Answer: A E**

### **Question 2**

Which mode must be used to configure EtherChannel between two switches without using a negotiation protocol?

- A. on
- B. auto
- C. active
- D. desirable

**Answer: A**

**Question 3**

Refer to the exhibit. Based on the LACP neighbor status, in which mode is the SW1 port channel configured?

```
SW1# show lACP neighbor
Flags: S - Device is sending Slow LACPDUs
      F - Device is sending Fast LACPDUs
      A - Device is in Active mode
      P - Device is in Passive mode

Channel group 31 neighbors

Partner's information:

      LaCP port          Admin Oper Port   Port
Port  Flags  Priority Dev ID       Age key  Key Number State|
Et1/0 SP    32768     aabb.cc40.4000 6s 0x0    0x23 0x101 0x3C
Et1/1 SP    32768     aabb.cc50.4000 6s 0x0    0x23 0x101 0x3C
```

- A. passive
- B. mode on
- C. auto
- D. active

**Answer: D**

**Question 4**

Refer to the exhibit.

```
Switch#show etherchannel summary
<output omitted>

Group  Port-channel  Protocol  Ports
-----+-----+-----+
10     Po10(SU)     LACP      Gi0/0(P) Gi0/1(P)
20     Po20(SU)     LACP      Gi0/2(P) Gi0/3(P)
```

Which two commands were used to create port channel 10? (Choose two)

- A.  
interface range g0/0-1  
channel-group 10 mode active

B.  
interface range g0/0-1  
channel-group 10 mode desirable

C.  
interface range g0/0-1  
channel-group 10 mode passive

D.  
interface range g0/0-1  
channel-group 10 mode auto

E.  
interface range g0/0-1  
channel-group 10 mode on

**Answer:** A C

### **Question 5**

Which two command sequences must you configure on a switch to establish a Layer 3 EtherChannel with an open-standard protocol? (Choose two)

A. interface GigabitEthernet0/0/1  
channel-group 10 mode active

B. interface GigabitEthernet0/0/1  
channel-group 10 mode auto

C. interface GigabitEthernet0/0/1  
channel-group 10 mode on

D. interface port-channel 10  
no switchport  
ip address 172.16.0.1 255.255.255.0

E. interface port-channel 10  
switchport  
switchport mode trunk

**Answer:** A D

## **TCP & UDP Questions**

<https://www.9tut.com/tcp-udp-questions>

## **Question 1**

What is the difference regarding reliability and communication type between TCP and UDP?

- A. TCP is reliable and is a connection-oriented protocol UDP is not reliable and is a connectionless protocol
- B. TCP is not reliable and is a connection-oriented protocol; UDP is reliable and is a connectionless protocol
- C. TCP is not reliable and is a connectionless protocol; UDP is reliable and is a connection-oriented protocol
- D. TCP is reliable and is a connectionless protocol; UDP is not reliable and is a connection-oriented protocol

**Answer:** A

## **Question 2**

How do TCP and UDP differ in the way they provide reliability for delivery of packets?

- A. TCP is a connectionless protocol that does not provide reliable delivery of data, UDP is a connection-oriented protocol that uses sequencing to provide reliable delivery
- B. TCP does not guarantee delivery or error checking to ensure that there is no corruption of data UDP provides message acknowledgement and retransmits data if lost
- C. TCP provides flow control to avoid overwhelming a receiver by sending too many packets at once, UDP sends packets to the receiver in a continuous stream without checking for sequencing
- D. TCP uses windowing to deliver packets reliably; UDP provides reliable message transfer between hosts by establishing a three-way handshake

**Answer:** C

## **Question 3**

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

**Answer:** A

## **Question 4**

How do TCP and UDP differ in the way that they establish a connection between two endpoints?

- A. TCP uses synchronization packets, and UDP uses acknowledgment packets
- B. UDP uses SYN, SYN ACK and FIN bits in the frame header while TCP uses SYN, SYN ACK and ACK bits
- C. UDP provides reliable message transfer and TCP is a connectionless protocol
- D. TCP uses the three-way handshake and UDP does not guarantee message delivery

**Answer:** D

## IP Address & Subnetting Questions

<https://www.9tut.com/ip-address-subnetting-questions>

### Question 1

An engineer must configure a /30 subnet between two routers. Which usable IP address and subnet mask combination meets this criteria?

- A. interface e0/0  
description to HQ-A371:10975  
ip address 172.16.1.4 255.255.255.248
- B. interface e0/0  
description to HQ-A371:10975  
ip address 10.2.1.3 255.255.255.252
- C. interface e0/0  
description to HQ-A371:10975  
ip address 192.168.1.1 255.255.255.248
- D. interface e0/0  
description to HQ-A371:10975  
ip address 209.165.201.2 255.255.255.252

**Answer:** D

### Question 2

Refer to exhibit. Which statement explains the configuration error message that is received?

```
Router(config)#interface GigabitEthernet 1/0/1
Router(config-if)#ip address 192.168.16.143 255.255.255.240
Bad mask /28 for address 192.168.16.143
```

- A. It is a broadcast IP address
- B. The router does not support /28 mask
- C. It belongs to a private IP address range
- D. It is a network IP address

**Answer:** A

**Question 3**

Which network allows devices to communicate without the need to access the Internet?

- A. 172.9.0.0/16
- B. 172.28.0.0/16
- C. 192.0.0.0/8
- D. 209.165.201.0/24

**Answer:** B

**Question 4**

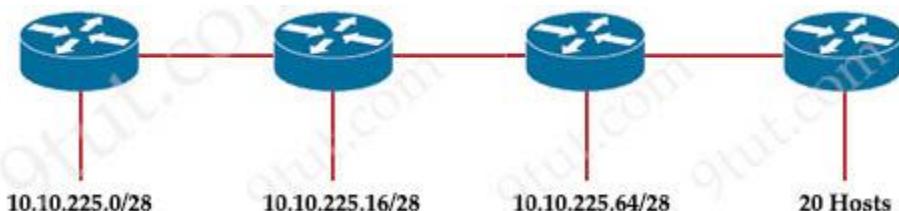
Which function does the range of private IPv4 addresses perform?

- A. allows multiple companies to each use the same addresses 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. enables secure communications to the internet for all external hosts

**Answer:** A

**Question 5**

Refer to the exhibit. An engineer must add a subnet for a new office that will add 20 users to the network. Which IPv4 network and subnet mask combination does the engineer assign to minimize wasting addresses?



- A. 10.10.225.48 255.255.255.240
- B. 10.10.225.32 255.255.255.240

- C. 10.10.225.48 255.255.255.224
- D. 10.10.225.32 255.255.255.224

**Answer:** D

### Question 6

A corporate office uses four floors in a building

- \* Floor 1 has 24 users
- \* Floor 2 has 29 users
- \* Floor 3 has 28 users
- \* Floor 4 has 22 users

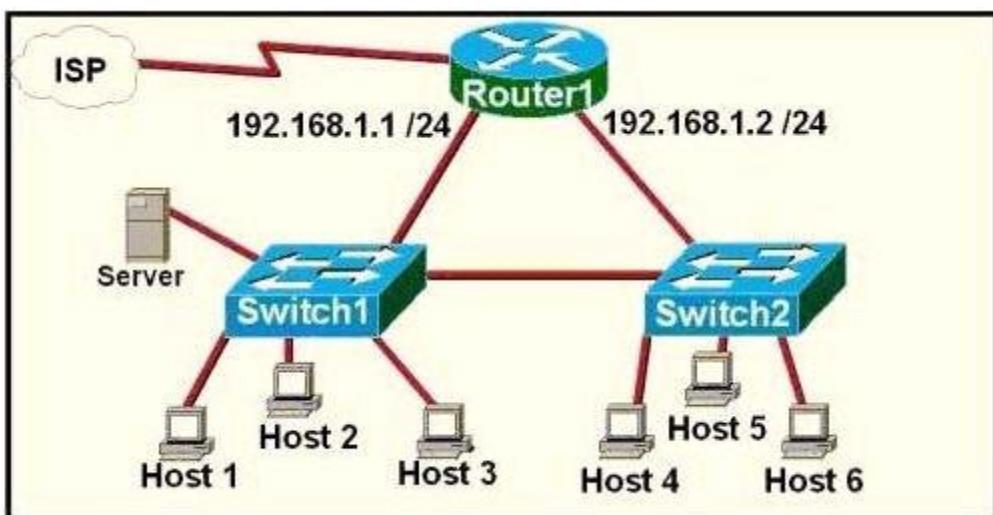
Which subnet summarizes and gives the most efficient distribution of IP addresses for the router configuration?

- A. 192.168.0.0/26 as summary and 192.168.0.0/29 for each floor
- B. 192.168.0.0/24 as summary and 192.168.0.0/28 for each floor
- C. 192.168.0.0/23 as summary and 192.168.0.0/25 for each floor
- D. 192.168.0.0/25 as summary and 192.168.0.0/27 for each floor

**Answer:** D

### Question 7

Refer to the exhibit. A network technician is asked to design a small network with redundancy. The exhibit represents this design, with all hosts configured in the same VLAN. What conclusions can be made about this design?



- A. The design will function as intended
- B. Spanning-tree will need to be used.

- C. The router will not accept the addressing scheme.
- D. The connection between switches should be a trunk.
- E. The router interfaces must be encapsulated with the 802.1Q protocol.

**Answer:** C

### **Question 8**

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

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

**Answer:** B

### **Question 9**

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 192.168.0.0 255.255.255.224
- D. ip address 192.168.0.0 255.255.255.128

**Answer:** C

## **IP Routing Questions**

<https://www.9tut.com/ip-routing-questions>

### **Question 1**

Which statement about static and dynamic routes is true?

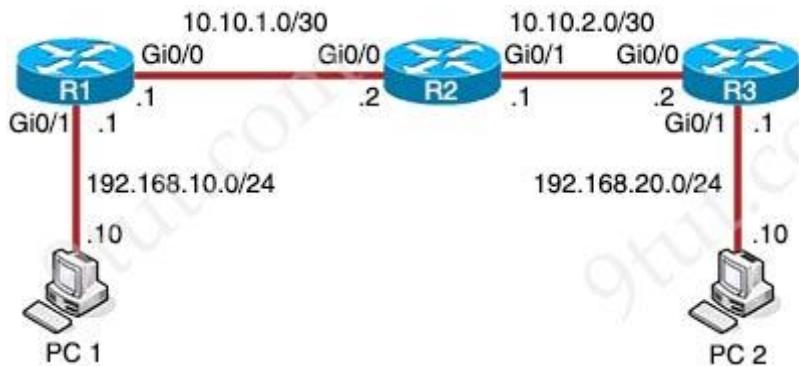
- A. Dynamic routes are manually configured by a network administrator, while static routes are automatically learned and adjusted by a routing protocol
- B. Static routes are manually configured by a network administrator, while dynamic routes are automatically learned and adjusted by a routing protocol
- C. Static routes tell the router how to forward packets to networks that are not directly connected, while dynamic routes tell the router how to forward packets to networks that are directly connected

D. Dynamic routes tell the router how to forward packets to networks that are not directly connected, while static routes tell the router how to forward packets to networks that are directly connected

**Answer: B**

**Question 2**

Refer to the exhibit. When PC 1 sends a packet to PC2, the packet has which source and destination IP address when it arrives at interface Gi0/0 on router R2?



- A. source 192.168.10.10 and destination 10.10.2.2
- B. source 192.168.20.10 and destination 192.168.20.1
- C. source 192.168.10.10 and destination 192.168.20.10
- D. source 10.10.1.1 and destination 10.10.2.2

**Answer: C**

**Question 3**

Which of the following dynamic routing protocols are Distance Vector routing protocols? (Choose two)

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

**Answer: B E**

**Question 4**

Refer to the exhibit. With which metric was the route to host 172.16.0.202 learned?

```

R1#show ip route | begin gateway
Gateway of last resort is 209.165.200.246 to network 0.0.0.0
S* 0.0.0.0/0 [1/0] via 209.165.200.246, Serial0/1/0
    is directly connected, Serial0/1/0
    172.16.0.0/16 is variably subnetted, 3 subnets, 3 masks
S   172.16.0.0/24 [1/0] via 207.165.200.254, 00:00:33, Serial0/0/0
O   172.16.0.128/25 [110/38443] via 207.165.200.254, 00:00:33, Serial0/0/1
D   172.16.0.192/29 [90/3184439] via 207.165.200.254, 00:00:33, Serial0/0/1
    209.165.200.0/24 is variably subnetted, 4 subnets, 2 masks
C   209.165.200.248/30 is directly connected, Serial0/0/0
L   209.165.200.249/30 is directly connected, Serial0/0/0
C   209.165.200.252/30 is directly connected, Serial0/0/1
L   209.165.200.253/32 is directly connected, Serial0/0/1

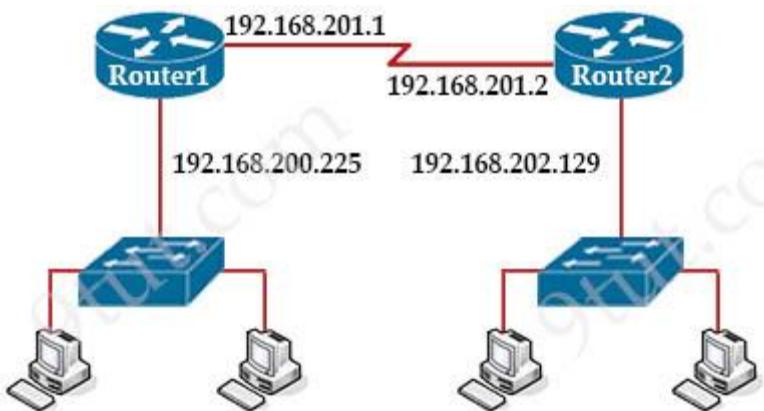
```

- A. 0
- B. 110
- C. 38443
- D. 3184439

**Answer:** C

### Question 5

Refer to the exhibit. Which command would you use to configure a static route on Router 1 to network 192.168.202.0/24 with a nondefault administrative distance?

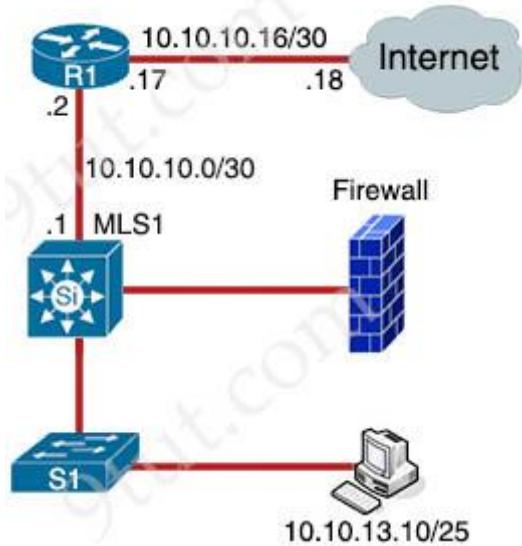


- A. router1(config)#ip route 192.168.202.0 255.255.255.0 192.168.201.2 1
- B. router1(config)#ip route 192.168.202.0 255.255.255.0 192.168.201.2 5
- C. router1(config)#ip route 1 192.168.201.1 255.255.255.0 192.168.201.2
- D. router1(config)#ip route 5 192.168.202.0 255.255.255.0 192.168.201.2

**Answer:** B

### Question 6

Refer to the exhibit. Which type of route does R1 use to reach host 10.10.13.10/32?



```
R1#show ip route
Gateway of last resort is 10.10.10.18 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 4 subnets. 3 Masks
C 10.10.10.0/30 is directly connected, FastEthernet0/1
O 10.10.13.0/25 [110/4576] via 10.10.10.1, 02:53:11, FastEthernet0/1
C 10.10.10.16/30 is directly connected, FastEthernet0/24
O 10.10.13.144/28 [110/110] via 10.10.10.1, 03:51:21, FastEthernet0/1
B* 0.0.0.0/0 [20/0] via 10.10.10.18, 02:17:53
```

- A. floating static route
- B. host route
- C. default route
- D. network route

**Answer:** D

### Question 7

Refer to the exhibit. If configuring a static default route on the router with the **ip route 0.0.0.0 0.0.0.0 10.13.0.1 120** command, how does the router respond?

Gateway of last resort is 10.12.0.1 to network 0.0.0.0

```
O*E2 0.0.0.0/0 [110/1] via 10.12.0.1, 00:00:01, GigabitEthernet0/0
      10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C    10.0.0.0/24 is directly connected, GigabitEthernet0/0
L    10.0.0.2/32 is directly connected, GigabitEthernet0/0
C    10.13.0.0/24 is directly connected, GigabitEthernet0/1
L    10.13.0.2/32 is directly connected, GigabitEthernet0/1
```

- A. It ignores the new static route until the existing OSPF default route is removed
- B. It immediately replaces the existing OSPF route in the routing table with the newly configured

static route

- C. It starts load-balancing traffic between the two default routes
- D. It starts sending traffic without a specific matching entry in the routing table to GigabitEthernet0/1

**Answer:** A

### **Question 8**

When a floating static route is configured, which action ensures that the backup route is used when the primary route falls?

- A. The floating static route must have a higher administrative distance than the primary route so it is used as a backup
- B. The administrative distance must be higher on the primary route so that the backup route becomes secondary
- C. The floating static route must have a lower administrative distance than the primary route so it is used as a backup
- D. The default-information originate command must be configured for the route to be installed into the routing table

**Answer:** A

### **Question 9**

Which attribute does a router use to select the best path when two or more different routes to the same destination exist from two different routing protocols?

- A. dual algorithm
- B. metric
- C. administrative distance
- D. hop count

**Answer:** C

### **Question 10**

Refer to the exhibit. Which route does R1 select for traffic that is destined to 192.168.16.2?

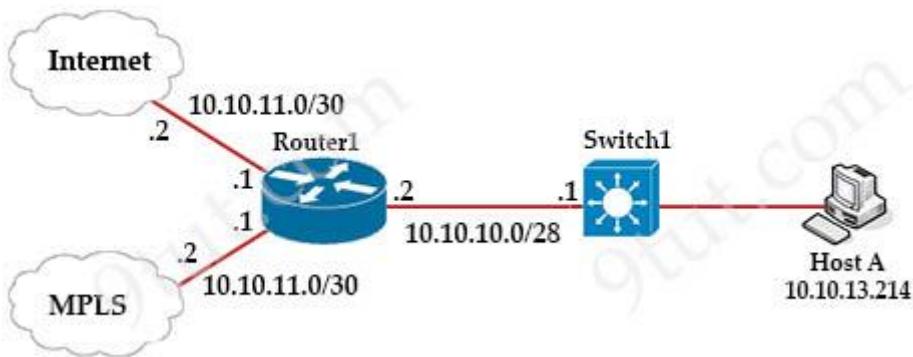
```
R1#show ip route
D    192.168.16.0/26 [90/2679326] via 192.168.1.1
R    192.168.16.0/24 [120/3] via 192.168.1.2
O    192.168.16.0/21 [110/2] via 192.168.1.3
i L1 192.168.16.0/27 [115/30] via 192.168.1.4
```

- A. 192.168.16.0/21
- B. 192.168.16.0/24
- C. 192.168.26.0/26
- D. 192.168.16.0/27

**Answer:** D

### Question 11

Refer to the exhibit. Which prefix does Router 1 use for traffic to Host A?



```
Router1#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0

 209.165.200.0/27 is sudnetted, 1 subnets
B  209.165.200.224 [20/0] via 10.10.12.2, 03:03:03
 209.165.201.0/27 is sudnetted, 1 subnets
B  209.165.201.0 [20/0] via 10.10.12.2, 03:03:03
 209.165.202.0/27 is subnetted, 1 subnets
B  209.165.202.128 [20/0] via 10.10.12.2, 03:03:03
    10.0.0.0/8 is variably subnetted, 8 subnets, 4 masks
C    10.10.10.0/28 is directly connected, GigabitEthernet0/0
C    10.10.11.0/30 is directly connected, FastEthernet2/0
C    10.10.12.0/30 is directly connected, GigabitEthernet0/1
O    10.10.13.0/25 [110/2] via 10.10.10.1, 00:00:03, GigabitEthernet0/0
O    10.10.13.128/28 [110/2] via 10.10.10.1, 00:00:03, GigabitEthernet0/0
O    10.10.13.144/28 [110/2] via 10.10.10.1, 00:00:03, GigabitEthernet0/0
O    10.10.13.160/29 [110/2] via 10.10.10.1, 00:00:03, GigabitEthernet0/0
O    10.10.13.208/29 [110/2] via 10.10.10.1, 00:00:03, GigabitEthernet0/0
S*   0.0.0.0/0 [1/0] via 10.10.11.2
```

- A. 10.10.10.0/28
- B. 10.10.13.0/25
- C. 10.10.13.144/28
- D. 10.10.13.208/29

**Answer:** D

### Question 12

Router A learns the same route from two different neighbors, one of the neighbor routers is an OSPF neighbor and the other is an EIGRP neighbor. What is the administrative distance of the route that will be installed in the routing table?

- A. 20
- B. 90
- C. 110
- D. 115

**Answer:** B

### Question 13

Refer to the exhibit. How does router R1 handle traffic to 192.168.10.16?

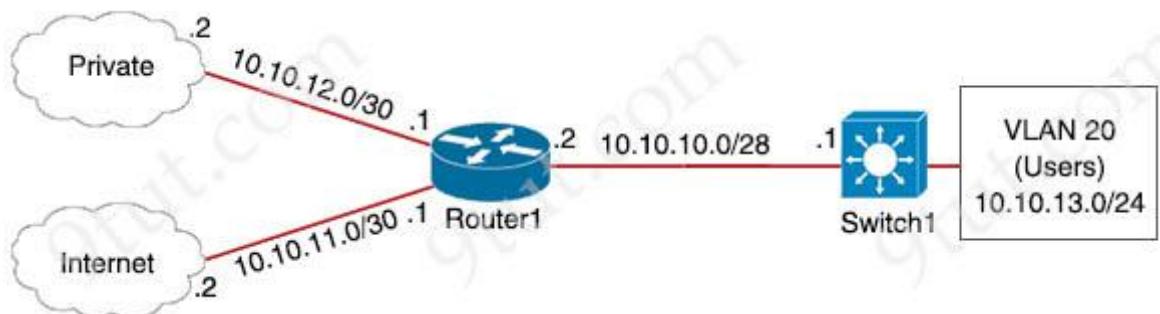
```
R1# show ip route
D 192.168.10.0/24 [90/2679326] via 192.168.1.1
R 192.168.10.0/27 [120/3] via 192.168.1.2
O 192.168.10.0/28 [110/2] via 192.168.1.3
i L1 192.168.10.0/13 [115/30] via 192.168.1.4
```

- A. It selects the IS-IS route because it has the shortest prefix inclusive of the destination address
- B. It selects the RIP route because it has the longest prefix: inclusive of the destination address
- C. It selects the OSPF route because it has the lowest cost
- D. It selects the EIGRP route because it has the lowest administrative distance

**Answer:** B

### Question 14

Refer to the exhibit. Which path is used by the router for Internet traffic?



```
R1#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, 00:10:34
      10.0.0.0/8 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
C           10.10.13.0/30 [110/2] via 10.10.10.1, 00:03:34,
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
```

```
Switch1#show ip route
Gateway of last resort is not set
    10.0.0.0/8 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

**Answer:** C

## IP Routing Questions 2

<https://www.9tut.com/ip-routing-questions-2>

### Question 1

Refer to the exhibit. A router reserved these five routes from different routing information sources. Which two routes does the router install in its routing table? (Choose two)

IBGP route 10.0.0.0/30
RIP route 10.0.0.0/30
OSPF route 10.0.0.0/16
OSPF route 10.0.0.0/30
EIGRP route 10.0.0.1/32

- A. RIP route 10.0.0.0/30
- B. iBGP route 10.0.0.0/30
- C. OSPF route 10.0.0.0/30
- D. EIGRP route 10.0.0.1/32
- E. OSPF route 10.0.0.0/16

**Answer:** C D

### Question 2

A packet is destined for 10.10.1.22. Which static route does the router choose to forward the packet?

- A. ip route 10.10.1.0 255.255.255.240 10.10.255.1
- B. ip route 10.10.1.16 255.255.255.252 10.10.255.1
- C. ip route 10.10.1.20 255.255.255.252 10.10.255.1
- D. ip route 10.10.1.20 255.255.255.254 10.10.255.1

**Answer:** C

### Question 3

Refer to the exhibit. Router R1 Fa0/0 cannot ping router R3 Fa0/1. Which action must be taken in router R1 to help resolve the configuration issue?



<b>R1#show ip route</b> <output omitted> Gateway of last resort is not set  10.0.0.0/24 is subnetted, 1 subnets C 10.10.10.0 is directly connected, FastEthernet0/0	<b>R2#show ip route</b> <output omitted> Gateway of last resort is not set  20.0.0.0/24 is subnetted, 1 subnets C 20.20.20.0 is directly connected, FastEthernet0/1 10.0.0.0/24 is subnetted, 1 subnets C 10.10.10.0 is directly connected, FastEthernet0/0
<b>R3#show ip route</b> <output omitted> Gateway of last resort is not set  20.0.0.0/24 is subnetted, 1 subnets C 20.20.20.0 is directly connected, FastEthernet0/1 10.0.0.0/24 is subnetted, 1 subnets S 10.10.10.0 [1/0] via 20.20.20.1	

- A. set the default network as 20.20.20.0/24
- B. set the default gateway as 20.20.20.2
- C. configure a static route with Fa0/1 as the egress interface to reach the 20.20.20.0/24 network
- D. configure a static route with 10.10.10.2 as the next hop to reach the 20.20.20.0/24 network

**Answer:** D

**Question 4**

Refer to the exhibit. Router R1 is running three different routing protocols. Which route characteristic is used by the router to forward the packet that it receives for destination IP 172.16.32.1?

```
R1#show ip route
...
D 172.16.32.0/27 [90/293847483] via 20.1.1.1
O 172.16.32.0/19 [110/22847] via 20.1.1.10
R 172.16.32.0/24 [120/2] via 20.1.1.3
```

- A. longest prefix
- B. metric
- C. cost
- D. administrative distance

**Answer:** A

**Question 5**

Router R1 must send all traffic without a matching routing-table entry to 192.168.1.1. Which configuration accomplishes this task?

- A.  
R1#config t  
R1(config)#ip routing  
R1(config)#ip route default-route 192.168.1.1
- B.  
R1#config t  
R1(config)#ip routing  
R1(config)#ip route 192.168.1.1 0.0.0.0 0.0.0.0
- C.  
R1#config t  
R1(config)#ip routing  
R1(config)#ip route 0.0.0.0 0.0.0.0 192.168.1.1
- D.  
R1#config t  
R1(config)#ip routing  
R1(config)#ip default-gateway 192.168.1.1

**Answer:** C

## **Question 6**

Refer to the exhibit. How does router R1 handle traffic to 192.168.12.16?

EIGRP: 192.168.12.0/24

RIP: 192.168.12.0/27

OSPF: 192.168.12.0/26

- A. It selects the IS-IS route because it has the shortest prefix inclusive of the destination address
- B. It selects the EIGRP route because it has the lowest administrative distance
- C. It selects the OSPF route because it has the lowest cost
- D. It selects the RIP route because it has the longest prefix inclusive of the destination address

**Answer:** D

## **Question 7**

R1 has learned route 10.10.10.0/24 via numerous routing protocols. Which route is installed?

- A. route with the lowest cost
- B. route with the next hop that has the highest IP
- C. route with the shortest prefix length
- D. route with the lowest administrative distance

**Answer:** D

## **Question 8**

What are two reasons for an engineer to configure a floating static route? (Choose two)

- A. to automatically route traffic on a secondary path when the primary path goes down
- B. to route traffic differently based on the source IP of the packet
- C. to enable fallback static routing when the dynamic routing protocol fails
- D. to support load balancing via static routing
- E. to control the return path of traffic that is sent from the router

**Answer:** A C

## **Question 9**

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* 0.0.0.0/0 [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
S   172.16.3.0/24 [1/0] via 207.165.200.250, Serial0/0/0
O   172.16.3.0/28 [110/84437] via 207.165.200.254, 00:00:30, 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

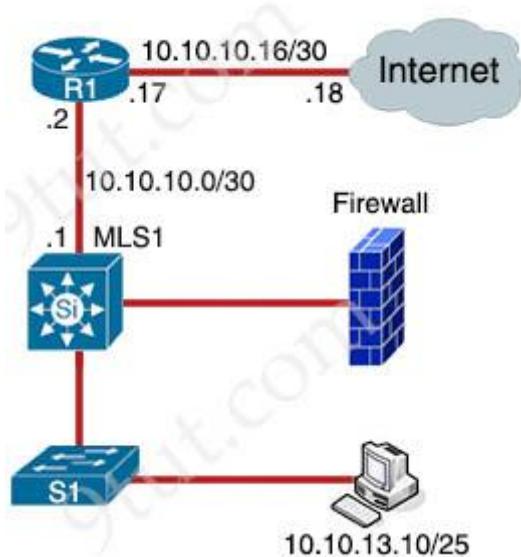
```

- 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

**Answer:** C

#### Question 10

Refer to the exhibit. Which route type is configured to reach the internet?



```

R1#show ip route
Gateway of last resort is 10.10.10.18 to network 0.0.0.0

10.0.0.0/8 is variably subnetted, 4 subnets. 3 Masks
C 10.10.10.0/30 is directly connected, FastEthernet0/1
O 10.10.13.0/25 [110/4576] via 10.10.10.1, 02:53:11, FastEthernet0/1
C 10.10.10.16/30 is directly connected, FastEthernet0/24
O 10.10.13.144/28 [110/110] via 10.10.10.1, 03:51:21, FastEthernet0/1

```

```
B* 0.0.0.0/0 [20/0] via 10.10.10.18, 02:17:53
```

- A. host route
- B. default route
- C. floating static route
- D. network route

**Answer: B**

### Question 11

Refer to the exhibit. 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)#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)#interface gi1/1
R2(config-if)#ip address 192.168.0.2 255.255.255.0

R2(config)#router bgp 65001
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 10.1.1.0 255.255.255.0 192.168.0.1
```

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

**Answer: B**

### Question 12

Refer to the exhibit.

```
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,
      o - ODR, P - periodic downloaded static route, H - NHRP, I – LISP

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
     209.165.201.0/27 is subnetted, 1 subnets
S     209.165.201.0 [1/0] via 209.165.202.130
```

Which command configures a floating static route to provide a backup to the primary link?

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

**Answer:** D

## OSPF Questions

<https://www.9tut.com/ospf-questions-3>

### Question 1

What is the purpose of the show ip ospf interface command?

- A. displaying OSPF-related interface information
- B. displaying general information about OSPF routing processes
- C. displaying OSPF neighbor information on a per-interface basis
- D. displaying OSPF neighbor information on a per-interface-type basis

**Answer:** A

### Question 2

When OSPF learns multiple paths to a network, how does it select a route?

- A. It multiple the active K value by 256 to calculate the route with the lowest metric.
- B. For each existing interface, it adds the metric from the source router to the destination to calculate the route with the lowest bandwidth.
- C. It divides a reference bandwidth of 100 Mbps by the actual bandwidth of the existing interface to calculate the router with the lowest cost.
- D. It count the number of hops between the source router and the destination to determine the router with the lowest metric

**Answer:** C

### **Question 3**

A user configured OSPF and advertised the Gigabit Ethernet interface in OSPF. By default, which type of OSPF network does this interface belong to?

- A. point-to-multipoint
- B. point-to-point
- C. broadcast
- D. nonbroadcast

**Answer:** C

### **Question 4**

You have configured a router with an OSPF router ID, but its IP address still reflects the physical interface. Which action can you take to correct the problem in the least disruptive way?

- A. Reload the OSPF process
- B. Reload the router
- C. Save the router configuration
- D. Specify a loopback address

**Answer:** A

### **Question 5**

An engineer configured an OSPF neighbor as a designated router. Which state verifies the designated router is in the proper mode?

- A. Exchange
- B. 2-way
- C. Full
- D. Init

**Answer: C**

**Question 6**

Refer to the exhibit. If OSPF is running on this network, how does Router 2 handle traffic from Site B to 10.10.13.128/25 at Site A?



Router2#**show ip route**

Gateway of last resort is not set

```
10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C 10.10.10.8/30 is directly connected, FastEthernet0/2
C 10.10.10.12/30 is directly connected, FastEthernet0/1
O 10.10.13.0/25 [110/11] via 10.10.10.9, 00:00:02, FastEthernet0/2
      [110/11] via 10.10.10.13, 00:00:02, FastEthernet0/1
C 10.10.10.4/30 is directly connected, FastEthernet0/2
```

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

**Answer: C**

**Question 7**

A user configured OSPF in a single area between two routers. A serial interface connecting R1 and R2 is running encapsulation PPP. By default which OSPF network type is seen on this interface when the user types show ip ospf interface on R1 or R2?

- A. point-to-multipoint
- B. broadcast
- C. point-to-point
- D. non-broadcast

**Answer: C**

**Question 8**

Refer to the exhibit. What does router R1 use as its OSPF router-ID?

```
R1#show ip interface brief
Interface          IP-Address  OK?   Method Status           Protocol
FastEthernet0/0    unassigned  YES   NVRAM  administratively down  down
GigabitEthernet1/0 192.168.0.1 YES   NVRAM  up                up
GigabitEthernet2/0 10.10.1.10  YES   NVRAM  up                up
GigabitEthernet3/0 10.10.10.20 YES   NVRAM  up               up
GigabitEthernet4/0 unassigned  YES   NVRAM  administratively down  down
Loopback0          172.16.15.10 YES   manual
```

- A. 10.10.1.10
- B. 10.10.10.20
- C. 172.16.15.10
- D. 192.168.0.1

**Answer:** C

### Question 9

Refer to the exhibit. The “show ip ospf interface” command has been executed on R1. How is OSPF configured?

```
Designated Router (ID) 10.11.11.11, Interface address 10.10.10.1
Backup Designated router (ID) 10.3.3.3, Interface address 10.10.10.3
Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
oob-resync timeout 40
Hello due in 00:00:08
Supports Link-local Signaling (LLS)
Cisco NSF helper support enabled
IETF NSF helper support enabled
Index 1/1/1, flood queue length 0
Next 0x0(0)/0x0(0)/0x0(0)
Last flood scan length is 1, maximum is 6
Last flood scan time is 0 msec, maximum is 1 msec
Neighbor Count is 3, Adjacent neighbor count is 3
Adjacent with neighbor 10.1.1.4
Adjacent with neighbor 10.2.2.2
Adjacent with neighbor 10.3.3.3 (Backup Designated Router)
Suppress hello for 0 neighbor(s)
```

- A. The interface is not participating in OSPF
- B. A point-to-point network type is configured
- C. The default Hello and Dead timers are in use
- D. There are six OSPF neighbors on this interface

**Answer:** C

## Question 10

R1 has learned route 192.168.12.0/24 via IS-IS, OSPF, RIP and Internal EIGRP. Under normal operating conditions, which routing protocol is installed in the routing table?

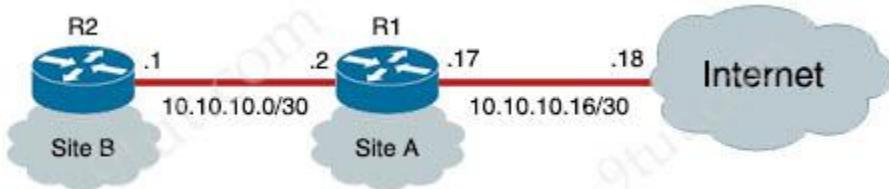
- A. IS-IS
- B. RIP
- C. Internal EIGRP
- D. OSPF

**Answer:** C

## Question 11

Refer to the exhibit. The **default-information originate** command is configured under the R1 OSPF configuration. After testing, workstations on VLAN 20 at Site B cannot reach a DNS server on the Internet.

Which action corrects the configuration issue?



```
R2#show run | b router ospf
router ospf 1
router-id 2.2.2.2
log-adjacency-changes
auto-cost reference-bandwidth 10000
network 10.10.10.1 0.0.0.0 area 0
network 10.10.13.1 0.0.0.0 area 0
```

---

---

```
R2#show ip route
Gateway of last resort is not set
10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C 10.10.10.0/30 is directly connected,
FastEthernet0/1
O 10.10.13.0/25 [110/5766] via
10.10.10.1,00:33:22
C 10.10.10.16/30 is directly connected,
FastEthernet0/24
O 10.10.13.144/28 [110/110] via 10.10.10.1,
```

```
R1#show run | b router ospf
router ospf 1
router-id 1.1.1.1
log-adjacency-changes
auto-cost reference-bandwidth 10000
network 10.10.10.2 0.0.0.0 area 0
default-information originate
```

---

---

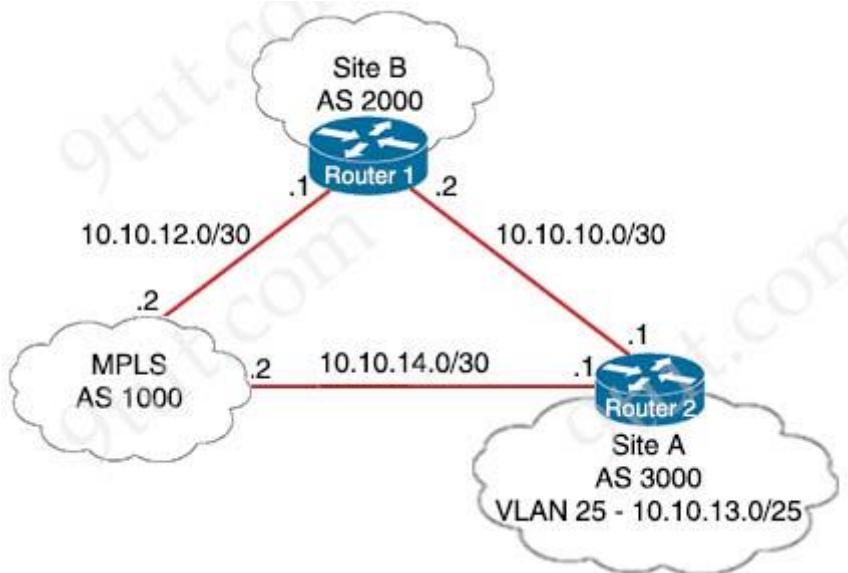
```
R1#show ip route
Gateway of last resort is not set
10.0.0.0/8 is variably subnetted, 4 subnets, 3 masks
C 10.10.10.0/30 is directly connected,
FastEthernet0/1
O 10.10.13.0/25 [110/5766] via
10.10.10.1,00:33:22
C 10.10.10.16/30 is directly connected,
FastEthernet0/24
O 10.10.13.144/28 [110/110] via 10.10.10.1,
```

- A. Add the **default-information originate** command on R2
- B. Add the **always** keyword to the **default-information originate** command on R1
- C. Configure the **ip route 0.0.0.0 0.0.0.0 10.10.10.18** command on R1
- D. Configure the **ip route 0.0.0.0 0.0.0.0 10.10.10.2** command on R2

**Answer:** C

### Question 12

Refer to the exhibit. An engineer is bringing up a new circuit to the MPLS provider on the Gi0/1 interface of Router1. The new circuit uses eBGP and learns the route to VLAN25 from the BGP path.



```

Router1#show ip route
Gateway of last resort is 10.10.11.2 to network 0.0.0.0
  10.0.0.0/8 is variably subnetted, 8 subnets, 4 masks
    C 10.10.10.0/28 is directly connected, GigabitEthernet0/0
    C 10.10.11.0/30 is directly connected, FastEthernet2/0
    O 10.10.13.0/25 [110/2] via 10.10.10.1,00:00:32, GigabitEthernet0/0
    O 10.10.13.128/28 [110/2] via 10.10.10.1,00:00:32, GigabitEthernet0/0
    O 10.10.13.144/28 [110/2] via 10.10.10.1,00:00:32, GigabitEthernet0/0
    O 10.10.13.160/29 [110/2] via 10.10.10.1,00:00:32, GigabitEthernet0/0
    O 10.10.13.208/30 [110/2] via 10.10.10.1,00:00:32, GigabitEthernet0/0
    O 10.10.13.252/30 [110/2] via 10.10.10.1,00:00:32, GigabitEthernet0/0
  S* 0.0.0.0/0 [1/0] via 10.10.11.2
  
```

What is the expected behavior for the traffic flow for route 10.10.13.0/25?

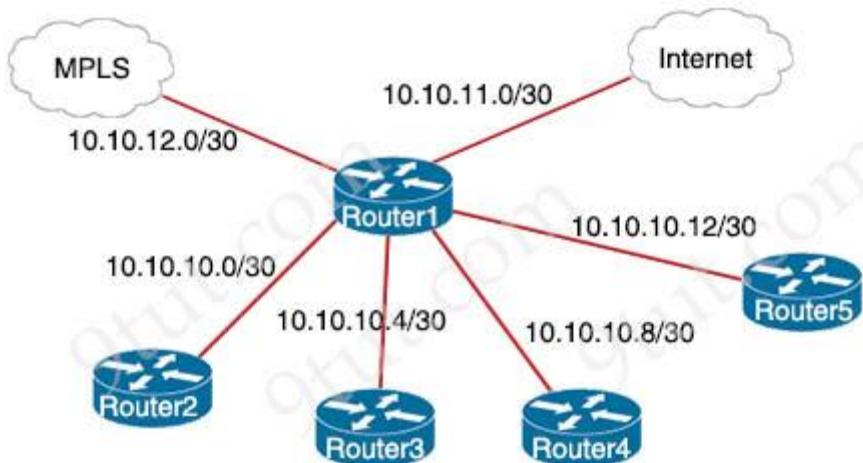
- A. Traffic to 10.10.13.0.25 is load balanced out of multiple interfaces
- B. Route 10.10.13.0/25 is updated in the routing table as being learned from interface Gi0/1

- C. Traffic to 10.10.13.0/25 is symmetrical
- D. Route 10.10.13.0/25 learned via the Gi0/0 interface remains in the routing table

**Answer: B**

### Question 13

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



```

Router1#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 10.10.12.2,03:32:14
  209.165.201.0/27 is subnetted, 1 subnets
B     209.165.201.0 [20/0] via 10.10.12.2,02:26:53
  209.165.202.0/27 is subnetted, 1 subnets
B     209.165.202.128 [20/0] via 10.10.12.2,02:46:03
  10.0.0.0/8 is variably subnetted, 10 subnets, 4 masks
O     10.10.13.0/25 [110/2] via 10.10.10.1,00:00:04, GigabitEthernet0/0
O     10.10.13.128/28 [110/2] via 10.10.10.5,00:00:12, GigabitEthernet0/1
O     10.10.13.144/28 [110/2] via 10.10.10.9,00:01:57, GigabitEthernet0/2
O     10.10.13.160/29 [110/2] via 10.10.10.5,00:00:12, GigabitEthernet0/1
O     10.10.13.208/29 [110/2] via 10.10.10.13,00:01:57, GigabitEthernet0/3
S*   0.0.0.0/0 [1/0] via 10.10.11.2
  
```

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

**Answer: B**

## OSPF Questions 2

<https://www.9tut.com/ospf-questions-2-2>

### Question 1

Refer to the exhibit. Which configuration issue is preventing the OSPF neighbor relationship from being established between the two routers?



<pre>R1#show running-config Building configuration... ! interface GigabitEthernet1/0 mtu 1600 ip address 192.168.0.1 255.255.255.252 negotiation auto ! router ospf 1 router-id 1.1.1.1 passive-interface default no passive-interface GigabitEthernet1/0 network 192.168.0.1 0.0.0.0 area 0 !</pre>	<pre>R2#show running-config Building configuration... ! interface GigabitEthernet2/0 ip address 192.168.0.2 255.255.255.252 negotiation auto ! router ospf 1 router-id 2.2.2.2 passive-interface default no passive-interface GigabitEthernet2/0 network 192.168.0.2 0.0.0.0 area 0 !</pre>
--	---

- A. R2 is using the passive-interface default command
- B. R1 has an incorrect network command for interface Gi1/0
- C. R2 should have its network command in area 1
- D. R1 interface Gi1/0 has a larger MTU size

### Answer: D

### Question 2

Which two minimum parameters must be configured on an active interface to enable OSPFv2 to operate? (Choose two)

- A. OSPF area
- B. OSPF MD5 authentication key
- C. IPv6 address
- D. OSPF process ID
- E. OSPF stub flag

**Answer:** A D

### Question 3

Refer to the exhibit. Refer to the exhibit. After the configuration is applied, the two routers fail to establish an OSPF neighbor relationship. what is the reason for the problem?



```
Router1(config)#interface GigabitEthernet1/1
Router1(config-if)#description ***Connection to
Router2***
Router1(config-if)#ip address 10.10.10.1
255.255.255.252
Router1(config-if)#ip ospf hello-interval 5
Router1(config)#router ospf 1000
Router1(config-router)#router-id 1.1.1.1
Router1(config-router)#network 10.10.10.0
0.0.0.3 area 0
```

```
Router2(config)#interface GigabitEthernet1/1
Router2(config-if)#description ***Connection to
Router1***
Router2(config-if)#ip address 10.10.10.2
255.255.255.252
Router2(config)#router ospf 1001
Router2(config-router)#router-id 2.2.2.2
Router2(config-router)#network 10.10.10.0 0.0.0.3
area 0
Router2(config-router)#passive-interface default
Router2(config-router)#no passive-interface
GigabitEthernet1/1
```

- A. The OSPF router IDs are mismatched
- B. Router2 is using the default hello timer
- C. The network statement on Router1 is misconfigured
- D. The OSPF process IDs are mismatched

**Answer:** B

### Question 4

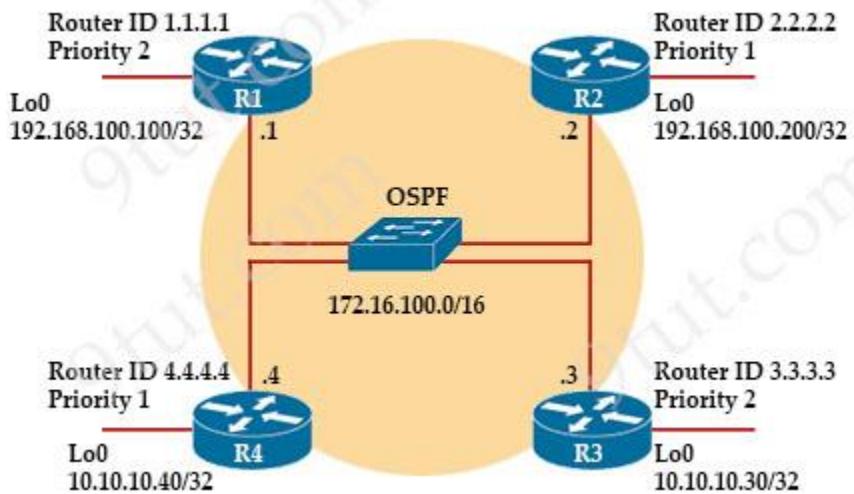
Which step in the link-state routing process is described by a router sending Hello packets out all of the OSPF-enabled interfaces?

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

**Answer:** B

### Question 5

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.

**Answer:** A

### Question 6

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

```
R1#show ip ospf int gi0/0
```

Gig0/0/0 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-MTID	Cost	Disabled	Shutdown	Topology Name
---------------	------	----------	----------	---------------

0	1	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

oob-resync timeout 40

Hello due in 00:00:05

```
R2#show ip ospf int gi0/0
```

Gig0/0/0 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 40, Retransmit 5

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

**Answer:** C (?)

### **Question 7**

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

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

Gateway of last resort is not set

C 1.0.0.0/8 is directly connected, Loopback0  
10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks  
O 10.0.1.3/32 [110/100] via 10.0.1.3, 00:40:07, Serial0  
C 10.0.1.0/24 is directly connected, Serial0  
O 10.0.1.5/32 [110/5] via 10.0.1.50, 00:40:07, Serial0  
O 10.0.1.4/32 [110/10] via 10.0.1.4, 00:40:07, Serial0

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

**Answer:** C

### Question 8

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

**Answer:** D E

## EIGRP Questions

<https://www.9tut.com/eigrp-questions-2>

### Question 1

A router running EIGRP has learned the same route from two different paths. Which parameter does the router use to select the best path?

- A. cost
- B. administrative distance
- C. metric
- D. as-path

**Answer:** C

### **Question 2**

Which two actions influence the EIGRP route selection process? (Choose two)

- A. The router calculates the reported distance by multiplying the delay on the exiting interface by 256
- B. The router calculates the best backup path to the destination route and assigns it as the feasible successor
- C. The router calculates the feasible distance of all paths to the destination route
- D. The advertised distance is calculated by a downstream neighbor to inform the local router of the bandwidth on the link
- E. The router must use the advertised distance as the metric for any given route

**Answer:** B C

### **Question 3**

By default, how does EIGRP determine the metric of a route for the routing table?

- A. It uses the bandwidth and delay values of the path to calculate the route metric
- B. It uses a default metric of 10 for all routes that are learned by the router
- C. It uses a reference Bandwidth and the actual bandwidth of the connected link to calculate the route metric
- D. It counts the number of hops between the receiving and destination routers and uses that value as the metric

**Answer:** A

### **Question 4**

Refer to the exhibit.

10.0.0.0/24 is subnetted, 1 subnets
C 10.0.0.0 is directly connected, FastEthernet0/1
C 172.16.0.0/16 is directly connected, FastEthernet0/0
D 192.168.0.0/24 [90/30720] via 172.16.0.2, 00:00:04, FastEthernet0/0

Which route type does the routing protocol Code **D** represent in the output?

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

**Answer:** D

## NAT Questions

<https://www.9tut.com/nat-questions>

### Question 1

Which statement about the nature of NAT overload is true?

- A. applies a one-to-many relationship to internal IP addresses
- B. applies a one-to-one relationship to internal IP addresses
- C. applies a many-to-many relationship to internal IP addresses
- D. can be configured only on Gigabit interface

**Answer:** A

### Question 2

Refer to the exhibit. An engineer configured NAT translations and has verified that the configuration is correct. Which IP address is the source IP?

```
R1#show ip nat translations
Pro Inside global      Inside local      Outside local      Outside global
tcp  172.23.104.3:43268 10.4.4.4:43268  172.23.103.10:23  172.23.103.10:23
tcp  172.23.104.4:45507 10.4.4.5:45507  172.23.103.10:80  172.23.103.10:80
```

- A. 10.4.4.4
- B. 10.4.4.5
- C. 172.23.103.10
- D. 172.23.104.4

**Answer:** C

### Question 3

Which keyword in a NAT configuration enables the use of one outside IP address for multiple inside hosts?

- A. source
- B. static
- C. pool
- D. overload

**Answer:** D

### Question 4

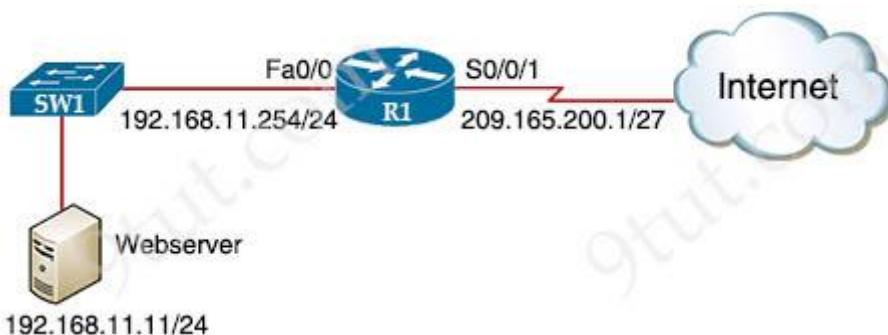
Which type of address is the public IP address of a NAT device?

- A. outside global
- B. outside local
- C. inside global
- D. inside local
- E. outside public
- F. inside public

**Answer:** C

### Question 5

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

**Answer:** A

### Question 6

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?

#### Option 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  
255.255.255.0  
ip nat outside destination list 1  
pool mypool  
interface g1/1  
ip nat inside  
interface g1/2  
ip nat outside
```

#### Option 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  
0.0.0.255  
ip nat outside destination list 1  
pool mypool  
interface g1/1  
ip nat inside  
interface g1/2  
ip nat outside
```

#### Option 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
```

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

**Answer:** C

## NTP Questions

<https://www.9tut.com/ntp-questions-2>

### Question 1

Which command should you enter to configure a device as an NTP server?

- A. ntp server
- B. ntp peer

- C. ntp authenticate
- D. ntp master

**Answer:** D

### **Question 2**

Which two pieces of information can you determine from the output of the **show ntp status** command? (Choose two)

- A. whether the NTP peer is statically configured
- B. the IP address of the peer to which the clock is synchronized
- C. the configured NTP servers
- D. whether the clock is synchronized
- E. the NTP version number of the peer

**Answer:** B D

### **Question 3**

Which two tasks must be performed to configure NTP to a trusted server in client mode on a single network device? (Choose two)

- A. Enable NTP authentication
- B. Verify the time zone
- C. Disable NTP broadcasts
- D. Specify the IP address of the NTP server
- E. Set the NTP server private key

**Answer:** A D

## **Syslog Questions**

<https://www.9tut.com/syslog-questions-2>

### **Question 1**

What will happen if you configure the logging trap debug command on a router?

- A. It causes the router to send messages with lower severity levels to the syslog server
- B. It causes the router to send all messages with the severity levels Warning, Error, Critical, and Emergency to the syslog server

- C. It causes the router to send all messages to the syslog server
- D. It causes the router to stop sending all messages to the syslog server

**Answer:** C

### **Question 2**

If a notice-level messaging is sent to a syslog server, which event has occurred?

- A. A network device has restarted
- B. An ARP Inspection has failed
- C. A routing instance has flapped
- D. A debug operation is running

**Answer:** C

### **Question 3**

What event has occurred if a router sends a notice level message to a syslog server?

- A. A TCP connection has been torn down
- B. An ICMP connection has been built
- C. An interface line has changed status
- D. A certificate has expired

**Answer:** C

## **HSRP Questions**

<https://www.9tut.com/hsrp-questions-2>

### **Question 1**

Which command must you enter to guarantee that an HSRP router with higher priority becomes the HSRP primary router after it is reloaded?

- A. standby 10 preempt
- B. standby 10 version 1
- C. standby 10 priority 150
- D. standby 10 version 2

**Answer: A**

**Question 2**

Which command should you enter to verify the priority of a router in an HSRP group?

- A. show hsrp
- B. show sessions
- C. show interfaces
- D. show standby

**Answer: D**

**Question 3**

Which MAC address is recognized as a VRRP virtual address?

- A. 0000.5E00.010a
- B. 0005.3711.0975
- C. 0000.0C07.AC99
- D. 0007.C070.AB01

**Answer: A**

**Question 4**

Which two outcomes are predictable behaviors for HSRP? (Choose two)

- A. The two routers share a virtual IP address that is used as the default gateway for devices on the LAN
- B. The two routers negotiate one router as the active router and the other as the standby router
- C. Each router has a different IP address both routers act as the default gateway on the LAN, and traffic is load balanced between them
- D. The two routers synchronize configurations to provide consistent packet forwarding
- E. The two routers share the same IP address, and default gateway traffic is load-balanced between them

**Answer: A B**

**Question 5**

How does HSRP provide first hop redundancy?

- A. It load-balances traffic by assigning the same metric value to more than one route to the same destination in the IP routing table
- B. It load-balances Layer 2 traffic along the path by flooding traffic out all interfaces configured with the same VLAN
- C. It forwards multiple packets to the same destination over different routed links and data path
- D. It uses a shared virtual MAC and a virtual IP address to a group of routers that serve as the default gateway for hosts on a LAN

**Answer:** D

### **Question 6**

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

**Answer:** D

### **Question 7**

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

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

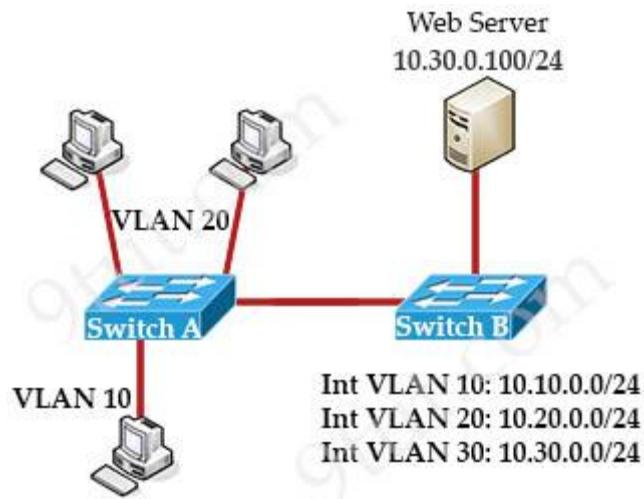
**Answer:** D

## **Access-list Questions**

<https://www.9tut.com/access-list-questions-2>

### **Question 1**

Refer to the exhibit. A network engineer must block access for all computers on VLAN 20 to the web server via HTTP. All other computers must be able to access the web server. Which configuration when applied to switch A accomplishes this task?



A.

```
config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
int vlan 100
ip access-group wwwblock in
```

B.

```
config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
permit ip any any
int vlan 20
ip access-group wwwblock in
```

C. config t

```
ip access-list extended wwwblock
permit ip any any
deny tcp any host 10.30.0.100 eq 80
int vlan 30
ip access-group wwwblock in
```

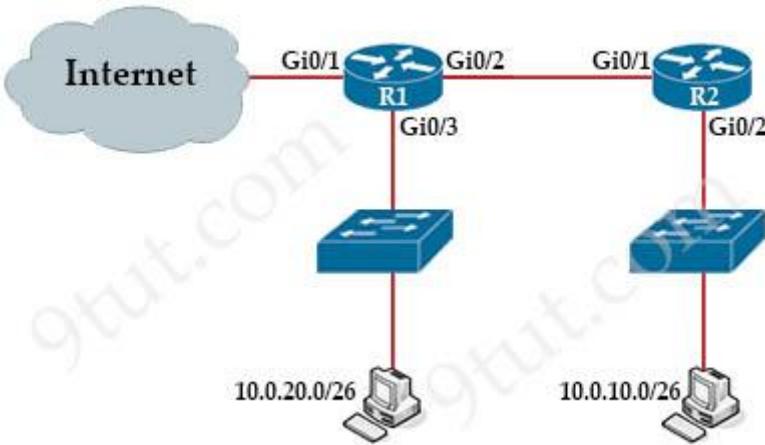
D.

```
config t
ip access-list extended wwwblock
deny tcp any host 10.30.0.100 eq 80
int vlan 20
ip access-group wwwblock in
```

**Answer:** B

**Question 2**

Refer to the exhibit. An extended ACL has been configured and applied to router R2. The configuration failed to work as intended. Which two changes stop outbound traffic on TCP ports 25 and 80 to 10.0.20.0/26 from the 10.0.10.0/26 subnet while still allowing all other traffic? (Choose two)



```
R2#config t  
R2(config)#access-list 101 deny tcp 10.0.20.0 0.0.0.63 10.0.10.0 0.0.0.63 eq smtp  
R2(config)#access-list 101 deny tcp 10.0.20.0 0.0.0.63 10.0.10.0 0.0.0.63 eq www  
R2(config)#int gi0/2  
R2(config-if)#ip access-group 101 in
```

- A. Add a “permit ip any any” statement to the beginning of ACL 101 for allowed traffic
- B. Add a “permit ip any any” statement at the end of ACL 101 for allowed traffic
- C. The source and destination IPs must be swapped in ACL 101
- D. The ACL must be configured the Gi0/2 interface inbound on R1
- E. The ACL must be moved to the Gi0/1 interface outbound on R2

**Answer:** B C

### Question 3

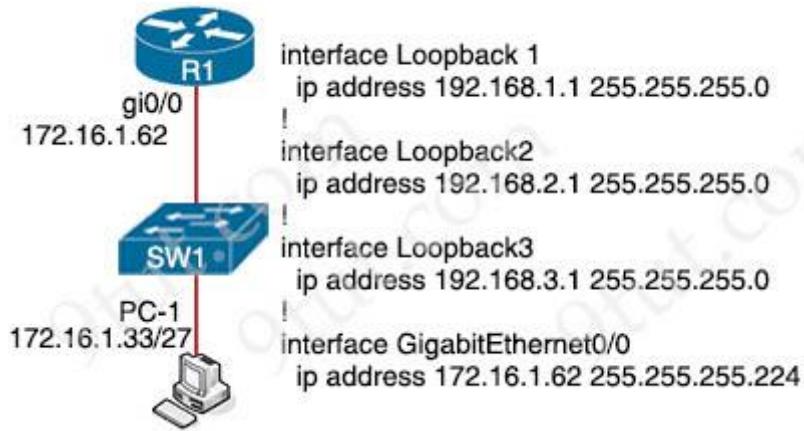
While examining excessive traffic on the network, it is noted that all incoming packets on an interface appear to be allowed even though an IPv4 ACL is applied to the interface. Which two misconfigurations cause this behavior? (Choose two)

- A. The packets fail to match any permit statement
- B. A matching permit statement is too high in the access list
- C. A matching permit statement is too broadly defined
- D. The ACL is empty
- E. A matching deny statement is too high in the access list

**Answer:** B C

## Question 4

Refer to the exhibit. What configuration on R1 denies SSH access from PC-1 to any R1 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

C. line vty 0 15  
access-class 100 in  
access-list 100 deny tcp host 172.16.1.33 any eq 23  
access-list 100 permit ip any any

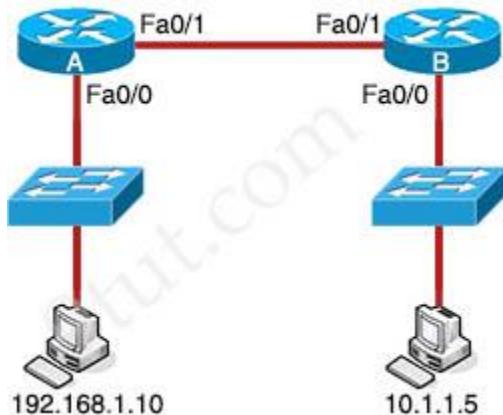
interface GigabitEthernet0/0  
ip access-group 100 in

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

## Answer: A

## Question 5

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 0.0.0.255 host 10.1.1.5
access-list 100 permit ip any any
```

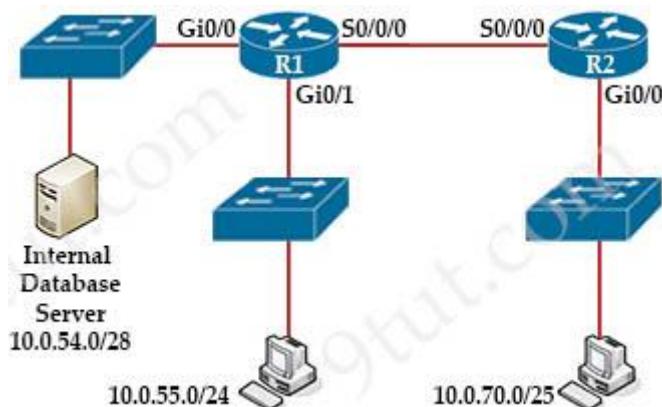
Where should the administrator place this ACL for the most efficient use of network resources?

- 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

**Answer:** A

### Question 6

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

**Answer:** A D

### Question 7

Refer to the exhibit.

```
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 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?

- 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

**Answer:** D

## AAA Questions

<https://www.9tut.com/aaa-questions-2>

### Question 1

AAA stands for authentication, authorization, and accounting.

- A. False
- B. True

**Answer:** B

## **Question 2**

Which effect does the **aaa new-model** configuration command have?

- A. It configures the device to connect to a RADIUS server for AAA.
- B. It configures a local user on the device.
- C. It associates to RADIUS server to an AAA group.
- D. It enables AAA services on the device.

**Answer:** D

## **Question 3**

What is the primary difference between AAA authentication and authorization?

- A. Authentication verifies a username and password, and authorization handles the communication between the authentication agent and the user database
- B. Authentication identifies a user who is attempting to access a system, and authorization validates the users password
- C. Authentication identifies and verifies a user who is attempting to access a system, and authorization controls the tasks the user can perform
- D. Authentication controls the system processes a user can access and authorization logs 9ie activities the user initiates

**Answer:** C

## **Question 4**

Refer to the exhibit. Which password must an engineer use to enter the enable mode?

```
Atlanta#config t
Atlanta(config)#aaa new-model
Atlanta(config)#aaa authentication login default local
Atlanta(config)#line vty 0 4
Atlanta(config-line)#login authentication default
Atlanta(config-line)#exit
Atlanta(config)#username ciscoadmin password adminadmin123
Atlanta(config)#username ciscoadmin privilege 15
Atlanta(config)#enable password cisco123
Atlanta(config)#enable secret testing1234
Atlanta(config)#end
```

- A. adminadmin123
- B. default

- C. testing1234
- D. cisco123

**Answer:** C

### **Question 5**

What is a difference between RADIUS and TACACS+?

- A. RADIUS is most appropriate for dial authentication, but TACACS+ can be used for multiple types of authentication
- B. TACACS+ encrypts only password information and RADIUS encrypts the entire payload
- C. TACACS+ separates authentication and authorization, and RADIUS merges them
- D. RADIUS logs all commands that are entered by the administrator, but TACACS+ logs only start, stop, and interim commands

**Answer:** C

### **Question 6**

How do AAA operations compare regarding user identification, user services and access control?

- A. Authorization provides access control and authentication tracks user services
- B. Authentication identifies users and accounting tracks user services
- C. Accounting tracks user services, and authentication provides access control
- D. Authorization identifies users and authentication provides access control

**Answer:** B

## **Security Questions**

<https://www.9tut.com/security-questions-3>

### **Question 1**

An email user has been lured into clicking a link in an email sent by their company's security organization. The webpage that opens reports that it was safe but the link could have contained malicious code. Which type of security program is in place?

- A. Physical access control
- B. Social engineering attack
- C. brute force attack
- D. user awareness

**Answer:** D

**Question 2**

An engineer is asked to protect unused ports that are configured in the default VLAN on a switch. Which two steps will fulfill the request? (Choose two)

- A. Configure the ports in an EtherChannel
- B. Administratively shut down the ports
- C. Configure the port type as access and place in VLAN 99
- D. Configure the ports as trunk ports
- E. Enable the Cisco Discovery Protocol

**Answer:** B C

**Question 3**

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

**Question 4**

Which two must be met before SSH can operate normally on a Cisco IOS switch? (Choose two)

- A. The switch must be running a k9 (crypto) IOS image
- B. The ip domain-name command must be configured on the switch
- C. IP routing must be enabled on the switch
- D. A console password must be configured on the switch
- E. Telnet must be disabled on the switch

**Answer:** A B

**Question 5**

When a site-to-site VPN is used, which protocol is responsible for the transport of user data?

- A. IKEv2
- B. IKEv1
- C. IPsec
- D. MD5

**Answer:** C

### **Question 6**

Which set of action satisfy the requirement for multi-factor authentication?

- A. The user swipes a key fob, then clicks through an email link
- B. The user enters a user name and password, and then clicks a notification in an authentication app on a mobile device
- C. The user enters a PIN into an RSA token, and then enters the displayed RSA key on a login screen
- D. The user enters a user name and password and then re-enters the credentials on a second screen

**Answer:** B

### **Question 7**

Which command prevents passwords from being stored in the configuration as plaintext on a router or switch?

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

**Answer:** B

### **Question 8**

Refer to the exhibit. An administrator configures four switches for local authentication using passwords that are stored in a cryptographic hash. The four switches must also support SSH access for administrators to manage the network infrastructure. Which switch is configured correctly to meet these requirements?

```
SW1(config-line)#line vty 0 15  
SW1(config-line)#no login local  
SW1(config-line)#password cisco
```

```
SW2(config)#username admin1 password abcd1234  
SW2(config)#username admin2 password abcd1234
```

```
SW2(config-line)#line vty 0 15
SW2(config-line)#login local

SW3(config)#username admin1 secret abcd1234
SW3(config)#username admin2 secret abcd1234
SW3(config-line)#line vty 0 15
SW3(config-line)#login local

SW4(config)#username admin1 password abcd1234
SW4(config)#username admin2 password abcd1234
SW4(config-line)#line console 0
SW4(config-line)#login local
```

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

**Answer:** C

### **Question 9**

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

**Answer:** A

### **Question 10**

In which two ways does a password manager reduce the chance of a hacker stealing a user's 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

**Answer:** C E

### **Question 11**

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

**Answer:** C D

## **Security Questions 2**

<https://www.9tut.com/security-questions-2-2>

### **Question 1**

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 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
```

**Answer:** D

### **Question 2**

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

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

**Answer:** C

### **Question 3**

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

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

**Answer:** D

### **Question 4**

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

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

**Answer:** D

## **Question 5**

Which device performs stateful inspection of traffic?

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

**Answer:** D

## **Question 6**

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

**Answer:** A C

## **Question 7**

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

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

**Answer:** A

## **Question 8**

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

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

**Answer:** C

## DAI Questions

<https://www.9tut.com/dai-questions>

### Question 1

Refer to the exhibit. What is the effect of this configuration?

```
ip arp inspection vlan 2
interface fastethernet 0/1
switchport mode access
switchport access vlan 2
```

- A. All ARP packets are dropped by the switch
- B. Egress traffic is passed only if the destination is a DHCP server.
- C. All ingress and egress traffic is dropped because the interface is untrusted
- D. The switch discards all ingress ARP traffic with invalid MAC-to-IP address bindings

**Answer:** D

### Question 2

Refer to the exhibit. What is the effect of this configuration?

```
ip arp inspection vlan 2
interface fastethernet 0/1
switchport mode access
switchport access vlan 2
```

- A. The switch port interface trust state becomes untrusted
- B. The switch port remains administratively down until the interface is connected to another switch
- C. Dynamic ARP inspection is disabled because the ARP ACL is missing
- D. The switch port remains down until it is configured to trust or untrust incoming packets

**Answer:** A

## IPv6 Questions

<https://www.9tut.com/ipv6-questions-5>

### Question 1

Which command is used to configure an IPv6 static default route?

- A. ipv6 route ::/0 interface next-hop
- B. ipv6 route default interface next-hop
- C. ipv6 route 0.0.0.0/0 interface next-hop
- D. ip route 0.0.0.0/0 interface next-hop

**Answer:** A

### Question 2

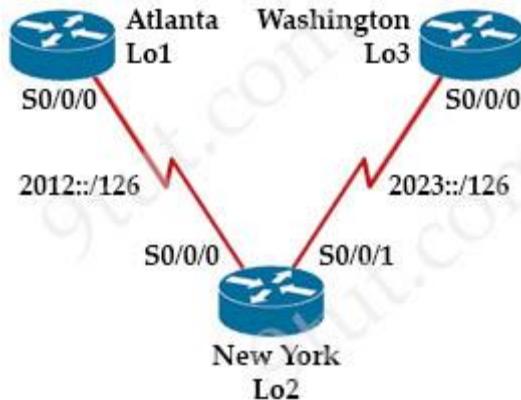
Which command verifies whether any IPv6 ACLs are configured on a router?

- A. show ipv6 interface
- B. show access-list
- C. show ipv6 access-list
- D. show ipv6 route

**Answer:** C

### Question 3

Refer to the exhibit. The New York router is configured with static routes pointing to the Atlanta and Washington sites. Which two tasks must be performed so that the Serial0/0/0 interfaces on the Atlanta and Washington routers can reach one another? (Choose two)



Configured interfaces:

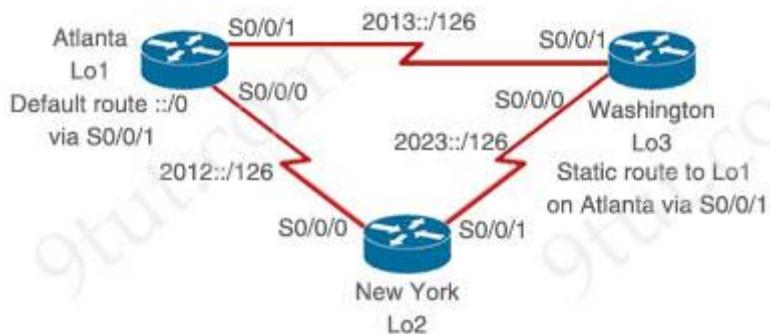
Atlanta:	New York:	Washington:
S0/0/0: 2012::1/126 Loopback1: 2000::1/128	S0/0/0: 2012::2/126 S0/0/1: 2023::2/126 Loopback2:2000::2/128	S0/0/0: 2023::3/126 Loopback3: 2000::3/128

- A. Configure the ipv6 route 2012::/126 2023::1 command on the Washington router
- B. Configure the ipv6 route 2023::/126 2012::1 command on the Atlanta router
- C. Configure the ipv6 route 2012::/126 s0/0/0 command on the Atlanta router
- D. Configure the ipv6 route 2023::/126 2012::2 command on the Atlanta router
- E. Configure the ipv6 route 2012::/126 2023::2 command on the Washington router

**Answer:** D E

#### Question 4

Refer to exhibit. An engineer is configuring the New York router to reach the Lo1 interface of the Atlanta router using interface S0/0/0 as the primary path. Which two commands must be configured on the New York router so that it can reach the Lo1 interface of the Atlanta router via Washington when the link between New York and Atlanta goes down? (Choose two)



Configured interfaces:

Atlanta:	New York:	Washington:
S0/0/0: 2012::1/126	S0/0/0: 2012::2/126	S0/0/0: 2023::3/126
S0/0/1: 2013::1/126	S0/0/1: 2023::2/126	S0/0/1: 2013::3/126
Loopback1: 2000::1/128	Loopback2: 2000::2/128	Loopback3: 2000::3/128

- A. ipv6 route 2000::1/128 2012::1
- B. ipv6 route 2000::1/128 2012::1 5
- C. ipv6 route 2000::1/128 2012::2
- D. ipv6 route 2000::1/128 2023::2 5
- E. ipv6 route 2000::1/128 2023::3 5

**Answer:** A E

#### Question 5

Which IPv6 address type provides communication between subnets and cannot route on the Internet?

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

**Answer: B**

**Question 6**

Which command automatically generates an IPv6 address from a specified IPv6 prefix and MAC address of an interface?

- A. ipv6 address dhcp
- B. ipv6 address 2001:068:5:112::64 eui-64
- C. ipv6 address autoconfig
- D. ipv6 address 2001:068:5:112:2/64 link-local

**Answer: C**

**Question 7**

Which IPv6 address block sends packets to a group address rather than a single address?

OR

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::/8

**Answer: D**

**Question 8**

When configuring IPv6 on an interface, which two IPv6 multicast groups are joined? (Choose two)

- A. 2000::/3
- B. 2002::5
- C. FC00::/7
- D. FF02::1
- E. FF02::2

**Answer:** D E

**Question 9**

Which action must be taken to assign a global unicast IPv6 address on an interface that is derived from the MAC address of that interface?

- A. configure a stateful DHCPv6 server on the network
- B. enable SLAAC on an interface
- C. disable the EUI-64 bit process
- D. explicitly assign a link-local address

**Answer:** B

**Question 10**

What is the expected outcome when an EUI-64 address is generated?

- A. The seventh bit of the original MAC address of the interface is inverted
- B. The interface ID is configured as a random 64-bit value
- C. The characters FE80 are inserted at the beginning of the MAC address of the interface
- D. The MAC address of the interface is used as the interface ID without modification

**Answer:** A

**Question 11**

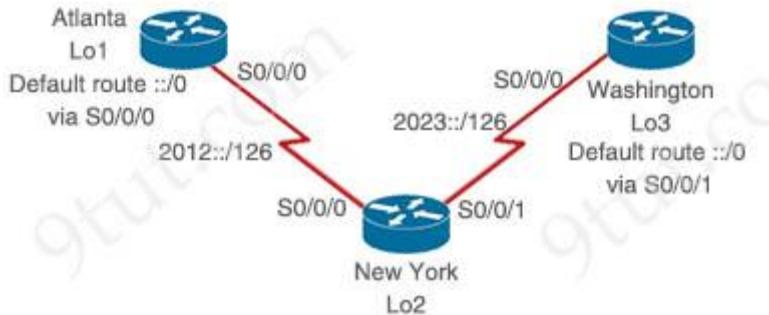
Which type of IPv6 address is publicly routable in the same way as IPv4 public addresses?

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

**Answer:** D

**Question 12**

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)



Configured interfaces:

<b>Atlanta:</b> S0/0/0: 2012::1/126 Loopback1: 2000::1/128	<b>New York:</b> S0/0/0: 2012::2/126 S0/0/1: 2023::2/126 Loopback2: 2000::2/128	<b>Washington:</b> S0/0/0: 2023::3/126 Loopback3: 2000::3/128
--	--	---

- 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

**Answer:** A B

### Question 13

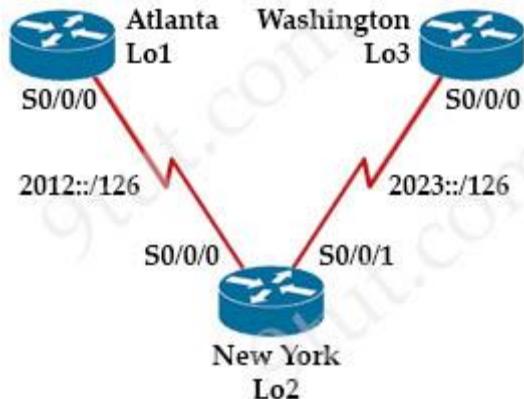
Which IPv6 address block forwards packets to a multicast address rather than a unicast address?

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

**Answer:** D

### Question 14

Refer to the exhibit. An engineer configured the New York router with static routes that point to the Atlanta and Washington sites. Which 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?



Configured router IPv6 interfaces:

<b>Atlanta:</b> S0/0/0: 2012::1/126 Loopback1: 2000::1/128	<b>New York:</b> S0/0/0: 2012::2/126 S0/0/1: 2023::2/126 Loopback2: 2000::2/128	<b>Washington:</b> S0/0/0: 2023::3/126 Loopback3: 2000::3/128
--	--	---

- A. ip route 0.0.0.0.0.0 Serial 0/0/0
- B. ipv6 route 0/0 Serial 0/0/0
- C. ipv6 route ::/0 Serial 0/0/0
- D. ipv6 route ::/0 Serial 0/0/1
- E. ipv6 route ::/0 2000::2

**Answer:** C

## DNS Questions

<https://www.9tut.com/dns-questions-2>

### Question 1

What are two roles of Domain Name Services (DNS)? (Choose two)

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

**Answer:** A B

## **Question 2**

Which command must be present in a Cisco Device configuration to enable the device to resolve an FQDN?

- A. ip host
- B. ip name-server
- C. ip domain-lookup
- D. ip domain-name

**Answer:** C

## **Question 3**

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

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

**Answer:** B

## **Question 4**

How does a router behave when configured with the default DNS lookup settings, and a URL is entered on the CLI?

- A. prompts the user to specify the desired IP address.
- B. initiates a ping request to the URL.
- C. continuously attempts to resolve the URL until the command is cancelled.
- D. attempts to query a DNS server on the network.

**Answer:** D

# **QoS Questions**

<https://www.9tut.com/qos-questions-2>

## **Question 1**

Which feature or protocol determines whether the QoS on the network is sufficient to support IP services?

- A. LLDP
- B. CDP
- C. IP SLA
- D. EEM

**Answer:** C

### **Question 2**

Which two actions are performed by the Weighted Random Early Detection mechanism? (Choose two)

- A. It drops lower-priority packets before it drops higher-priority packets
- B. It can identify different flows with a high level of granularity
- C. It guarantees the delivery of high-priority packets
- D. It can mitigate congestion by preventing the queue from filling up
- E. It supports protocol discovery

**Answer:** A D

### **Question 3**

Which two QoS tools can provide congestion management? (Choose two)

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

**Answer:** A D

### **Question 4**

Which option is the main function of congestion management?

- A. discarding excess traffic
- B. queuing traffic based on priority
- C. classifying traffic
- D. providing long-term storage of buffered data

**Answer:** B

### **Question 5**

What does traffic shaping do to reduce congestion in a network?

- A. buffers and queues packets
- B. buffers without queuing packets
- C. queues without buffering packets
- D. drops packets

**Answer:** A

### **Question 6**

Which feature can you implement to reserve bandwidth for VoIP calls across the call path?

- A. round robin
- B. CBWFQ
- C. PQ
- D. RSVP

**Answer:** D

### **Question 7**

What is the purpose of traffic shaping?

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

**Answer:** B

## **Port Security Questions**

<https://www.9tut.com/port-security-questions-3>

### **Question 1**

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

**Answer:** C

### **Question 2**

Refer to the exhibit. Which port security violation mode is configured on interface Fa0/1?

```
%PM-4-ERR_DISABLE: psecure-violation error detected on Fa0/1, putting Fa0/1 in err-disable state  
%PORT_SECURITY-2-PSECURE_VIOLATION: Security violation occurred, caused by MAC address 00AA.1AB9.D22F on port FastEthernet0/1  
%LINKPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down  
%LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to down
```

- A. protect
- B. shutdown VLAN
- C. shutdown
- D. restrict

**Answer:** C

### **Question 3**

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 restrict
- C. switchport port-security violation protect
- D. switchport port-security violation shutdown

**Answer:** B

## **Wireless Questions**

<https://www.9tut.com/wireless-questions-2>

### **Question 1**

An engineer must configure a WLAN using the strongest encryption type for WPA2-PSK. Which cipher fulfills the configuration requirement?

- A. WEP
- B. RC4
- C. AES
- D. TKIP

**Answer:** C

### **Question 2**

Which unified access point mode continues to serve wireless clients after losing connectivity to the Cisco Wireless LAN Controller?

- A. sniffer
- B. mesh
- C. flex connect
- D. local

**Answer:** C

### **Question 3**

Which QoS Profile is selected in the GUI when configuring a voice over WLAN deployment?

- A. Bronze
- B. Platinum
- C. Silver
- D. Gold

**Answer:** B

### **Question 4**

What is a design element when deploying an 802.11b wireless infrastructure?

- A. disabling TPC so that access points can negotiate signal levels with their attached wireless devices.
- B. setting the maximum data rate to 54 Mbps on the Cisco Wireless LAN Controller
- C. allocating non overlapping channels to access points that are in close physical proximity to one another
- D. configuring access points to provide clients with a maximum of 5 Mbps

**Answer: C**

**Question 5**

Which statement about Link Aggregation when implemented on a Cisco Wireless LAN Controller is true?

- A. To pass client traffic two or more ports must be configured
- B. The EtherChannel must be configured in “mode active”
- C. When enabled the WLC bandwidth drops to 500 Mbps
- D. One functional physical port is needed to pass client traffic

**Answer: D**

**Question 6**

Which mode allows access points to be managed by Cisco Wireless LAN Controllers?

- A. autonomous
- B. lightweight
- C. bridge
- D. mobility express

**Answer: B**

**Question 7**

Which type of wireless encryption is used for WPA2 in pre-shared key mode?

- A. TKIP with RC4
- B. RC4
- C. AES-128
- D. AES-256

**Answer: D**

**Question 8**

Which two values or settings must be entered when configuring a new WLAN in the Cisco Wireless LAN Controller GUI? (Choose two)

- A. management interface settings
- B. QoS settings
- C. ip address of one or more access points
- D. SSID
- E. Profile name

**Answer:** D E

**Question 9**

Which feature on the Cisco Wireless LAN Controller when enabled restricts management access from specific networks?

- A. CPU ACL
- B. TACACS
- C. Flex ACL
- D. RADIUS

**Answer:** A

**Question 10**

Which 802.11 frame type is association response?

- A. management
- B. protected frame
- C. control
- D. action

**Answer:** A

**Question 11**

When configuring a WLAN with WPA2 PSK in the Cisco Wireless LAN Controller GUI, which two formats are available to select? (Choose two)

- A. ASCII
- B. base64
- C. binary
- D. decimal
- E. hexadecimal

**Answer:** A E

### **Question 12**

What is a benefit of using a Cisco Wireless LAN Controller?

- A. Central AP management requires more complex configurations
- B. Unique SSIDs cannot use the same authentication method
- C. It supports autonomous and lightweight APs
- D. It eliminates the need to configure each access point individually

**Answer:** D

### **Question 13**

Several new coverage cells are required to improve the Wi-Fi network of an organization. Which two standard designs are recommended? (Choose two)

- A. 5GHz provides increased network capacity with up to 23 nonoverlapping channels,
- B. 5GHz channel selection requires an autonomous access point.
- C. Cells that overlap one another are configured to use nonoverlapping channels.
- D. Adjacent cells with overlapping channels use a repeater access point.
- E. For maximum throughput, the WLC is configured to dynamically set adjacent access points to the same channel.

**Answer:** A C

## **Wireless Questions 2**

<https://www.9tut.com/wireless-questions-2-2>

### **Question 1**

How does CAPWAP communicate between an access point in local mode and a WLC?

- A. The access point must directly connect to the WLC using a copper cable
- B. The access point must not be connected to the wired network, as it would create a loop
- C. The access point must be connected to the same switch as the WLC
- D. The access point has the ability to link to any switch in the network, assuming connectivity to the WLC

**Answer:** D

## **Question 2**

Which WPA3 enhancement protects against hackers viewing traffic on the Wi-Fi network?

- A. TKIP encryption
- B. AES encryption
- C. Scrambled encryption key
- D. SAE encryption

**Answer:** D

## **Question 3**

What is a difference between local AP mode and FlexConnet AP mode?

- A. Local AP mode creates two CAPWAP tunnels per AP to the WLC
- B. FlexConnect AP mode fails to function if me AP loses connectivity with the WLC
- C. FlexConnect AP mode bridges the traffic from the AP to the WLC when local switching is configured
- D. Local AP mode causes the AP to behave as if it were an autonomous AP

**Answer:** A

## **Question 4**

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

**Answer:** B

## **Question 5**

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

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

**Answer: C**

**Question 6**

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

**Answer: D**

**Question 7**

What is a function of Wireless LAN Controller?

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

**Answer: A**

**Question 8**

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

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

**Answer: B**

**Question 9**

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

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

**Answer:** A

## SDN Questions

<https://www.9tut.com/sdn-questions>

### Question 1

Which statement about the Cisco ACI fabric is most accurate?

- A. The APIC is able to enforce security by inserting itself into the data path.
- B. The fabric header carries the EPG from the egress to the ingress leaf switch.
- C. An APIC is a cluster of at least three APIC controllers, providing a single point of management without a single point of failure.
- D. The spine switch rewrites the EPG from ingress to egress when it performs the forwarding proxy function

**Answer:** C

### Question 2

Which API is used in controller-based architectures to interact with edge devices?

- A. overlay
- B. northbound
- C. underlay
- D. southbound

**Answer:** D

### Question 3

What are two characteristics of a controller-based network? (Choose two)

- A. The administrator can make configuration updates from the CLI
- B. It uses northbound and southbound APIs to communicate between architectural layers
- C. It moves the control plane to a central point

- D. It decentralizes the control plane, which allows each device to make its own forwarding decisions
- E. It uses Telnet to report system issues.

**Answer:** B C

**Question 4**

What are two southbound APIs? (Choose two)

- A. Thrift
- B. NETCONF
- C. Open Flow
- D. DSC
- E. CORBA

**Answer:** B C

**Question 5**

Which statement correctly compares traditional networks and controller-based networks?

- A. Only traditional networks offer a centralized control plane
- B. Only traditional networks natively support centralized management
- C. Traditional and controller-based networks abstract policies from device configurations
- D. Only controller-based networks decouple the control plane and the data plane

**Answer:** D

**Question 6**

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

**Answer:** B

**Question 7**

What are two benefits of controller-based networking compared to traditional networking? (Choose two)

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

**Answer:** B E

### **Question 8**

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

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

**Answer:** C

## **DNA Center Questions**

<https://www.9tut.com/dna-center-questions>

### **Question 1**

Which two capacities of Cisco DNA Center make it more extensible? (Choose two)

- A. adapters that support all families of Cisco IOS software
- B. SDKs that support interaction with third-party network equipment
- C. customized versions for small, medium, and large enterprises
- D. REST APIs that allow for external applications to interact natively with Cisco DNA Center
- E. modular design that is upgradable as needed

**Answer:** B D

### **Question 2**

What makes Cisco DNA Center different from traditional network management applications and their management of networks?

- A. It only supports auto-discovery of network elements in a green field deployment.
- B. Its modular design allows someone to implement different versions to meet the specific needs of an organization
- C. It abstracts policy from the actual device configuration
- D. It does not support high availability of management functions when operating in cluster mode

**Answer:** C

**Question 3**

How does Cisco DNA Center gather data from the network?

- A. Network devices use different services like SNMP, syslog, and streaming telemetry to send data to the controller
- B. Devices establish an iPsec tunnel to exchange data with the controller
- C. Devices use the call-home protocol to periodically send data to the controller
- D. The Cisco CU Analyzer tool gathers data from each licensed network device and streams it to the controller

**Answer:** A

**Question 4**

How do traditional campus device management and Cisco DNA Center device management differ in regards to deployment?

- A. Cisco DNA Center device management can deploy a network more quickly than traditional campus device management
- B. Traditional campus device management allows a network to scale more quickly than with Cisco DNA Center device management
- C. Cisco DNA Center device management can be implemented at a lower cost than most traditional campus device management options
- D. Traditional campus device management schemes can typically deploy patches and updates more quickly than Cisco DNA Center device management

**Answer:** A

**Question 5**

What is an advantage of Cisco DNA Center versus traditional campus device management?

- A. It supports numerous extensibility options including cross-domain adapters and third-party SDKs
- B. It supports high availability for management functions when operating in cluster mode
- C. It enables easy autodiscovery of network elements in a brownfield deployment
- D. It is designed primarily to provide network assurance

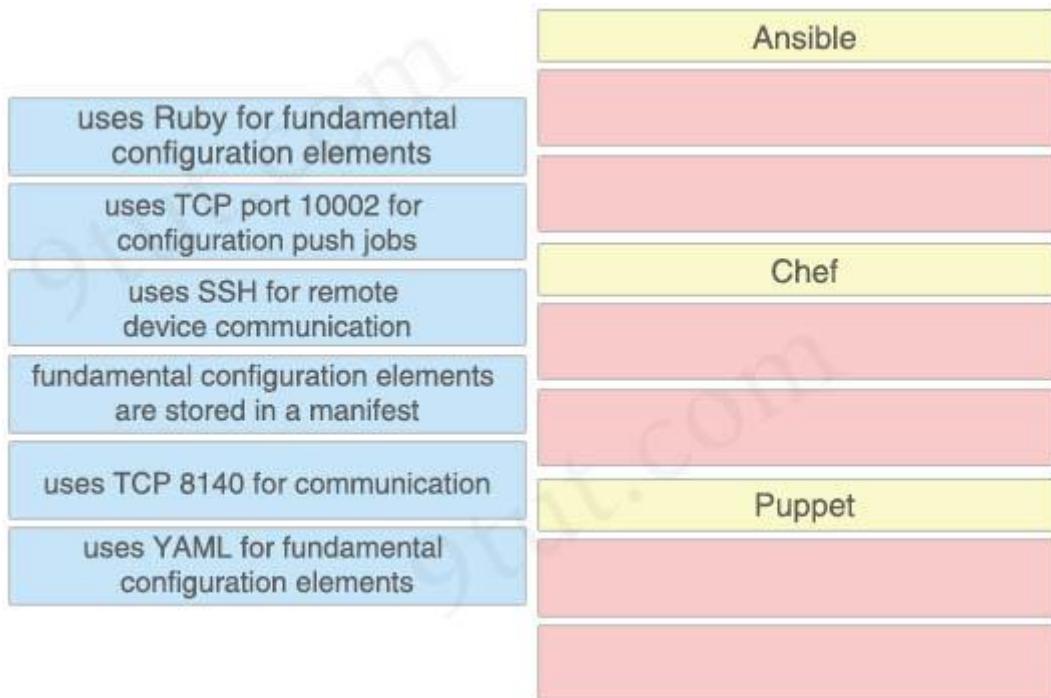
**Answer:** A

## Drag Drop Questions

<https://www.9tut.com/drag-drop-questions>

### Question 1

Drag drop the descriptions from the left on to the correct configuration-management technologies on the right.



**Answer:**

#### **Ansible:**

- + uses SSH for remote device communication
- + uses YAML for fundamental configuration elements

**Chef:**

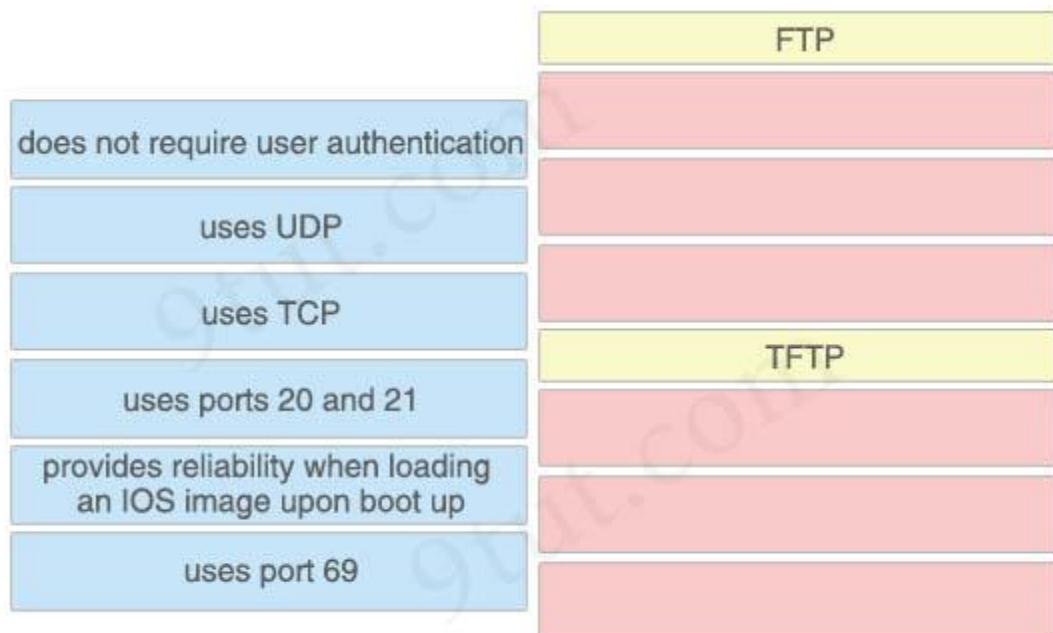
- + uses Ruby for fundamental configuration elements
- + uses TCP port 10002 for configuration push jobs

**Puppet:**

- + fundamental configuration elements are stored in a manifest
- + uses TCP 8140 for communication

**Question 2**

Drag and drop the description of file-transfer protocols from the left onto the correct protocols on the right.

**Answer:****FTP:**

- + uses TCP
- + uses ports 20 and 21
- + provides reliability when loading an IOS image upon boot up

**TFTP:**

- + does not require user authentication
- + uses UDP
- + uses port 69

**Question 3**

Drag and drop the WLAN components from the left onto the correct descriptions on the right.

dynamic interface	device that provides Wi-Fi devices with a connection to a wired network
access point	device that manages access points
service port	used to support mobility management of the WLC
virtual interface	applied to the WLAN for wireless client communication
wireless LAN controller	used for out of band management of a WLC

### Answer:

- + device that manages access points: wireless LAN controller
- + device that provides Wi-Fi devices with a connection to a wired network: access point
- + used for out of band management of a WLC: service port
- + used to support mobility management of the WLC: virtual interface
- + applied to the WLAN for wireless client communication: dynamic interface

### Question 4

Drag and drop the functions from the left onto the correct network components on the right.

holds the TCP/IP settings to be distributed to the clients	DHCP Server
resolves web URLs to IP addresses	
stores a list of IP addresses mapped to names	
assigns a default gateway to a client	
assigns IP addresses to enabled clients	DNS Server

### Answer:

**DHCP Server:**

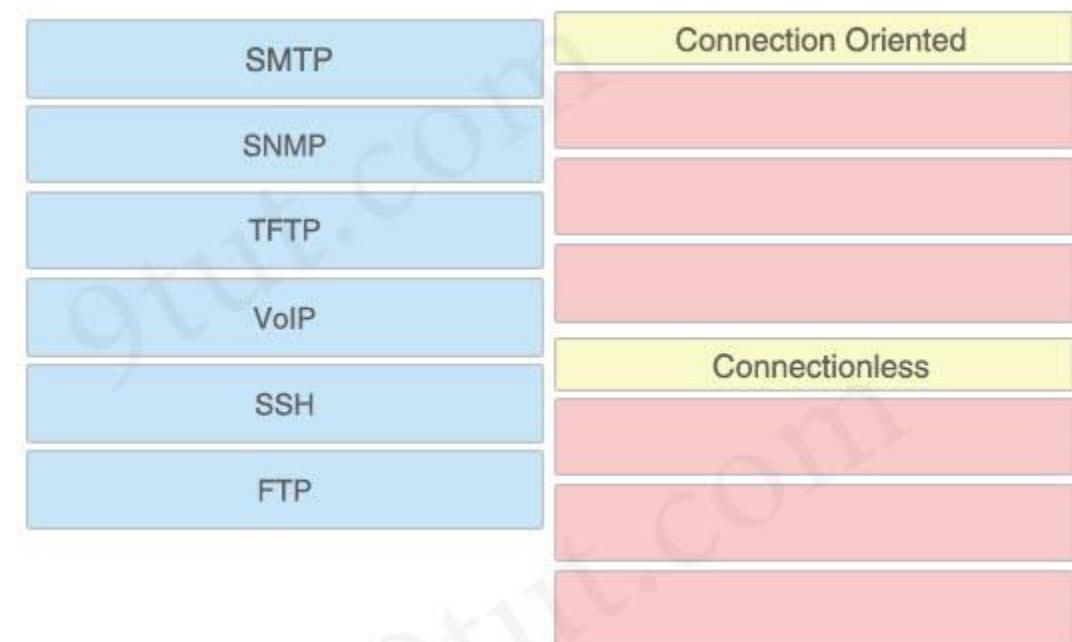
- + holds the TCP/IP settings to be distributed to the clients
- + assigns a default gateway to a client
- + assigns IP addresses to enabled clients

**DNS Server:**

- + resolves web URLs to IP addresses
- + stores a list of IP addresses mapped to names

**Question 5**

Drag and drop the networking parameters from the left on to the correct values on the right.

**Answer:****Connection Oriented:**

- + SMTP
- + SSH
- + FTP

**Connectionless:**

- + SNMP
- + TFTP
- + VoIP

**Question 6**

Drag the OSPF parameters to the correct places on the right.

netmask	must be unique
OSPF process ID	
router ID	
IP address	must match
area ID	
timers	

**Answer:**

**must be unique:**

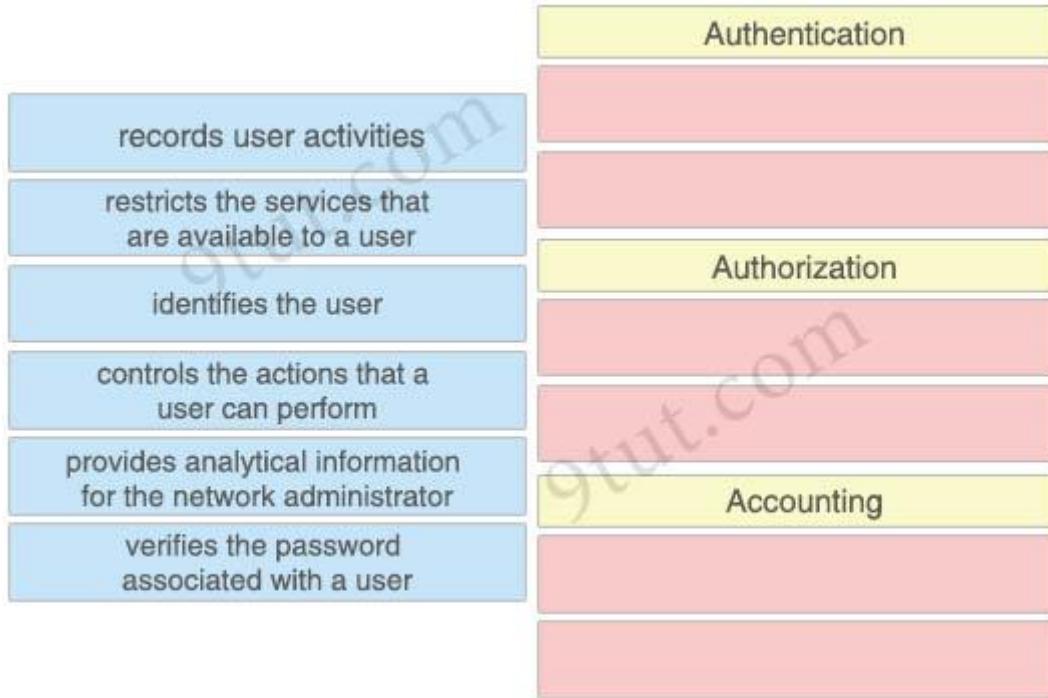
- + IP address
- + router ID

**must match:**

- + area ID
- + timers
- + netmask

**Question 7**

Drag and drop the AAA functions from the left onto the correct AAA services on the right.



**Answer:**

**Authentication:**

- + identifies the user
- + verifies the password associated with a user

**Authorization:**

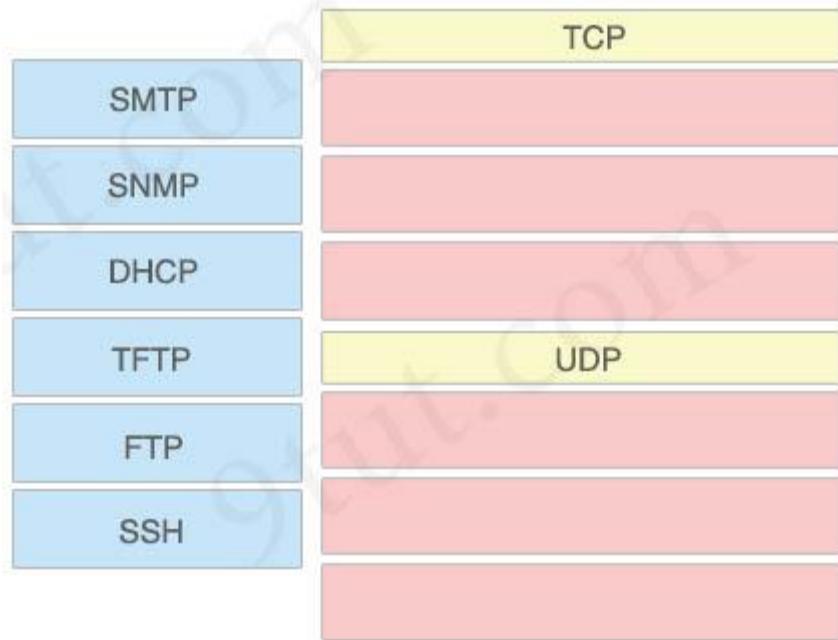
- + restricts the services that are available to a user
- + controls the actions that a user can perform

**Accounting:**

- + records user activities
- + provides analytical information for the network administrator

**Question 8**

Drag and drop the application protocols from the left onto the suitable transport protocols on the right.



**Answer:**

**TCP:**

- + SMTP
- + FTP
- + SSH

**UDP:**

- + SNMP
- + DHCP
- + TFTP

**Question 9**

Drag and drop the IPv4 network subnets from the left onto the correct usable host ranges on the right.

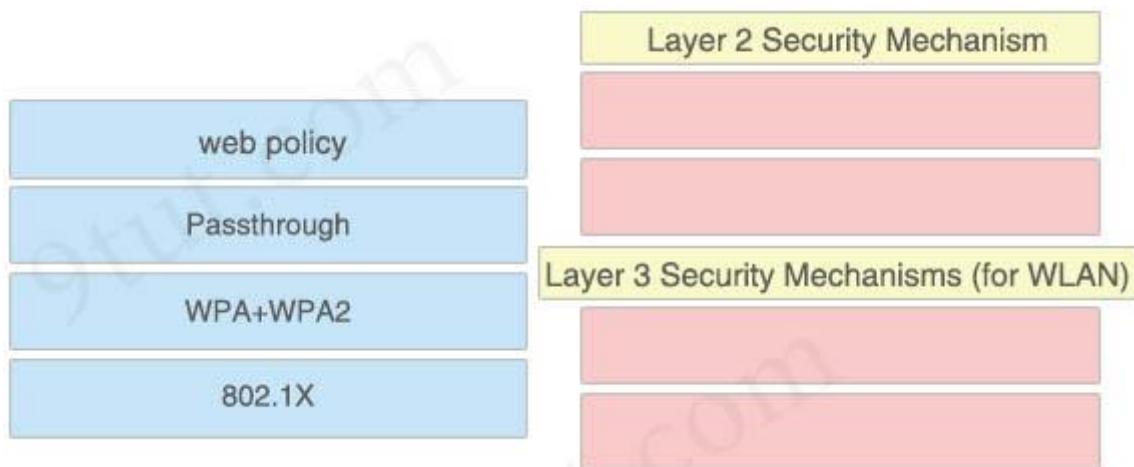
172.28.228.144/18	172.28.228.1 - 172.28.229.254
172.28.228.144/21	172.28.224.1 - 172.28.231.254
172.28.228.144/23	172.28.228.129 - 172.28.228.254
172.28.228.144/25	172.28.228.145 - 172.28.228.150
172.28.228.144/29	172.28.192.1 - 172.28.255.254

**Answer:**

- + 172.28.228.144/18: 172.28.192.1 – 172.28.255.254
- + 172.28.228.144/21: 172.28.224.1 – 172.28.231.254
- + 172.28.228.144/23: 172.28.228.1 – 172.28.229.254
- + 172.28.228.144/25: 172.28.228.129 – 172.28.228.254
- + 172.28.228.144/29: 172.28.228.145 – 172.28.228.150

**Question 10**

Drag and drop the Cisco Wireless LAN Controller security settings from the left onto the correct security mechanism categories on the right.

**Answer:****Layer 2 Security Mechanism:**

- + WPA+WPA2
- + 802.1X

**Layer 3 Security Mechanisms (for WLAN):**

- + web policy
- + Passthrough

**Question 11**

Drag and Drop the benefits of a Cisco Wireless LAN Controller from the left onto the correct examples on the right

Dynamic RF Feature	Controller provides centralized management of users and VLANs
Easy Deployment Process	Access points auto adjust signal strength
Optimized user performance	Controller image auto deployed to access Points
Easy upgrade process	Controller uses loadbalancing to maximize throughput

### Answer:

- + **Dynamic RF Feature:** Access points auto adjust signal strength
- + **Easy Deployment Process:** Controller provides centralized management of users and VLANs
- + **Optimized user performance:** Controller uses loadbalancing to maximize throughput
- + **Easy upgrade process:** Controller image auto deployed to access Points

### Question 12

Drag and drop the threat-mitigation techniques from the left onto the types of threat or attack they mitigate on the right.

Configure BPDU guard	802.1q double tagging
Configure dynamic ARP inspection	ARP spoofing
Configure root guard	unwanted superior BPDUs
Configure VACL	unwanted BPDUs on PortFast-enabled interfaces

### Answer:

- + 802.1q double tagging: Configure a VLAN access control list
- + ARP spoofing: Configure the dynamic ARP inspection feature
- + unwanted superior BPDUs: Configure the root guard feature
- + unwanted BPDUs on PortFast-enabled interfaces: Configure the BPDU guard feature

### Question 13

Refer to the exhibit.

```
[root#HostTime=]#ip route
default via 192.168.1.193 dev eth1 proto static
192.168.1.0/26 dev sth1 proto kernel scope link src 192.168.1.200 metric 1

[root#HostTime=]#ip addr show eth1
```

```
eth1:mtu 1500 qdisc pfifo_fast qlan 1000
link/ether 00:0C:22:83:79:A3 brd ff:ff:ff:ff:ff:ff
inet 192.168.1.200/26 brd 192.168.1.255 scope global eth1
inet6 fe80::20c::29ff:fe89:79b3/64 scope link
valid_lft forever preferred_lft forever
```

Drag and drop the networking parameters from the left onto the correct values on the right.

default gateway	00:0C:22
host IP address	00:0C:22:83:79:A3
NIC MAC address	192.168.1.193
NIC vendor OUI	192.168.1.200
subnet mask	255.255.255.192

#### Answer:

- + 00:0C:22: NIC vendor OUI
- + 00:0C:22:83:79:A3: NIC MAC address
- + 192.168.1.193: default gateway
- + 192.168.1.200: host IP address
- + 255.255.255.192: subnet mask

#### Question 14

Drag and drop the descriptions of IP protocol transmissions from the left onto the correct IP traffic types on the right.

Sends Transmission in Sequence	TCP
Transmits packets individually	
Uses higher transmission rate to support latency-sensitive apps	
Uses a lower transmission rate to ensure reliability	
Transmissions include an 8-byte header	UDP
Transmits packet as stream	

**Answer:**

### **TCP:**

- + Sends Transmission in Sequence
- + Uses a lower transmission rate to ensure reliability
- + Transmits packet as stream

### **UDP:**

- + Transmits packets individually
- + Uses higher transmission rate to support latency-sensitive apps
- + Transmissions include an 8-byte header

## **Drag Drop Questions 2**

<https://www.9tut.com/drag-drop-questions-2>

### **Question 1**

Refer to the exhibit. Drag and drop the routing table components on the left onto the corresponding letter from the exhibit on the right. Not all options are used.

<b>A</b> <input type="checkbox"/> B*    0.0.0.0/0 [20/0] via 10.111.11.93, 6w3d <input type="checkbox"/> 10.0.0.0/8 is variably subnetted, 165 subnets, 16 masks <input type="checkbox"/> O E1    10.1.1.55/32 [110/31] via 10.153.0.10, 4w0d, GigabitEthernet0/0/1	<b>B</b> <input type="checkbox"/> C <b>C</b> <b>D</b> <b>E</b>
--	--

administrative distance	A
metric	B
next-hop interface	C
outbound interface	D
route source	E
subnet mask	
timestamp	

**Answer:**

- A: route source
- B: administrative distance
- C: metric
- D: timestamp
- E: outbound interface

**Question 2**

Drag and drop each broadcast IP address on the left to the Broadcast Address column on the right.  
Not all options are used.

10.1.255.254/24	
10.63.255.255/10	
172.16.255.39/29	
172.20.255.255/16	
192.168.1.10/24	
192.168.255.127/25	

**Answer:**

+ 10.63.255.255/10  
+ 172.16.255.39/29  
+ 172.20.255.255/16  
+ 192.168.255.127/25

### Question 3

An interface has been configured with the access list that is shown below.

```
access-list 107 deny tcp 207.16.12.0.0.0.3.255 any eq http  
access-list 107 permit ip any any
```

On the basis of that access list, drag each information packet on the left to the appropriate category on the right.

source IP: 207.16.32.14, destination application: http	Permitted
source IP: 207.16.15.9, destination port: 23	
source IP: 207.16.14.7, destination port: 80	
source IP: 207.16.13.14, destination application: http	
source IP: 207.16.16.14, destination port: 53	Denied

### Answer:

#### Permitted:

+ source IP: 207.16.32.14,  
destination application: http  
+ source IP: 207.16.15.9,  
destination port: 23  
+ source IP: 207.16.16.14,  
destination port: 53

#### Denied:

+ source IP: 207.16.14.7,  
destination port: 80  
+ source IP: 207.16.13.14,  
destination application: http

#### Question 4

Order the DHCP message types as they would occur between a DHCP client and a DHCP server.

DHCPACK	first
DHCPOFFER	second
DHCPDISCOVER	third
DHCPREQUEST	fourth

#### Answer:

- + First: DHCPDISCOVER
- + Second: DHCPOFFER
- + Third: DHCPREQUEST
- + Fourth: DHCPACK

#### Question 5

Drag each route source from the left to the numbers on the right. Beginning with the lowest and ending with the highest administrative distance.

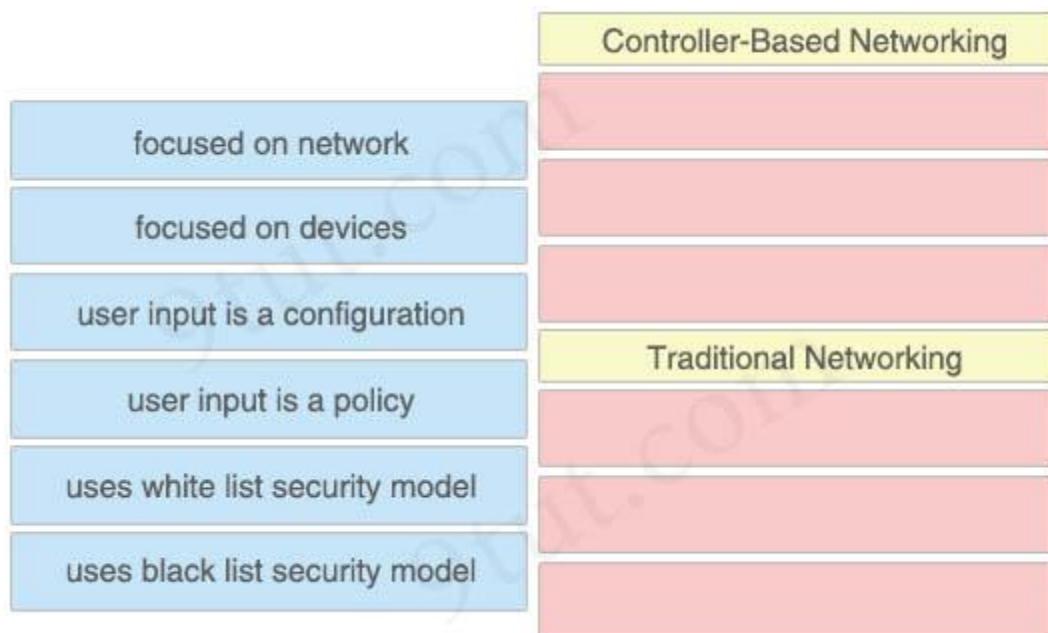
connected	1
EBGP	2
EIGRP	3
OSPF	4
RIP	5
static	6

#### Answer:

- 1: connected
- 2: static
- 3: EBGP
- 4: EIGRP
- 5 :OSPF
- 6: RIP

### Question 6

Drag and drop to the characteristics of networking from the left onto the correct networking types on the right.



### Answer:

#### **Controller-Based Networking:**

- + focused on network
- + user input is a policy
- + uses white list security model

#### **Traditional Networking:**

- + focused on devices
- + user input is a configuration
- + uses black list security model

### Question 7

Drag and drop the attack-mitigation techniques from the left onto the types of attack that they mitigate on the right.

configure 802.1x authenticate	802.1q double-tagging VLAN-hopping attack
configure DHCP snooping	MAC flooding attack
configure the native VLAN with a nondefault VLAN ID	man-in-the-middle spoofing attack
disable DTP	switch-spoofing VLAN-hopping attack

### Answer:

- + 802.1q double-tagging VLAN-hopping attack: configure the native VLAN with a nondefault VLAN ID
- + MAC flooding attack: configure 802.1x authenticate
- + man-in-the-middle spoofing attack: configure DHCP snooping
- + switch-spoofing VLAN-hopping attack: disable DTP

### Question 8

Match the functions to the corresponding layers. (Not all options are used)

	Access layer
provides high-speed backbone connectivity	
implements personal firewalls on the client computers	
provides network access to the user	Distribution layer
implements network access policy	
represents the network edge	
establishes Layer 3 routing boundaries	Core layer
functions as an aggregator for all the campus blocks	

### Answer:

**Access layer:**

- + provides network access to the user
- + represents the network edge

**Distribution layer:**

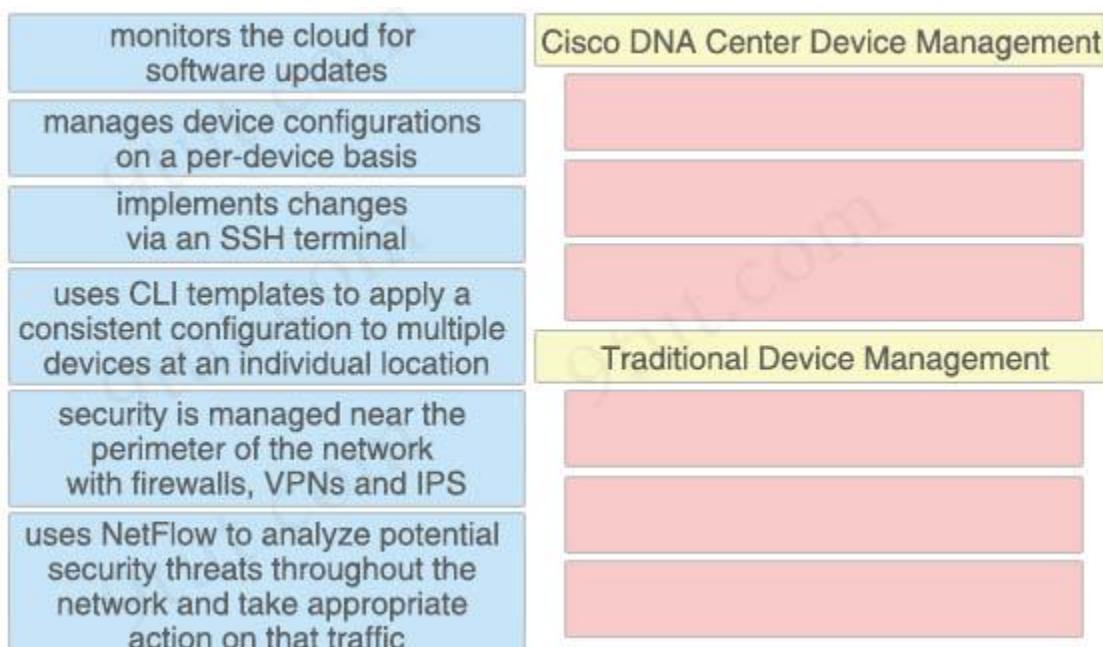
- + implements network access policy
- + establishes Layer 3 routing boundaries

**Core layer:**

- + provides high-speed backbone connectivity
- + functions as an aggregator for all the campus blocks

**Question 9**

Drag the descriptions of device management from the left onto the types of device management on the right.

**Answer:****Cisco DNA Center Device Management:**

- + monitors the cloud for software updates
- + uses CLI templates to apply a consistent configuration to multiple devices at an individual location
- + uses NetFlow to analyze potential security threats throughout the network and take appropriate action on that traffic

**Traditional Device Management:**

- + manages device configurations on a per-device basis
- + security is managed near the perimeter of the network with firewalls, VPNs and IPS
- + implements changes via an SSH terminal

## Question 10

An engineer is tasked with verifying network configuration parameters on a client workstation to report back to the team lead. Drag and drop the node identifiers from the left onto the network parameters on the right.

```
C:\>ipconfig/all
Windows IP Configuration
  Host Name . . . . . : JAS
  Primary Dns Suffix . . . . . :
  Node Type . . . . . : Mixed
  IP Routing Enabled. . . . . : No
  WINS Proxy Enabled. . . . . : No

  Wireless LAN adapter Local Area Connection* 6:
    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix . . . . . :
    Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
    Physical Address. . . . . : 1A-2B-3C-4D-5E-6F
    DHCP Enabled. . . . . : Yes
    Autoconfiguration Enabled . . . . . : Yes

  Wireless LAN adapter Wi-Fi:
    Connection-specific DNS Suffix . . . . . :
    Description . . . . . : Intel(R) Dual Band Wireless-AC 8260
    Physical Address. . . . . : B8-76-3F-7C-57-DF
    DHCP Enabled. . . . . : No
    Autoconfiguration Enabled . . . . . : Yes
    Link-local IPv6 Address . . . . . : fe80::3dd8:5c53:ff04:4731%8 (Preferred)
      . . . . . : 192.168.1.20 (Preferred)
      . . . . . : 255.255.255.0
      . . . . . : 192.168.1.1
    DHCPv6 IAID . . . . . : 2645373837
    DHCPv6 Client DUID. . . . . : 00-01-00-01-19-E3-42-2B-33-F3-34-29-20-DF
      . . . . . : 192.168.1.15
      . . . . . : 192.168.1.16
    NetBIOS over Tcpip. . . . . : Enabled
```

192.168.1.20	broadcast address
192.168.1.255	default gateway
192.168.1.1	host IP address
192.168.1.254	MAC address
B8-76-3F-7C-57-DF	last assignable IP address in the subnet

Answer:

- + broadcast address: 192.168.1.255
- + default gateway: 192.168.1.1
- + host IP address: 192.168.1.20
- + MAC address: B8-76-3F-7C-57-DF
- + last assignable IP address in the subnet: 192.168.1.254

## Drag Drop Questions 3

<https://www.9tut.com/drag-drop-questions-3>

### Question 1

Drag the IPv6 DNS record types from the left onto the description on the right.

AAAA	correlates a domain with its authoritative name servers
CNAME	associates the domain serial number with its owner
PTR	aliases one name to another
NS	supports reverse name lookups
SOA	correlates a host name with an IP address

### Answer:

- + correlates a domain with its authoritative name servers: NS
- + associates the domain serial number with its owner: SOA
- + aliases one name to another: CNAME
- + supports reverse name lookups: PTR
- + correlates a host name with an IP address: AAAA

### Question 2

Drag and drop the SNMP components from the left onto the descriptions on the right.

SNMP agent	unsolicited message
SNMP manager	responds to status requests and requests for information about a device
MIB	collection of variables that can be monitored
SNMP trap	resides on an NMS

**Answer:**

- + unsolicited message: SNMP trap
- + responds to status requests and requests for information about a device: SNMP agent
- + collection of variables that can be monitored: MIB
- + resides on an NMS: SNMP manager

**Question 3**

Refer to the exhibit.

```
C:\>ipconfig/all
Windows IP Configuration
Host Name . . . . . : JAS
Primary Dns Suffix . . . . . :
Node Type . . . . . : Mixed
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Wireless LAN adapter Local Area Connection* 6:
Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Microsoft Wi-Fi Direct Virtual Adapter
Physical Address. . . . . : 1A-76-3F-7C-57-DF
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . . . : Yes

Wireless LAN adapter Wi-Fi:
Connection-specific DNS Suffix . . . . . :
Description . . . . . : Intel(R) Dual Band Wireless-AC 8260
Physical Address. . . . . : B8-76-3F-7C-57-DF
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::3dd8:5c53:ff04:4731%8 (Preferred)
                               . . . . . : 192.168.1.20 (Preferred)
                               . . . . . : 255.255.255.0
                               . . . . . : 192.168.1.1
DHCPv6 IAID . . . . . : 2645373837
DHCPv6 Client DUID. . . . . : 00-01-00-01-19-E3-42-2B-33-F3-34-29-20-DF
                               . . . . . : 192.168.1.15
                               . . . . . : 192.168.1.16
NetBIOS over Tcpip. . . . . : Enabled
```

An engineer is required to verify that the network parameters are valid for the users wireless LAN connectivity on a /24 subnet. Drag and drop the values from the left onto the network parameters on the right. Not all values are used.

192.168.1.1	host IP address
192.168.1.255	broadcast address
192.168.1.20	network address
B8-76-3F-7C-57-DF	default gateway
1A-76-3F-7C-57-DF	MAC address
192.168.1.254	last assignable IP address in the subnet
192.168.1.0	

**Answer:**

- + host IP address: 192.168.1.20
- + broadcast address: 192.168.1.255
- + network address: 192.168.1.0
- + default gateway: 192.168.1.1
- + MAC address: B8-76-3F-7C-57-DF
- + last assignable IP address in the subnet: 192.168.1.254

#### Question 4

An engineer is tasked to configure a switch with port security to ensure devices that forward unicasts, multicasts, and broadcasts are unable to flood the port. The port must be configured to permit only two random MAC addresses at a time. Drag and drop the required configuration commands from the left onto the sequence on the right. (Not all commands are used)

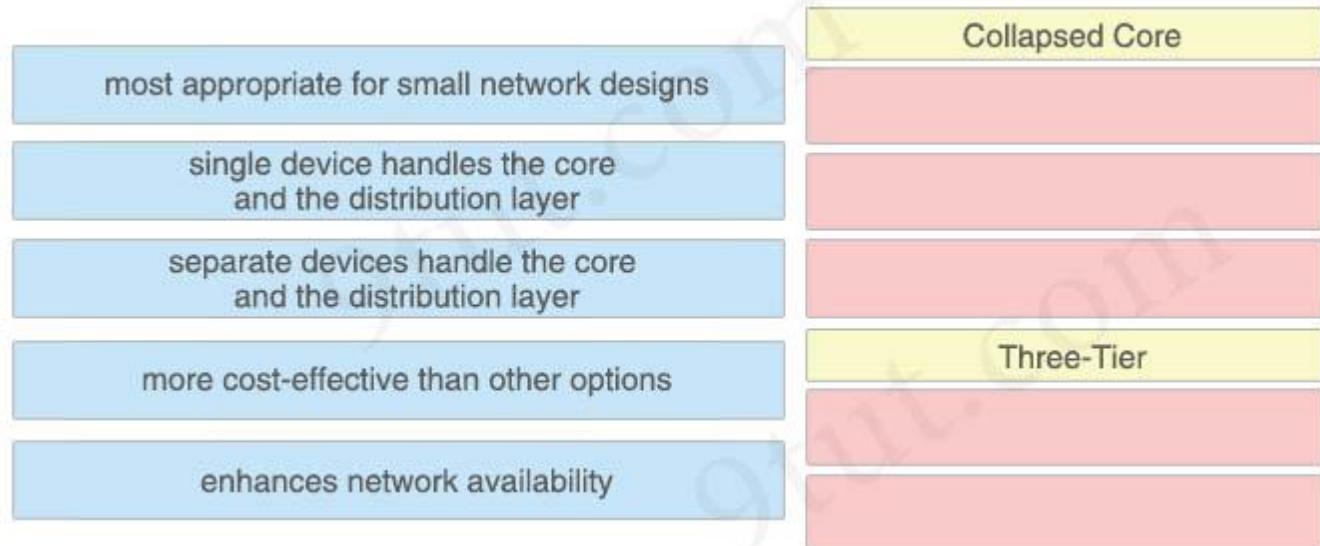
switchport mode access	1
switchport port-security	2
switchport port-security mac-address 0060.3EDD.77ab	3
switchport port-security mac-address 00D0.D443.4564	4
switchport port-security mac-address sticky	
switchport port-security violation shutdown	
switchport port-security maximum 2	

#### Answer:

- 1: switchport mode access
- 2: switchport port-security
- 3: switchport port-security maximum 2
- 4: switchport port-security mac-address sticky

#### Question 5

Drag the characteristics of network architectures from the left onto the type of architecture on the right.



### Answer:

#### **Collapsed Core**

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

#### **Three-Tier**

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

### Question 6

Drag and drop the QoS congestion management terms from the left onto the description on the right.

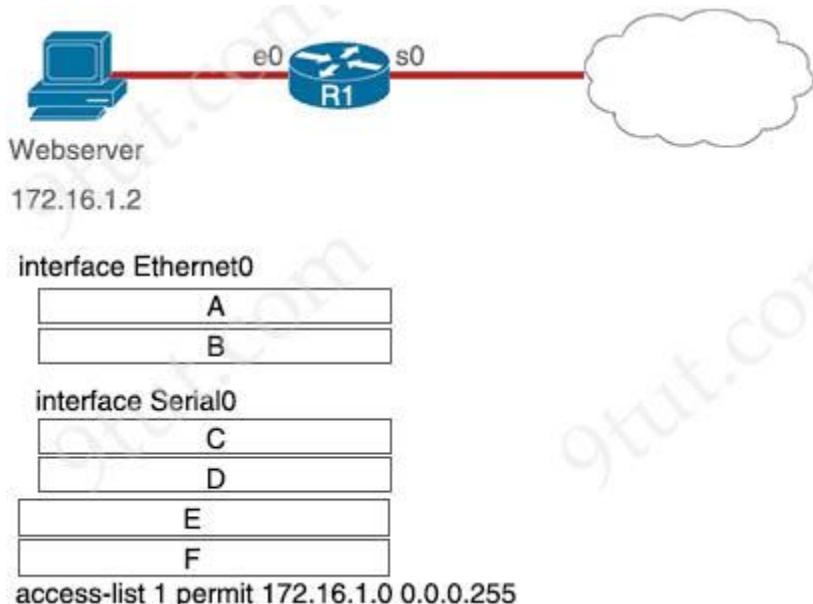
FIFO	services a specified number of bytes in one queue before continuing to the next queue
CBWFQ	provides guaranteed bandwidth to a specified class of traffic
CQ	places packets into one of four priority-based queues
PQ	provides minimum guaranteed bandwidth to one or more flows
WFQ	uses store-and-forward queueing

**Answer:**

- + services a specified number of bytes in one queue before continuing to the next queue: CQ
- + provides guaranteed bandwidth to a specified class of traffic: CBWFQ
- + places packets into one of four priority-based queues: PQ
- + provides minimum guaranteed bandwidth to one or more flows: WFQ
- + uses store-and-forward queuing: FIFO

**Question 7**

Refer to the exhibit.



An engineer is configuring the router to provide static NAT for the webserver. Drag and drop the configuration commands from the left onto the letters that correspond to its position in the configuration on the right.

ip address 45.83.2.214 255.255.255.240	position A
ip address 172.16.1.1 255.255.255.0	position B
ip nat outside	position C
ip nat inside	position D
ip nat inside source static tcp 172.16.1.2 80 45.83.2.214 80 extendable	position E
ip nat inside source list 1 interface s0 overload	position F

#### Answer:

- + position A: ip address 172.16.1.1 255.255.255.0
- + position B: ip nat inside
- + position C: ip address 45.83.2.214 255.255.255.240
- + position D: ip nat outside
- + position E: ip nat inside source static tcp 172.16.1.2 80 45.83.2.214 80 extendable
- + position F: ip nat inside source list 1 interface s0 overload

#### Question 8

Drag and drop the DHCP snooping terms from the left onto the descriptions on the right.

DHCP server	list of hosts on the network that are unknown to the administrative domain
snooping binding database	unknown DHCP server within an administrative domain
spurious DHCP server	network component that propagates IP addresses to hosts on the network
trusted	default state of all interfaces
untrusted	internal device under the control of the network administrator

**Answer:**

- + list of hosts on the network that are unknown to the administrative domain: snooping binding database
- + unknown DHCP server within an administrative domain: spurious DHCP server
- + network component that propagates IP addresses to hosts on the network: DHCP server
- + default state of all interfaces: untrusted
- + internal device under the control of the network administrator: trusted

## VPN Questions

<https://www.9tut.com/vpn-questions>

### Question 1

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

**Answer: B**

### Question 2

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

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

**Answer: B**

### Question 3

What is a function of a remote access VPN?

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

**Answer:** B

# DHCP Questions

<https://www.9tut.com/dhcp-questions-3>

## Question 1

Which Cisco IOS command will indicate that interface GigabitEthernet 0/0 is configured via DHCP?

- A. show ip interface GigabitEthernet 0/0 dhcp
- B. show interface GigabitEthernet 0/0
- C. show ip interface dhcp
- D. show ip interface GigabitEthernet 0/0
- E. show ip interface GigabitEthernet 0/0 brief

**Answer:** D

## Question 2

Which command enables a router to become a DHCP client?

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

**Answer:** A

## Question 3

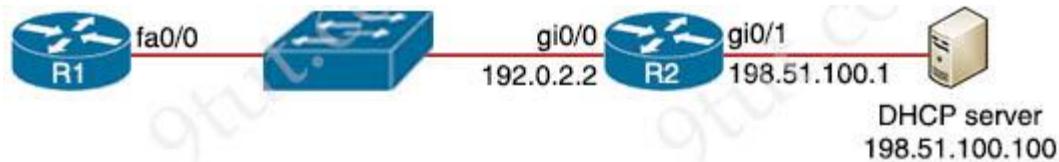
What are two roles of the Dynamic Host Configuration Protocol (DHCP)? (Choose two)

- A. The DHCP server offers the ability to exclude specific IP addresses from a pool of IP addresses
- B. The DHCP client can request up to four DNS server addresses
- C. The DHCP server assigns IP addresses without requiring the client to renew them
- D. The DHCP server leases client IP addresses dynamically
- E. The DHCP client maintains a pool of IP addresses it can assign

**Answer:** A D

## Question 4

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

**Answer:** B C

### Question 5

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

**Answer:** C

### Question 6

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

**Answer:** A

**Question 7**

What is a DHCP client?

- A. a host that is configured to request an IP address automatically
- B. a router that statically assigns IP addresses to hosts
- C. a server that dynamically assigns IP addresses to hosts
- D. a workstation that requests a domain name associated with its IP address

**Answer:** A

**Question 8**

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

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

**Answer:** B

**Question 9**

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

## **Question 10**

Which command must you enter to configure a DHCP relay?

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

**Answer:** A

## **Question 11**

Where does a switch maintain DHCP snooping information?

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

**Answer:** C

# **Automation Questions**

<https://www.9tut.com/automation-questions>

## **Question 1**

Which output displays a JSON data representation?

A.  
{  
“response”,{  
“taskId”,{};  
“url”,“string”  
};  
“version”, “string”  
}

B.  
{  
“response”:{  
“taskId”,{};  
“url”,“string”  
};

“version”; “string”  
}

C.

```
{  
“response”- {  
“taskId”- {};  
“url”-“string”  
},  
“version”-“string”  
}
```

D.

```
{  
“response”: {  
“taskId”: {},  
“url”：“string”  
},  
“version”: “string”  
}
```

**Answer:** D

### Question 2

Which option best describes an API?

- A. communication often uses either Java scripting, Python, XML, or simple HTTP
- B. an architectural style (versus a protocol) for designing applications
- C. a stateless client-server model
- D. request a certain type of data by specifying the URL path that models the data

**Answer:** C

### Question 3

Which option about JSON is true?

- A. uses predefined tags or angle brackets (<>) to delimit markup text
- B. used to describe structured data that includes arrays
- C. used for storing information
- D. similar to HTML, it is more verbose than XML

**Answer:** B

#### **Question 4**

Which of the following is the JSON encoding of a dictionary or hash?

- A. {"key": "value"}
- B. ["key", "value"]
- C. {"key", "value"}
- D. ("key": "value")

**Answer:** A

#### **Question 5**

Which two encoding methods are supported by REST APIs? (Choose two)

- A. YAML
- B. JSON
- C. EBCDIC
- D. SGML
- E. XML

**Answer:** B E

#### **Question 6**

What are two benefits of network automation? (Choose two)

- A. reduced operational costs
- B. reduced hardware footprint
- C. faster changes with more reliable results
- D. fewer network failures
- E. increased network security

**Answer:** A C

#### **Question 7**

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

**Answer:** D

**Question 8**

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

**Answer:** D

**Question 9**

Refer to the exhibit.

```
cisco_ospf_vrf {"R1 default":  
  ensure => 'present',  
  auto_cost => '100',  
}
```

Which type of configuration is represented in the output?

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

**Answer:** A

**Question 10**

Which CRUD operation modifies an existing table or view?

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

**Answer:** D

**Question 11**

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

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

**Answer:** A

## Miscellaneous Questions

<https://www.9tut.com/miscellaneous-questions-2>

### Question 1

Which command can you enter to allow Telnet to be supported in addition to SSH?

- A. transport input telnet ssh
- B. transport input telnet
- C. no transport input telnet
- D. privilege level 15

**Answer:** A

### Question 2

A network engineer must back up 20 network router configurations globally within a customer environment. Which protocol allows the engineer to perform this function using the copy function?

- A. COP
- B. SNMP
- C. SMTP
- D. ARP

**Answer:** B

### Question 3

A Cisco IP phone receive untagged data traffic from an attached PC. Which action is taken by the phone?

- A. It allows the traffic to pass through unchanged
- B. It drops the traffic
- C. It tags the traffic with the default VLAN
- D. It tags the traffic with the native VLAN

**Answer:** A

**Question 4**

Which function does an SNMP agent perform?

- A. It sends information about MIB variables in response to requests from the NMS
- B. It coordinates user authentication between a network device and a TACACS+ or RADIUS server
- C. It requests information from remote network nodes about catastrophic system events.
- D. It manages routing between Layer 3 devices in a network

**Answer:** A

**Question 5**

What are two differences between optical-fiber cabling and copper cabling? (Choose two)

- A. Light is transmitted through the core of the fiber
- B. A BNC connector is used for fiber connections
- C. The glass core component is encased in a cladding
- D. Fiber connects to physical interfaces using RJ-45 connections
- E. The data can pass through the cladding

**Answer:** A C

**Question 6**

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. runt
- C. CRC
- D. late collision

**Answer:** D

### **Question 7**

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

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

**Answer:** A

### **Question 8**

A network analyst is tasked with configuring the date and time on a router using EXEC mode. The date must be set to January 1, 2020 and the time must be set to 12:00 am. what command should be used?

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

**Answer:** B