CCNAv3 – New Questions 3

Question 1

Which symbol in the APIC-EM Path Trace tool output indicates that an ACL is present and might deny packets?

A. 

B. 

C. 

D. 

Answer: C

Explanation

Icon  means “there are ACLs that permit the traffic applied on the interface”.

Icon  means “traffic may or may not be blocked. For example, if your traffic matches a deny access control entry (ACE), traffic is denied. However, if your traffic matches any other ACEs, it is permitted. You can get this type of results if you leave out the protocol, source port, or destination port when defining a path trace”.

Icon  means “there is an ACL on the device or interface that is blocking the traffic on the path”.

Icon  means “there are no ACLs applied on the interface”.

Reference: https://www.cisco.com/c/en/us/td/docs/cloud-systems-management/application-policy-infrastructure-controller-enterprise-module/1-5-x/path_trace/user-guide/b_Cisco_Path_Trace_User_Guide_1_5_0_x/b_Cisco_Path_Trace_User_Guide_1_5_0_x_chapter_0111.html

Question 2

Which two technologies can combine multiple physical switches into one logical switch? (Choose two)

A. HSRP
B. GLBP
C. StackWise

D. VRRP
E. VSS

Answer: C E

Explanation

The term chassis aggregation refers to Cisco technology that is used to make multiple switches operate as a single switch. Virtual Switching System (VSS) and Switch Stacking are two technologies to accomplish this task. So “VSS” is the correct answer here.

Note: StackWise is the technology provides chassis redundancy in a VSS environment.

The differences between VSS and StackWise technologies:

Virtual Switching System (VSS) is a chassis aggregation technology but it is dedicated for Cisco Catalyst 6500, 6800 or 4500 Series Switches. VSS does not use special cables but establishes a virtual switch link (VSL) between two switches using regular Ethernet cables (Gigabit, TenGigabit…). VSS is limited to two switches.

Stacking is something we do with 3850, 3750 and 3750x. It uses a special stack cable and is not limited to two switches (some models can stack up to 9 members). This is more of an access layer technology.

Question 3

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

Explanation

Below is the output of the “show ntp status” command. From this output we learn that R1 has a stratum of 10 and it is getting clock from 10.1.2.1.

```
R1#show ntp status
Clock is synchronized, stratum 10, reference is 10.1.2.1
nominal freq is 250.0000 Hz, actual freq is 249.9987 Hz, precision is 2**18
reference time is D5E492E9.98ACB4CF (13:00:25.596 CST Wed Sep 18 2013)
clock offset is 15.4356 msec, root delay is 52.17 msec
```

```
root dispersion is 67.61 msec, peer dispersion is 28.12 msec
```

Question 4

Which two benefits are provided by cloud resources to an enterprise network? (Choose two)

A. full control of infrastructure
B. complexity at higher cost
C. flexibility
D. on-demand scalability
E. easy access with low security

Answer: C D

Explanation

Clouds provide a new level of flexibility in application and data delivery. Provisioning applications and services from a cloud can give you the operational benefits without the capital expenses of maintaining on-premises environments.

Scalability is the ability to expand and reduce resources according to your specific service requirement. For example, you may need a large number of server resources for the duration of a specific task. You can then release these server resources after you complete your task. Surely cloud services have this benefit.

Unfortunately cloud resources (services) do not give us full control of its infrastructure as the infrastructure belong to the cloud service providers. We only pay for what we use.

Question 5

Refer to the exhibit. Which two statements about router R1 are true? (Choose two)

```
     209.65.200.0/30 is subnetted, 2 subnets
R       209.65.200.240 [20/0] via 209.65.200.226, 01:01:41
C       209.65.200.224 is directly connected, Serial0/1
     10.0.0.0/8 is variably subnetted, 12 subnets, 4 masks
O IA    10.1.10.3/32 [110/129] via 10.82.4.42, 01:09:51, Serial0/0/0
O IA    10.1.1.8/30 [110/192] via 10.82.4.42, 01:09:51, Serial0/0/0
O       10.1.10.2/32 [110/65] via 10.82.4.42, 01:09:51, Serial0/0/0
O E2    10.1.10.4/32 [110/20] via 10.82.4.42, 01:09:39, Serial0/0/0
D EX    10.1.4.8/30 [110/20] via 10.82.4.42, 01:09:39, Serial0/0/0
O E2    10.2.0.0/16 [110/20] via 10.82.4.42, 01:09:39, Serial0/0/0
O E2    10.1.4.4/30 [110/20] via 10.82.4.42, 01:09:40, Serial0/0/0
O E2    10.1.21.128/27 [110/20] via 10.82.4.42, 01:09:40, Serial0/0/0
     192.168.1.0/32 is subnetted, 2 subnets
O E2    192.168.1.129 [110/20] via 10.82.4.42, 01:09:40, Serial0/0/0
O E2    192.168.1.130 [110/20] via 10.82.4.42, 01:09:40, Serial0/0/0
```

A. the router has two EIGRP neighbors and one OSPF neighbor
B. at least two IGP routing protocols are running on the router
C. at least three IGP routing protocols are running on the router

D. the router is learning external OSPF and EIGRP routes
E. the router has an OSPF Area 0 adjacency with the device at 10.82.4.42

Answer: C D

Question 6

Which feature or method can you use to isolate physical layer problems on a serial link?

A. loopback tests
B. autonegotiation
C. UDLD
D. protocol analyzer

Answer: A

Explanation

A loopback test is a test in which a signal in sent from a communications device and returned (looped back) to it as a way to determine whether the device is working right or as a way to pin down a failing node in a network. Loopback testing is a very effective way to isolate a failing T1 (or E1). Loopback testing includes soft loopback and hard loopback.

Soft loopback uses the configuration commands on the Cisco gateway for testing while hard loopback uses a special loopback plug to loop the traffic from the E1/T1 port back into the E1/T1 port.

Reference: https://www.cisco.com/c/en/us/support/docs/voice/device-signaling/116492-trouble-t1e1-00.html

Note: UDLD is a data link layer protocol and mostly used in fiber-optic networks only.

Question 7

Which switching method checks for CRC errors?

A. store-and-forward
B. cut-through
C. fragment-free
D. Layer 3

Answer: A

Explanation

Store-and-Forward: Store-and-Forward switching will wait until the entire frame has arrived prior to forwarding it. This method stores the entire frame in memory. Once the frame is in memory, the switch checks the destination address, source address, and the CRC. If no errors are present, the frame is forwarded to the appropriate port. This process ensures that the destination network is not affected by corrupted or truncated frames.

Cut-Through: Cut-Through switching will begin forwarding the frame as soon as the destination address is identified. The difference between this and Store-and-Forward is that Store-and-Forward receives the whole frame before forwarding.Since frame errors cannot be detected by reading only the destination address, Cut-Through may impact network performance by forwarding corrupted or truncated frames

Fragment-free switching works like cut-through switching with the exception that a switch in fragment-free mode stores the first 64 bytes of the frame before forwarding. Fragment-free switching can be viewed as a compromise between store-and-forward switching and cut-through switching. The reason fragment-free switching stores only the first 64 bytes of the frame is that most network errors and collisions occur during the first 64 bytes of a frame.

But fragment-free method does not check CRC errors as it does not have a full frame with CRC included to check. It only checks the size of the frame. If the switch receives a frame that is under 64 bytes in size (called runts), the frame is discarded. The problem with this method is that you can still receive frames with CRC errors because you can still receive frames 64 bytes in size but still be corrupted.

Question 8

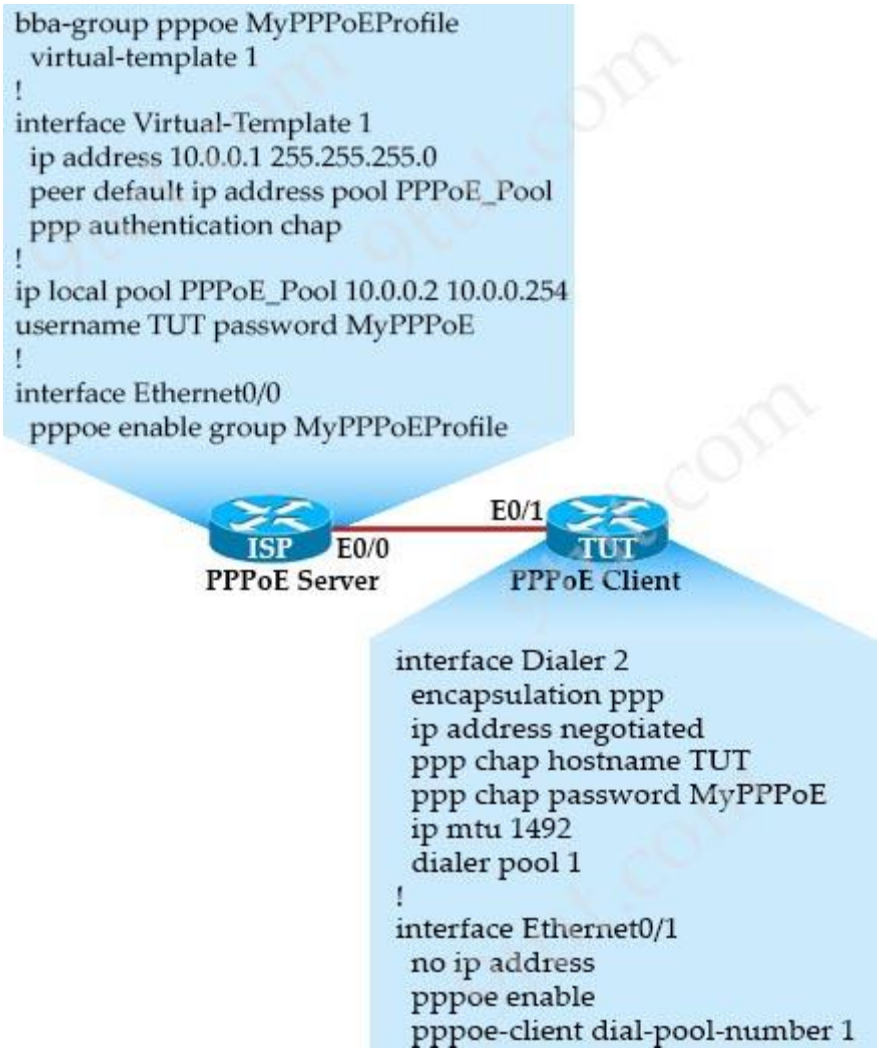
Which two actions must you take to correctly configure PPPoE on a client? (Choose two)

A. Define a dialer interface
B. Create a dialer pool and bind it to the virtual template
C. Define a virtual template interface
D. Create a dialer pool and bind it to the physical interface.
E. Create a BBA group and link it to the dialer interface

Answer: A D

Explanation

The picture below shows all configuration needed for PPPoE. But please only pay attention to the PPPoE on the client:



From this configuration we see that we need to create a Dialer interface first (interface Dialer 2) and create a dialer pool (dialer pool 1) under it. Then bind this dialer pool to the physical E0/1 interface (with the command "pppoe-client dial-pool-number 1" command).

Question 9 (same as Q.12 of https://www.9tut.com/ospf-questions-2)

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 10

Which two statements about an Ethernet frame source address are true? (Choose two)

A. The address is 4 bits long.
B. The leftmost bit is always 0.
C. The address is 6 bytes long.
D. The leftmost bit is always 1.
E. The address is 4 bytes long

Answer: B C

Explanation

The Ethernet frame source address is the hardware (MAC) address of the source network adapter.

Source addresses (SA): Consists of 6 bytes. The SA field identifies the sending station. The SA is always an individual address, and the leftmost bit in the SA field (called I/G bit) is always 0 (because the source address is always unicast). With multicast address, the I/G bit is set to 1.

For more information about Ethernet frame please visit
http://www.ciscopress.com/articles/article.asp?p=2348264

Question 11

Which two features are compatible with port security? (Choose two)

A. SPAN destination port
B. voice VLAN
C. DTP
d. EtherChannel
E. SPAN source port

Answer: B E

Explanation

Some restrictions of port security are shown below:

+ Port security supports private VLAN (PVLAN) ports.
+ Port security supports IEEE 802.1Q tunnel ports.
+ **Port security does not support Switch Port Analyzer (SPAN) destination ports**.
+ Port security supports access and trunking EtherChannel port-channel interfaces.
+ You can configure port security and 802.1X port-based authentication on the same port.
+ Port security supports nonnegotiating trunks -> From this we can deduce Port security does not support DTP (nonnegotiating trunks)

Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst6500/ios/12-2SY/configuration/guide/sy_swcg/port_security.html#49710

Although Port-security supports voice VLAN but we need additional command to make it works. This example shows how to designate a maximum of one MAC address for a voice VLAN (for a Cisco IP Phone, let's say) and one MAC address for the data VLAN (for a PC, let's say) on Fast Ethernet interface 5/1:

```
Switch(config)# interface fa5/1
Switch(config-if)# switchport mode access
Switch(config-if)# switchport port-security
Switch(config-if)# switchport port-security mac-address sticky
Switch(config-if)# switchport port-security maximum 1 vlan voice
Switch(config-if)# switchport port-security maximum 1 vlan access
```

Reference: https://www.cisco.com/c/en/us/td/docs/switches/lan/catalyst4500/12-2/31sg/configuration/guide/conf/port_sec.html#wp1134174

Question 12

After an FTP session to ftp.cisco.com fails, you attempt to ping the server. A ping to ftp.cisco.com also fails, but a ping to the IP address of the server is successful. What is reason for the failed FTP session?

A. The assigned DNS server is down
B. An ACL is blocking the FTP request
C. A firewall is blocking traffic from the FTP site
D. The internet connection is down

Answer: A

Question 13

Which two circumstances can prevent two routers from establishing an OSPF neighbor adjacency? (Choose two)

A. mismatched autonomous system numbers
B. an ACL blocking traffic from multicast address 224.0.0.10
C. mismatched process IDs
D. mismatched hello timers and dead timers
E. use of the same router ID on both devices

Answer: D E

Explanation

In order to become OSPF neighbor following values must be match on both routers:

+ **Area ID**
+ Authentication
+ **Hello and Dead Intervals**
+ Stub area Flag
+ MTU Size

OSPF uses multicast address of 224.0.0.5 to send Hello messages. Only EIGRP uses the multicast address 224.0.0.10 -> Answer B is not correct.

OSPF does not have autonomous system numbers -> Answer A is not correct.

The process IDs of OSPF is only locally significant so they can be the same or different between two OSPF routers -> Answer C is not correct.

If we configure the same router ID on two OSPF routers, for example:

```
router ospf 1
router-id 1.1.1.1
```

Then you will see such an error:
%OSPF-4-DUP_RTRID1: Detected router with duplicate router ID

Question 14

Which two facts must you take into account when you deploy PPPoE? (Choose two)

A. DDR idle timers must be configured to support VPDN login.
B. PPPoE supports a maximum of 10 clients per customer premises equipment
C. DDR is not supported
D. You must manually configure IP addresses on the PPPoE interface
E. An individual PVC can support one PPPoE client

Answer: B E

Explanation

The PPPoE Client DDR Idle Timer feature supports the dial-on-demand routing (DDR) interesting traffic control list functionality of the dialer interface with a PPP over Ethernet (PPPoE) client, but also keeps original functionality (PPPoE connection up and always on after configuration) for those PPPoE clients that require it.

Reference: https://www.cisco.com/c/en/us/td/docs/ios/12_2sb/12_2sba/feature/guide/sbpecls.html

But it is just an optional feature and we don't need DDR idle timers to be configured to support VPDN login -> Answer A is not correct.

According to this link: http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/bbdsl/configuration/xe-3s/bba-pppoe-client.html

The PPPoE client does not support the following:
+ More than ten clients per customer premises equipment (CPE)-> This means a CPE can support up to 10 clients so answer B is correct.

DDR is support in PPPoE since IOS v12.2 -> Answer C is not correct.

We can assign IP addresses via DHCP on the PPPoE interface -> Answer D is not correct.

Prior to Cisco IOS Release 12.4(15)T, one ATM PVC supported one PPPoE client. With the introduction of the Multiple PPPoE Client feature in Cisco IOS Release 12.4(15)T, one ATM PVC supports multiple PPPoE clients, allowing second line connection and redundancy. Multiple PPPoE clients can run concurrently on different PVCs, but each PPPoE client must use a separate dialer interface and a separate dialer pool. Therefore answer E is still correct.

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/bbdsl/configuration/15-mt/bba-15-mt-book/bba-ppoe-client.pdf

Question 15

Which circumstance is a common cause of late collisions?

A. native VLAN mismatch
B. overloaded hardware queues
C. duplex mismatch
D. software misconfiguration

Answer: C

Explanation

A late collision is defined as any collision that occurs after the first 512 bits of the frame have been transmitted. The usual possible causes are full-duplex/half-duplex mismatch, exceeded Ethernet cable length limits, or defective hardware such as incorrect cabling, non-compliant number of hubs in the network, or a bad NIC.

Late collisions should never occur in a properly designed Ethernet network. They usually occur when Ethernet cables are too long or when there are too many repeaters in the network.

Reference: https://www.cisco.com/en/US/docs/internetworking/troubleshooting/guide/tr1904.html

Question 16

Which two address spaces are valid Class B IPv4 ranges that are non-routable to the internet? (Choose two)

A. 10.0.0.0 through 10.0.255.255
B. 169.254.0.0 through 169.254.255.255
C. 172.16.0.0 through 172.31.255.255
D. 172.16.0.0 through 172.32.255.255
E. 192.168.0.0 through 192.168.255.255

Answer: B C

Explanation

When a host fails to dynamically acquire an address, it can optionally assign itself a link-local IPv4 address in accordance with RFC 3927. Microsoft's term for this is Automatic Private Internet Protocol Addressing (APIPA), which ranges from 169.254.0.0 to 169.254.255.255 (169.254.0.0/16).

Addresses from 172.16.0.0 to 172.31.255.255 belong to the private IPv4 address range of class B.

Note: class B range: 128.0.0.0 – 191.255.255.255 (with default subnet mask of /16)

Question 17

Which access layer threat mitigation technique security by acting as a filter between trusted and untrusted traffic sources?

A. DHCP snooping
B. 802.1X
C. dynamic packet inspection
D. a nondefault native VLAN

Answer: B

Explanation

The IEEE 802.1x standard defines a client-server-based access control and authentication protocol that prevents unauthorized clients from connecting to a LAN through publicly accessible ports unless they are properly authenticated. The authentication server authenticates each client connected to a switch port before making available any services offered by the switch or the LAN. Until the client is authenticated, 802.1x access control allows only Extensible Authentication Protocol over LAN (EAPOL), Cisco Discovery Protocol (CDP), and Spanning Tree Protocol (STP) traffic through the port to which the client is connected. After authentication is successful, normal traffic can pass through the port.

(Reference: http://www.cisco.com/c/en/us/td/docs/switches/metro/me3400e/software/release/12-2_58_se/configuration/guide/ME3400e_scg/sw8021x.pdf)

Question 18

Which two statements correctly describe the ping utility? (Choose two)

A. It uses ICMP
B. It can identify source of an ICMP “time exceeded”message
C. It can identify the path that a packet takes to a remote device
D. It can verify connectivity to a remote device without identifying the path
E. It use UDP

Answer: A D

Question 19 (posted at Q.1 https://www.9tut.com/dns-questions)

Which two server types are used to support DNS lookup? (Choose two)

A. web server
B. name resolver
C. authoritative name sever
D. ESX host
E. file transfer server

Answer: B C

Explanation

All DNS servers fall into one of four categories: Recursive resolvers, root name servers, TLD name servers, and authoritative name servers. In a typical DNS lookup (when there is no caching in play), these four DNS servers work together in harmony to complete the task of delivering the IP address for a specified domain to the client (the client is usually a stub resolver – a simple resolver built into an operating system).

Reference: https://www.cloudflare.com/learning/dns/dns-server-types/

Question 20

Which two functions can be performed by local DNS server? (Choose two)

A. copying updated IOS images to Cisco switches
B. resolving names locally
C. transferring split horizon traffic between zones
D. assigning IP addresses to local clients
E. forwarding name resolution requests to an external DNS server

Answer: B E

Question 21 (posted at https://www.9tut.com/cdp-lldp-questions)

Which command on a switch, to enable neighbor discovery in a multivendor environment?

A. cdp run
B. enable cdp
C. lldp run
D. enable lldp

Answer: C

Question 22 (posted at https://www.9tut.com/ip-routing-3)

Which two task does a router perform when it receives a packet that is being forwarded from one network to another? (Choose two)

A. It encapsulates the layer 2 packet
B. It examines the MAC address table for the forwarding interface
C. It removes the layer 2 frame header and trailer
D. It examines the routing table for the best path to the destination IP address of the packet
E. It removes the layer3 frame header and trailer

Answer: C D

Question 23

Which two approaches are common when troubleshooting network issues? (Choose two)

A. round-robin
B. divide and conquer
C. policing
D. top down
E. layer-by-layer

Answer: B D

Explanation

Commonly used troubleshooting approaches include the following:
+ The top-down approach
+ The bottom-up approach
+ The divide-and-conquer approach
+ The follow-the-path approach

+ The spot-the-differences approach
+ The move-the-problem approach

For more information about these approaches, please visit:
http://www.ciscopress.com/articles/article.asp?p=2273070&seqNum=2

Question 24 (posted at https://www.9tut.com/aaa-questions)

Which three features are represented by the letter A in AAA? (Choose three)

A. authorization
B. accountability
C. authentication
D. authority
E. accessibility
F. accounting

Answer: A C F

Question 25 (posted at https://www.9tut.com/switch-questions)

Refer to the exhibit. What is the effect of the given configuration?

```
Switch#configuration terminal
Switch#interface VLAN 1
Switch(config-if)#ip address 192.168.2.2 255.255.255.0
Switch(config-if)#end
```

A. It configures an inactive switch virtual interface.
B. It configures an active management interface.
C. It configures the native VLAN.
D. It configures the default VLAN.

Answer: A

Explanation

In the configuration above, the “no shutdown” command was missing so interface Vlan 1 is still inactive. Notice that only the loopback command does not need the “no shutdown” command to work.

Question 26 (posted at https://www.9tut.com/etherchannel-questions)

Which two EtherChannel PAgP modes can you configure? (Choose two)

A. Auto
B. Desirable
C. Active
D. Passive
E. On

Answer: A B

Explanation

There are two PAgP modes:

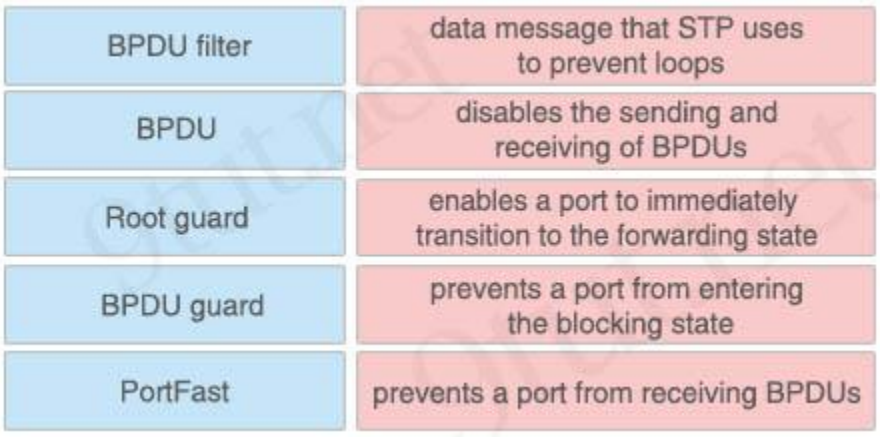
Auto	Responds to PAgP messages but does not aggressively negotiate a PAgP EtherChannel. A channel is formed only if the port on the other end is set to Desirable. This is the default mode.
Desirable	Port actively negotiates channeling status with the interface on the other end of the link. A channel is formed if the other side is Auto or Desirable.

The table below lists if an EtherChannel will be formed or not for PAgP:

PAgP	**Desirable**	**Auto**
Desirable	Yes	Yes
Auto	Yes	No

Question 27

Drag and drop the STP features from the left onto the correct descriptions on the right.



Answer:

+ data message that STP uses to prevent loops: BPDU
+ disables the sending and receiving of BPDUs: BPDU filter
+ enables a port to immediately transition to the forwarding state: PortFast
+ prevents a port from entering the blocking state: Root guard
+ prevents a port from receiving BPDUs: BPDU guard

Explanation

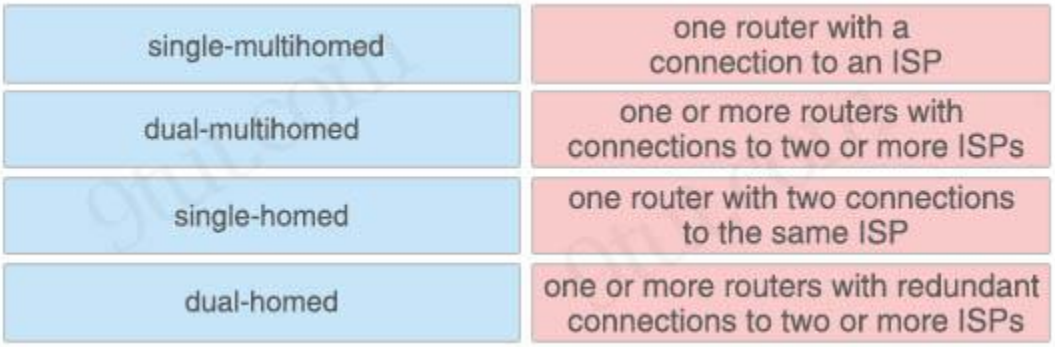
If a BPDU is received on a port where **BPDU guard** is configured, that port is put into errdisable state (nearly the same as shutdown state) immediately.

Root Guard ensures that the port on which root guard is enabled is the designated port. If the bridge receives superior BPDUs on a root guard-enabled port, root guard moves this port to a root-inconsistent STP state (which is equal to STP listening state). No traffic is forwarded across this port. In this way, the root guard enforces the position of the root bridge.

When **BPDU filtering** is enabled on a specific port, it prevents this port from sending or receiving BPDUs (so if BPDUs are seen, they will be dropped)

Question 28

Drag and drop each WAN design option on the left onto the correct description on the right.



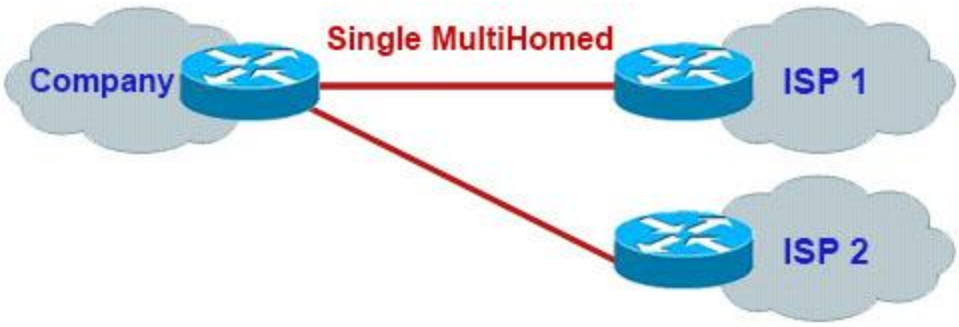
Answer:

single-multihomed: one or more routers with connections to two or more ISPs
dual-multihomed: one or more routers with redundant connections to two or more ISPs
single-homed: one router with a connection to an ISP
dual-homed: one router with two connections to the same ISP

Explanation

Single Multihomed

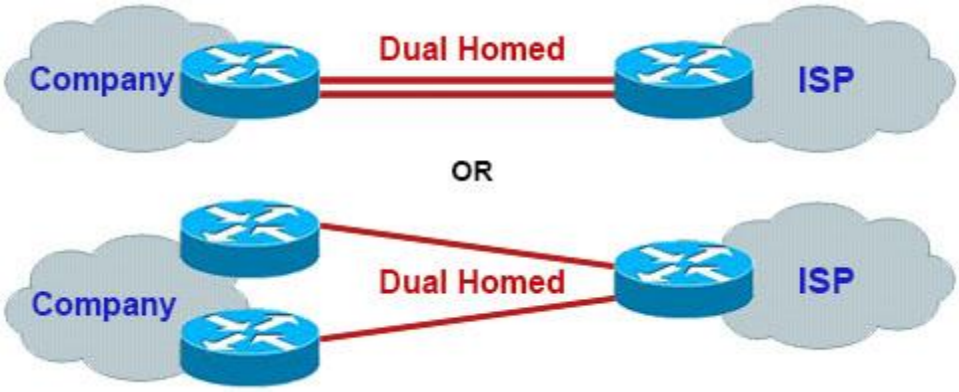
The next design is called “single multihomed” refers to:
+ Having connections to multiple ISPs from one router at the company
+ Single link per ISP.



This design is good if we want to separate important traffic to a specific ISP while still has the other ISP as the fail over path.

Dual homed

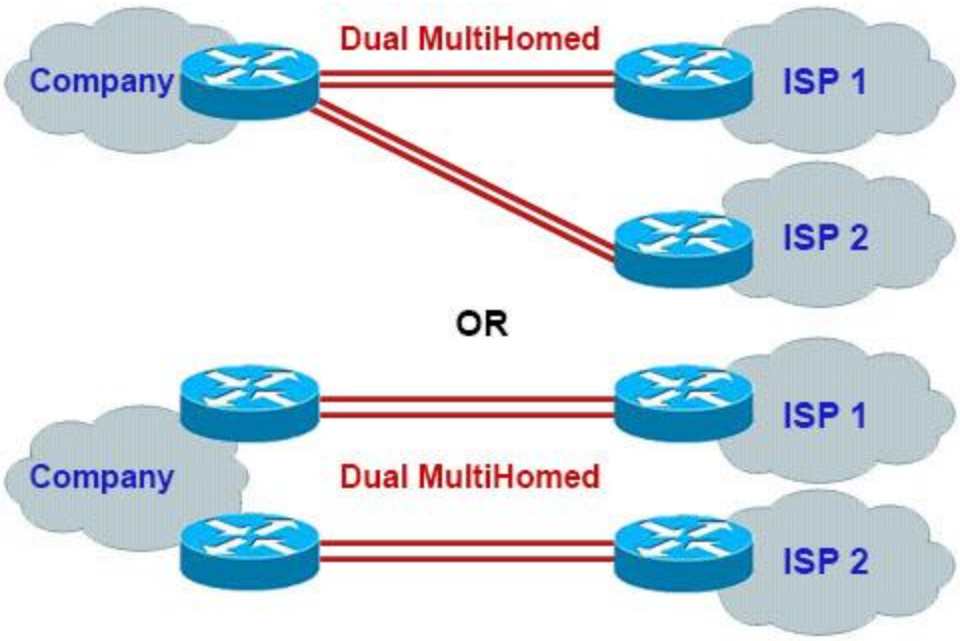
The next design is called “dual homed”, in which the “dual” word refers to the designs with two links to the same router.



In this design we can use BGP to share the traffic between two routers of the company with our specific ratio (load balancing) or fail over. Of course this design is better in redundancy than the first one but it still has a “single point of failure” at the ISP router.

Dual Multihomed

And the last design is called “dual multihomed” refers to:
+ Multiple links per ISP
+ Multiple links to Company



CCNAv3 – New Questions 2

Question 1

What is the maximum number of switches that StackWise can support in one stack?

A. 6
B. 8
C. 9
D. 10

Answer: C

Question 2

Which two tasks should you perform to begin troubleshooting a network problem? (Choose two)

A. Gather all the facts
B. Monitor and verify the resolution
C. Define the problem as a set of symptoms and causes
D. Analyze the results
E. Implement an action plan

Answer: A C

Explanation

The following steps detail the problem-solving process:

Step 1 When analyzing a network problem, make a clear problem statement. You should **define the problem in terms of a set of symptoms and potential causes**.
To properly analyze the problem, identify the general symptoms and then ascertain what kinds of problems (causes) could result in these symptoms. For example, hosts might not be responding to service requests from clients (a symptom). Possible causes might include a misconfigured host, bad interface cards, or missing router configuration commands.

Step 2 Gather the facts that you need to help isolate possible causes.
Ask questions of affected users, network administrators, managers, and other key people. Collect information from sources such as network management systems, protocol analyzer traces, output from router diagnostic commands, or software release notes.

Step 3 Consider possible problems based on the facts that you gathered…
Step 4 Create an action plan based on the remaining potential problems…
Step 5 Implement the action plan, performing each step carefully while testing to see whether the symptom disappears.
Step 6 Whenever you change a variable, be sure to gather results. Generally, you should use the same method of gathering facts that you used in Step 2 (that is, working with the key people affected, in conjunction with utilizing your diagnostic tools).
Step 7 Analyze the results to determine whether the problem has been resolved. If it has, then the process is complete.
Step 8 If the problem has not been resolved, you must create an action plan based on the next most likely problem in your list. Return to Step 4, change one variable at a time, and repeat the process until the problem is solved.

Reference: https://www.cisco.com/en/US/docs/internetworking/troubleshooting/guide/tr1901.html

Question 3

Which command should you enter to configure a single port to prevent alternative ports from becoming designated ports?

A. spanning-tree etherchannel misconfig
B. spanning-tree loopguard default
C. spanning-tree guard loop
D. spanning-tree guard root

Answer: C

Explanation

Loop guard feature provides additional protection against STP loops. An STP loop is created when an STP blocking port in a redundant topology erroneously transitions to the forwarding state. **This usually happens because one of the ports of a physically redundant topology** (not necessarily the STP blocking port) **no longer receives STP BPDUs**. In its operation, STP relies on continuous

reception or transmission of BPDUs based on the port role. The designated port transmits BPDUs, and the non-designated port receives BPDUs.

When one of the ports in a physically redundant topology no longer receives BPDUs, the STP conceives that the topology is loop free. Eventually, the blocking port from the alternate or backup port becomes designated and moves to a forwarding state. This situation creates a loop.

The loop guard feature makes additional checks. **If BPDUs are not received on a non-designated port, and loop guard is enabled, that port is moved into the STP loop-inconsistent blocking state, instead of the listening/learning/forwarding state**. Without the loop guard feature, the port assumes the designated port role. The port moves to the STP forwarding state and creates a loop.

Question 4

Which two pieces of information can you learn by viewing the routing table? (Choose two)

A. whether an ACL was applied inbound or outbound to an interface
B. the length of time that a route has been known
C. the EIGRP or BGP autonomous system
D. which neighbor adjacencies are established
E. whether the administrative distance was manually or dynamically configured

Answer: B E

Question 5

What are two reasons to use multicast to deliver video traffic, instead of unicast or broadcast? (Choose two)

A. It supports distributed applications.
B. It enables multiple clients to send video streams simultaneously.
C. It provides reliable TCP transport.
D. It enables multiple servers to send video streams simultaneously.
E. It enables multiple clients to receive the video stream simultaneously.

Answer: A E

Question 6

What are two benefits that the UDP protocol provide for application traffic? (Choose two)

A. UDP provides a built-in recovery mechanism to retransmit lost packets.
B. The application can use checksums to verify the integrity of application data.
C. The CTL field in the UDP packet header enables a three-way handshake to establish the connection.

D. UDP maintains the connection state to provide mode stable connections that TCP.
E. UDP traffic has lower overhead than TCP traffic.

Answer: B E

Question 7

Which command should you enter to configure a device as an NTP server?

A. ntp authenticate
B. ntp master
C. ntp peer
D. ntp server

Answer: B

Explanation

The command

Router(config)#**ntp server 192.168.1.1**

configures the local device to use a remote NTP clock source from 192.168.1.1 while the command:

Router(config)#**ntp master 1**

configures the local device as a NTP reference clock source with stratum of 1.

Question 8

Which two statements about the successor and feasible successor are true? (Choose two)

A. The feasible successor is stored in both the topology table and the routing table.
B. The successor is the secondary route.
C. The successor is stored in the routing table.
D. The successor is the primary route.
E. The feasible successor has a lower metric than the successor.

Answer: C D

Explanation

The feasible successor is only stored in the topology table, not routing table. It has higher metric than the successor.

The successor is the main route that is placed into the routing table.

Question 9 (same as Q.9 https://www.9tut.com/ip-routing-3)

Which two statements about static routing are true? (Choose two)

A. It allows packets to transmit a different path if the topology changes.
B. Its initial implementation is more complex than OSPF.
C. It provides only limited security unless the administrator performs additional configuration.
D. It allows the administrator to determine the entire path of a packet.
E. Its default administrative distance is lower than EIGRP.

Answer: D E

Explanation

Dynamic routing is less secure than static routing because the interfaces identified by the routing protocol send routing updates out.

Static routing may have extra security by manually admitting or rejecting routing to certain networks. So if answer C only states “It provides limited security” then it is correct but with the “unless” word it is not correct.

Question 10

Which two statements about TACACS+ are true? (Choose two)

A. It combines authentication and authorization to simplify configuration.
B. It uses TCP port 49.
C. It supports full command logging.
D. It encrypts the password only.
E. It uses UDP port 49.

Answer: B C

Explanation

TACACS+ runs on **TCP** port 49 and supports full command logging (commands typed by users can be recorded on the servers) while RADIUS does not support.

Question 11

Which two circumstances can prevent two routers from establishing an EIGRP neighbor adjacency? (Choose two)

A. An ACL is blocking traffic from multicast address 224.0.0.5.
B. The routers have mismatched K values.
C. Both routers have the same router ID.
D. The two routers have the same autonomous system number.
E. The routers are on different subnets.

Answer: B E

Explanation

To become a neighbor, the following conditions must be met:
+ The router must hear a Hello packet from a neighbor.
+ The EIGRP autonomous system must be the same.
+ K-values must be the same.

Question 12

Which two commands should you enter to view the PID and serial number of a router? (Choose two)

A. show license status
B. show version
C. show license udi
D. show license
E. show license feature

Answer: B C

Explanation

The command “show license udi” sisplays all the UDI values that can be licensed in a system.

The unique device identifier (UDI) has two components: the product ID (PID) and the serial number of the router. The “show license udi” command provides this information:

```
R1#  show license udi
Device#  PID           SN            UDI
------------------------------------------------------------------
*0       CISCO1941/K9  FTX1636848Z   CISCO1941/K9:FTX1636848Z
```

The “show version” also shows the license information:

```
R1# show version
<output omitted>
License Info:
License UDI:
-------------------------------------------------
Device#    PID                    SN
-------------------------------------------------
*0         CISCO1941/K9           FTX1636848Z
Technology Package License Information for Module:'c1900'
-----------------------------------------------------------------
Technology    Technology-package          Technology-package
               Current       Type         Next reboot
-----------------------------------------------------------------
ipbase        ipbasek9      Permanent     ipbasek9
security      seck9         Permanent     seck9
uc            None          None          None
data          None          None          None
```

Note: The “show license” does not reveal either PID or SN:

```
R1# show license
Index 1 Feature: ipbasek9
        Period left: Life time
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
Index 2 Feature: securityk9
        Period left: Life time
        License Type: Permanent
        License State: Active, In Use
        License Count: Non-Counted
        License Priority: Medium
Index 3 Feature: datak9
        Period left: Not Activated
        Period Used: 0  minute  0  second
        License Type: EvalRightToUse
        License State: Not in Use, EULA not accepted
        License Count: Non-Counted
        License Priority: None
<output omitted>
```

Question 13

Which value is used to build the CAM table?

A. source IP address
B. destination MAC address
C. source MAC address
D. destination IP address

Answer: C

Explanation

The MAC addresses in the CAM table are the source MAC addresses only.

Question 14

Which keyboard shortcut can you use to exit the System Configuration Dialog on a Cisco networking device and return to privileged EXEC mode without making changes?

A. Ctrl-C
B. Ctrl-V
C. Shift-Esc
D. Ctrl-Alt-Delete

Answer: A

Question 15

Which two statements about PDU encapsulation are true? (Choose two)

A. During encapsulation, each layer adds a header and trailer to the PDU from the layer below.
B. During encapsulation, each layer adds a header and sometimes adds a trailer to the PDU from the layer above.
C. PDU encapsulation takes place only at the transport layer.
D. In the TCP/IP reference model, PDU encapsulation occurs on the network layer.
E. In the TCP/IP reference model, PDU encapsulation starts on the Internet layer with the data from the application layer.

Answer: B C

Explanation

Protocol Data Unit (PDU) represents a unit of data specified in the protocol of a given layer, which consists of protocol control information and user data. In Layer 1, PDU is a bit, in Layer 2 it is a frame, in Layer 3 it is a packet and in Layer 4 it is a segment. In Layer 5 and above, PDU is referred to as data.

Question 16

Which two statements about RIPv2 are true? (Choose two)

A. It sends periodic updates via broadcast
B. It does not support clear text authentication, similar to RIPv1
C. It uses the Bellman-Ford routing algorithm

D. It supports CIDR and VLSM
E. It stores RIP neighbor adjacency information in a neighbor table

Answer: C D

Explanation

CIDR stands for Classless In4ter-Domain Routing, the difference between CIDR and VLSM is slim and those terms are interchangeable at CCNA level.

Question 17

What is the easiest way to verify the Layer 3 path from a router to host 192.168.2.1?

A. Execute a ping from the router to host 192.168.2.1
B. Add a static route for host 192.168.2.1 to the routing table of the router
C. Use Telnet to connect the router to host 192.168.2.1
D. Execute a traceroute from the router to host 192.168.2.1

Answer: D

Question 18

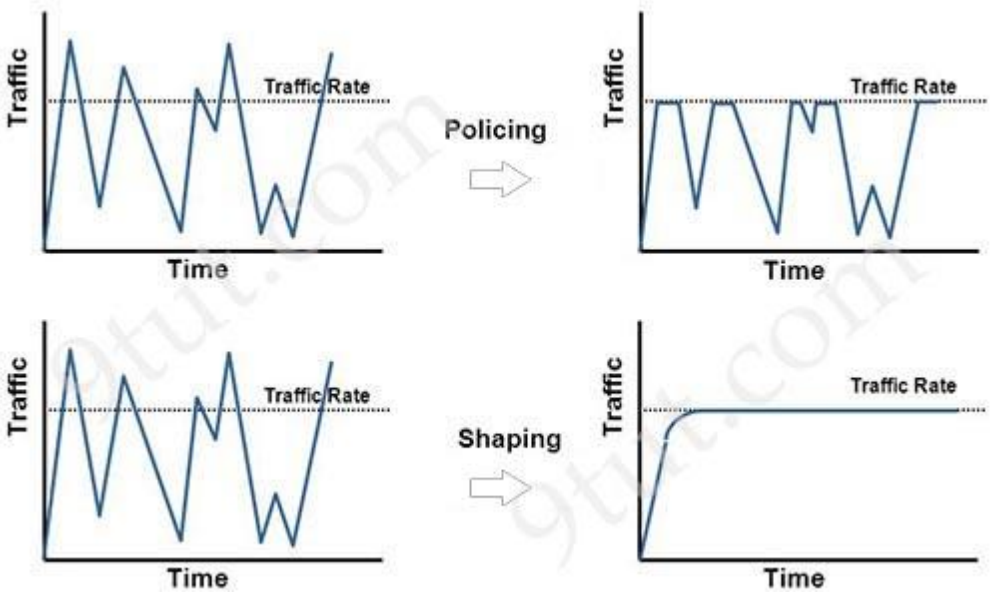
Which QoS feature can drop traffic that exceeds the committed access rate?

A. FIFO
B. policing
C. shaping
D. weighted fair queuing

Answer: B

Explanation

Traffic policing propagates bursts. **When the traffic rate reaches the configured maximum rate (or committed information rate), excess traffic is dropped** (or remarked)



Question 19

Which two commands should you enter to prevent a Cisco device from sharing information with upstream devices? (Choose two)

A. R1(config-if)#no cdp enable
B. R1(config)#no cdp enable
C. R1(config)#no cdp advertise-v2
D. R1(config)#no cdp run
E. R1(config-if)#no cdp run

Answer: A D

Explanation

CDP is enabled by default on all Cisco routers. We can turn it off with the following command on global configuration mode:

Router(config)#no cdp run

Note: CDP can be turned on or turned off on each interface. For example to turn off CDP on an interface we use this command:

Router(config-if)#no cdp enable

Question 20

Which two goals are reasons to implement private IPv4 addressing on your network? (Choose two)

A. Reduce the risk of a network security breach.
B. Comply with local law.

C. Conserve IPv4 addresses.
D. Comply with PCI regulations.
E. Reduce the size of the forwarding table on network routers.

Answer: A C

Question 21

Which two commands can you enter to configure an interface to actively negotiate an EtherChannel? (Choose two)

A. channel-group 10 mode desirable
B. channel-group 10 mode on
C. channel-group 10 mode passive
D. channel-group 10 mode active
E. channel-group 10 mode auto

Answer: A D

Explanation

The mode “desirable” (PAgP) and “active” (LACP) can actively negotiate an EtherChannel.

Question 22

Which two events occur on the interface, if packets from an unknown source address arrive after the interface learns the maximum number of secure MAC addresses? (Choose two)

```
Port Security              : Enabled
Port Status                : Secure-up
Violation Mode             : Protect
Aging Time                 : 0 mins
Aging Type                 : Absolute
SecureStatic Address Aging : Disabled
Maximum MAC Addresses      : 4
Total MAC Addresses        : 3
Configured MAC Addresses   : 1
Sticky MAC Addresses       : 2
Last Source Address:Vlan   : 0001.0fAA.33BB:1
Security Violation Count   : 0
```

A. A syslog message is generated
B. The port LED turns off
C. The interface drops traffic from unknown MAC addresses
D. The interface is error-disabled
E. The security violation counter does not increment

Answer: C E

Explanation

In “Protect” mode the security violation counter does not increase when a violation occurs. The interface is not put into error-disabled mode either

Question 23

Which two statements about UTP cables are true? (Choose two)

A. All Ethernet cable types from Category 1 through Category 6 are suitable for transmitting data in the appropriate environments.
B. Category 6 Ethernet cables are appropriate for installation of up to 200m.
C. Category 6a Ethernet cable can transmit up to 10 Gbps.
D. Category 5 Ethernet cables support speeds up to 1000 Mbps beyond 100m.
E. Category 5e Ethernet cables support speeds up to 1000 Mbps.

Answer: C E

Explanation

Category 5 – Data-grade was typically used with Fast Ethernet operating at 100Mbps with a transmission range of 100 meters.

Category 5e – Data-grade cable used on networks that run at 10/100Mbps and even up to 1000Mbps. Category 5e cabling can be used up to 100 meters, depending on the implementation and standard used. Category 5e cable provides a minimum of 100MHz of bandwidth.

Category 6 – High-performance UTP cable capable of transmitting data up to 10Gbps. Category 6 has a minimum of 250MHz of bandwidth and specifies cable distances up to 100 meter cable length with 10/100/1000Mbps transfer, along with 10Gbps over shorter distances.

Category 6a – Category 6a (augmented 6) offers improvements over Category 6 by offering a minimum of 500MHz of bandwidth. It specifies transmission distances up to 100m with 10Gbps networking speeds.

In conclusion:

Answer A is not correct as Category 1 is voice-grade UTP telephone cable. Because of its susceptibility to interference and attenuation and its low bandwidth capability, Category 1 UTP is not practical for network applications.

Answer B is not correct as Category 6 Ethernet cables are appropriate for installation of up to 100m only.

Answer C is correct as Category 6a specifies transmission distances up to 100m with 10Gbps networking speeds.

Answer D is not correct because Category 5 can only be used up to 100 meters only. Although Category 5 can go faster (the IEEE 802.11ae standard specifies 1000Mbps over Category 5 cable)

Answer E is correct because Cat 5e cable is used on networks that run at 10/100Mbps and even up to 1000Mbps.

Question 24

Which frame type allows STP to compute the spanning-tree topology?

A. LSA
B. RSTP
C. LSP
D. BPDU

Answer: D

Question 25

Which two statements about the interface that generated the output are true? (Choose two)

```
Port Security              : Enabled
Port Status                : Secure-up
Violation Mode             : Protect
Aging Time                 : 5 mins
Aging Type                 : Inactivity
SecureStatic Address Aging : Disabled
Maximum MAC Addresses      : 3
Total MAC Addresses        : 3
Configured MAC Addresses   : 1
Sticky MAC Addresses       : 2
Last Source Address:Vlan   : 0001.0fAA.33BB:1
Security Violation Count   : 0
```

A. The interface is error-disabled if packets arrive from a new unknown source address.
B. It has dynamically learned two secure MAC addresses.
C. The security violation counter increments if packets arrive from a new unknown source address.
D. Learned MAC addresses are deleted after five minutes of inactivity.
E. It has dynamically learned three secure MAC addresses.

Answer: B D

Explanation

There are two “sticky MAC Addresses” so it has learned two secure MAC addresses dynamically. The “Aging Time” is 5 minutes if no activity is detected (Aging Type: Inactivity)

Note: There is one MAC address that has been manually configured

Question 26

Users on the 172.17.22.0 network cannot reach the server located on the 172.31.5.0 network. The network administrator connected to router Coffee via the console port, issued the **show ip route** command. Based on the output of the **show ip route** command and the topology shown in the graphic, what is the cause of the failure?




```
Coffee #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, 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 172.19.22.2 to network 0.0.0.0

C     172.17.22.0 is directly connected, FastEthernet0/0
C     172.18.22.0 is directly connected, Serial0/0
S*    0.0.0.0/0 [1/0] via 172.19.22.2
```

A. The network has not fully converged.
B. IP routing is not enabled.
C. A static route is configured incorrectly.
D. The FastEthernet interface on Coffee is disabled.
E. The neighbor relationship table is not correctly updated.
F. The routing table on Coffee has not updated.

Answer: C

Explanation

There are no dynamic routing protocols running on Coffee router, only a default route is configured to route all traffic to 172.19.22.2 but we don’t know about this network. The correct IP address should be the IP address on the interface of Tea router which is connected to Coffee router (maybe 172.18.22.2).

Question 27 (posted at Q.16 https://www.9tut.com/router-questions)

Which configuration register value can you set on a Cisco device so that it ignores the NVRAM when it boots?

A. 0x2124
B. 0x2120
C. 0x2142
D. 0x2102

Answer: C

Explanation

To reset the password we can type “confreg 0x2142” under rommon mode to set the configuration register to 2142 in hexadecimal (the prefix 0x means hexadecimal (base 16)). With this setting when that router reboots, it bypasses the startup-config.

Question 28

Which two statements about stacking Cisco switches are true? (Choose two)

A. The administrator can create only one stack of switches in a network which is under the same administrative domain.
B. Each switch manages its own MAC address table.
C. The administrator can add additional switches to the stack as demand increases.
D. When a new master switch it elected, if queries the previous master for its running configuration.
E. It enables the administrator to manage multiple switches from a single management interface.

Answer: C E

Question 29 (posted at Q.2 https://www.9tut.com/dns-questions)

Which two functions can be performed by a local DNS server? (Choose two)

A. forwarding name resolution requests to an external DNS server
B. resolving names locally
C. copying updated IOS images to Cisco switches
D. assigning IP addresses to local clients
E. transferring split horizon traffic between zones

Answer: A B

Question 30 (posted at Q.2 https://www.9tut.com/security-questions)

Which condition indicates that service password-encryption is enabled?

A. The local username password is in clear text in the configuration.
B. The enable secret is in clear text in the configuration.

C. The local username password is encrypted in the configuration.
D. The enable secret is encrypted in the configuration.

Answer: C

Explanation

The service password-encryption command will encrypt all current and future passwords so any password existed in the configuration will be encrypted.

Question 31 (posted at Q.7 https://www.9tut.com/ntp-questions)

Which command can you enter to verify that a router is synced with a configured time source?

A. show ntp authenticate
B. ntp associations
C. ntp server time
D. ntp authenticate
E. show ntp associations

Answer: E

Explanation

In the below output, the "show ntp associations" command reveals the IP address of the clock source (which is 209.65.200.226), the stratum (st) of this reference clock and if a router is synced with the configured time source (in this case R1 is synchronized with 10.1.2.1, presented by a "*").

```
R1#show ntp associations
      address         ref clock     st  when  poll reach  delay  offset    disp
*~10.1.2.1         209.65.200.226    9   509    64  200    32.2   15.44  16000.
 * master (synced), # master (unsynced), + selected, - candidate, ~ configured
```

Question 32 (posted at Q.5 https://www.9tut.com/drag-and-drop-4)

Drag and drop the DHCP client states from the left into the standard order in which the client passes through them on the right.

bound	first
initializing	second
rebinding	third
renewing	fourth
requesting	fifth
selecting	sixth

Answer:

initializing – first
selecting – second
requesting – third
bound (binding) – fourth
renewing – fifth
rebinding – sixth

Explanation

Reference: https://technet.microsoft.com/en-us/library/cc958935.aspx

Question 33 (posted at Q.3 https://www.9tut.com/drag-and-drop-3)

Drag drop about DNS related commands.

ip dns-server	enable dns lookup
ip domain list	specifies the default domain to append to unqualified host name
ip domain lookup	enable the DNS server on the device
ip domain name	statically map on ip address to host name
ip host	specifies a sequence of domain names
ip name-server	identified a DNS server to provide lookup service

Answer:

+ ip dns-server: identified a DNS server to provide lookup service
+ ip domain list: specifies a sequence of domain names.
+ ip domain lookup: enable dns lookup
+ ip domain name: specifies the default domain to append to unqualified host name.
+ ip host: statically map on ip address to host name
+ ip name-server: enable the DNS server on the device

Explanation

Reference: https://www.cisco.com/c/en/us/td/docs/ios-xml/ios/ipaddr_dns/configuration/15-mt/dns-15-mt-book/dns-config-dns.html

Question 34

Which two are features of IPv6? (Choose two)

A. multicast
B. broadcast
C. allcast
D. podcast
E. anycast

Answer: A E

Explanation

Anycast IPv6 addresses are 128-bit identifiers for interfaces and sets of interfaces. A packet sent to an anycast address is delivered to one of the interfaces identified by that address (the "nearest" one, according to the routing protocols' measure of distance)

Question 35

Drag drop question about "single-homed", ""dual homed", "single multi-homed", "dual multi-homed".

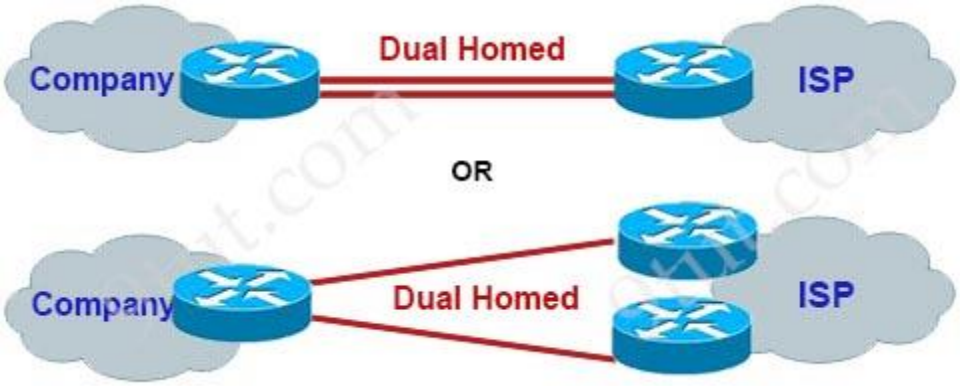
Answer:

Single-homed: single connection to only one ISP
Dual-homed: connected to the outside networks via only one ISP, but with two routers
Single multi-homed: connected to two or more ISPs with one connection each
Dual multi-homed: connected to two or more ISPs with two or more connections each

Explanation

Note: Remember that in word "homed" (in single-homed, dual-homed) means only one ISP while the word "multi-homed" (in single multi-homed, dual multi-homed) means two or more ISPs.

In a dual-homed setup, the router in a company is still connected to the outside networks via only one ISP, but with two routers or two connections. When one of the dual-homed connection fails, traffic can still flow via other connection so it can tolerate the loss of a network link.



Note: Below is an example of Single Homed setup:



Question 36

What is the minimum Ethernet frame size?

A. 32 bytes
B. 64 bytes
C. 1024 bytes
D. 1500 bytes

Answer: B

CCNAv3 – New Questions

Question 1

For which routes does the distance bgp 10 50 70 command set the administrative distance?

A. for BGP internal routes only
B. for all BGP routes
C. for BGP external routes only
D. between BGP routes and IGP routes

Answer: B

Question 2

Which effect of the **terminal monitor** command is true?

A. It puts the device into global configuration mode
B. It configures the device to log messages to the console
C. It displays the configuration of the syslog server
D. It configures a syslog server

Answer: B

Question 3

Refer to the exhibit.

```
ACL 102
access-list 102 deny tcp 172.21.1.1 0.0.0.255 any eq 80
access-list 102 deny ip any any

RouterA#show ip int
FastEthernet0/0 is up, line protocol is up
Internet address is 192.168.1.144/20
Broadcast address is 255.255.255.255
Address determined by DHCP
MTU is 1500 bytes
Helper address is not set
Directed broadcast forwarding is enabled
Outgoing access list is 102
Inbound access list is not set
Proxy ARP is enabled
```

An attempt to deny web access to a subnet blocks all traffic from the subnet. Which interface command immediately removes the effect of ACL 102?

A. no ip access-class 102 in
B. no ip access-class 102 out
C. no ip access-group 102 in
D. no ip access-group 102 out
E. no ip access-list 102 in

Answer: D

Question 4

Which prompt does a Cisco switch display when it is running in privileged exec mode?

A. switch(config-if)#
B. switch#
C. switch(config)#
D. switch>

Answer: B

Question 5

Which two differences between distance-vector and link-state routing protocols are true? (Choose two)

A. Only distance-vector routing protocols maintain identical topology tables on all connected neighbors
B. Distance-vector routing protocols are less susceptible to loops than link-state protocols
C. Only distance-vector routing protocols send full routing table updates
D. Only link-state routing protocols use the Bellman-Ford algorithm
E. Link-state routing protocols offer faster convergence than distance-vector protocols during network changes

Answer: C E

Question 6

Which option is the primary purpose of traffic shaping?

A. enabling policy-based routing
B. providing best-effort service
C. limiting bandwidth usage
D. enabling dynamic flow identification

Answer: C

Explanation

The primary reasons you would use traffic shaping are to control access to available bandwidth, to ensure that traffic conforms to the policies established for it, and to regulate the flow of traffic in order to avoid congestion that can occur when the sent traffic exceeds the access speed of its remote, target interface.

Reference:
https://www.cisco.com/c/en/us/td/docs/ios/12_2/qos/configuration/guide/fqos_c/qcfpolsh.html

Question 7

You are configuring an IP SLA ICMP Echo operation to troubleshoot a network connectivity issue. When do you enter an IP address to test the IP SLA?

A. When you enable the ICMP Echo operation
B. When you define the ICMP Echo operation
C. When you specify the test frequency
D. When you verify the IP SLA operation

Answer: B

Explanation

The ICMP Echo operation measures end-to-end response time between a Cisco router and any devices using IP so we have to enter an IP address to test.

Question 8

Which two statements about 1000BASE-T UTP cable are true? (choose two)

A. It use four wires
B. It is most appropriate for installations up to 1000 feet in length
C. It uses four wire pairs
D. It is most appropriate for installations up to 1000 meters in length
E. Both ends of the cable can transmit and receive simultaneously

Answer: C E

Explanation

1000BASE-T is Gigabit Ethernet (1 gigabit is 1000 megabits per second) on copper cables, using four pairs of Category 5 unshielded twisted pair to achieve the gigabit data rate. The “1000” in the media type designation refers to the transmission speed of 1000 Mbps. The “BASE” refers to baseband signalling, which means that only Ethernet signals are carried on the medium.

By using four wire pairs, they can transmit and receive simultaneously as they use two separate wire pairs for each task.

Question 9

Which two neighbor types are supported in BGP environment? (Choose two)

A. External
B. Autonomous
C. Remote

D. Internal
E. Directly attached

Answer: A D

Explanation

BGP supports two neighbor types which are external BGP (eBGP) neighbor and internal BGP (iBGP) neighbor.

Question 10

Which two statements about IPv6 multicast address are true? (Choose two)

A. If the liftime parameter is set to 1,the route is permanent.
B. They use the prefix FC80::/8
C. They use the prefix FF00::/8
D. They identify a group of interfaces on different devices
E. If the scope parameter is set to 5,the route is local to the node

Answer: C D

Explanation

Below is the list of common kinds of IPv6 addresses:

Loopback address	::1
Link-local address	FE80::/10
Site-local address	FEC0::/10
Global address	2000::/3
Multicast address	FF00::/8

Question 11

Under which two circumstances is a switch port that is configured with PortFast BPDU guard error-disable? (Choose two)

A. When the switch receives a request for an IP address from an individual PC
B. When the switch receives a BPDU from a connected switch
C. When a wireless access point running in bridge mode is connected to a switch

D. When a single IP address is configured on the switch
E. When a connected server has more than one VLAN configured on its NIC

Answer: B C

Question 12

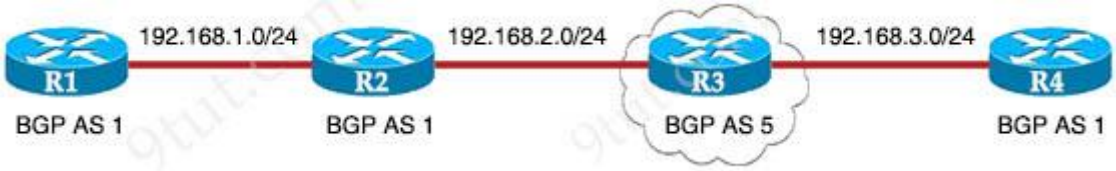
What are two advantages of static routing? (Choose two)

A. It can be implemented easily even in large environments
B. It produces minimal CPU load
C. It cannot be used to load-balance traffic over multiple links
D. It allows the administrator to control the path of traffic
E. It allows the network to respond immediately to changes

Answer: B D

Question 13

Refer to the exhibit. Which BGP configuration do you need to apply to router R4 to allow traffic to flow normally on this network?



A. router bgp 1
no synchronization
neighbor 192.168.1.1 remote-as 1
neighbor 192.168.1.1 ebgp-multihop 4
neighbor 192.168.2.1 remote-as 1
neighbor 192.168.2.1 ebgp-multihop 4
neighbor 192.168.3.1 remote-as 5
no auto-summary

B. router bgp 1
no synchronization
neighbor 192.168.1.1 remote-as 1
neighbor 192.168.2.1 remote-as 1
neighbor 192.168.3.1 remote-as 5
no auto-summary

C. router bgp 1
no synchronization

neighbor 192.168.1.1 remote-as 1
neighbor 192.168.2.1 remote-as 1
neighbor 192.168.2.1 ebgp-multihop 4
neighbor 192.168.3.1 remote-as 5
no auto-summary

D. router bgp1
no synchronization
neighbor 192.168.1.1 remote-as 1
neighbor 192.168.1.1 ebgp-multihop 4
neighbor 192.168.2.1 remote-as 1
neighbor 192.168.2.1 ebgp-multihop 4
neighbor 192.168.3.1 remote-as 5
neighbor 192.168.3.1 ebgp-multihop 4
no auto-summary

Answer: B

Explanation

The “ebgp-multihop” command should only be used when configuring external BGP (eBGP) neighbors which are not directly connected. This command is not necessary for iBGP ngeighbor. In this question R1, R2 and R4 belongs to AS 1 so we don’t need this command.

Note: By default the TTL of eBGP connection is set to 1 so eBGP neighbors are required to be directly connected. The “ebgp-multihop” command increases the eBGP Time-to-live (TTL) values of BGP connections to external peers.

Question 14

Which command can you enter on a Cisco IOS device to enable a scheduled algorithm that directs lookup calls to multiple DNS hosts?

A. ip domain round-robin
B. ip name-server 192.168.10.14 192.168.10.15
C. ip domain lookup
D. ip domain list

Answer: B

Question 15

Which API use HTTP messages to transfer data to applications residing on different host?

A. OpFlex
B. REST

C. OpenStack
D. OpenFlow

Answer: B

Question 16

Which two services can be provided by a wireless controller? (Choose two)

A. issuing IP addresses to wired devices
B. mitigating threats from the internet
C. providing authentication services to users
D. managing interference in a dense network
E. Layer 3 routing between wired and wireless devices

Answer: C D

Question 17

Refer to the exhibit. Given the output shown from this Cisco Catalyst 2950, what is the most likely reason that interface FastEthernet 0/10 is not the root port for VLAN 2?

Switch# show spanning-tree interface fastethernet0/10

Vlan	Role	Sts	Cost	Prio.Nbr	Type
VLAN0001	Root	FWD	19	128.1	P2p
VLAN0002	Altn	BLK	19	128.2	P2p
VLAN0003	Root	FWD	19	128.2	P2p

A. This switch has more than one interface connected to the root network segment in VLAN 2.
B. This switch is running RSTP while the elected designated switch is running 802.1d Spanning Tree.
C. This switch interface has a higher path cost to the root bridge than another in the topology.
D. This switch has a lower bridge ID for VLAN 2 than the elected designated switch.

Answer: C

Question 18

Which value is included in the initial TCP syn message?

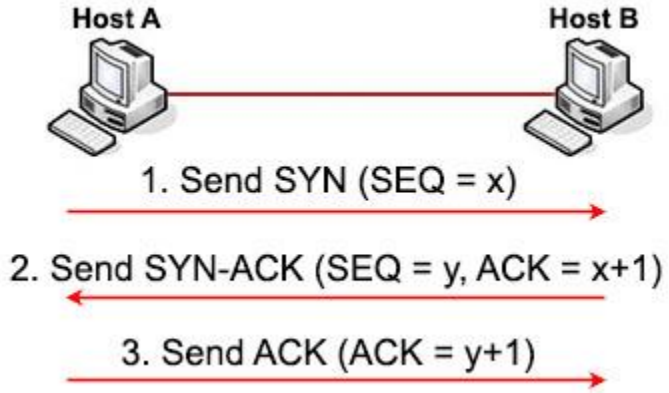
A. a session ID
B. sequence number
C. a TTL number
D. an acknowledgment number

Answer: B

Explanation

TCP three-way handshake (to start the communication)

Suppose host A wants to start communicating with host B using TCP. Before they can send real data, a three-way handshake must be established first. Let's see how this process takes place:



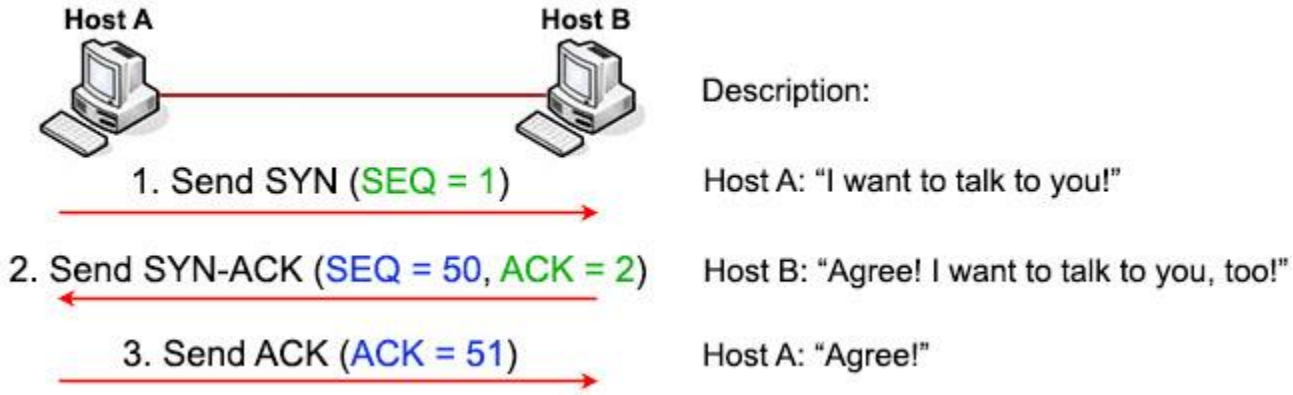
1. First host A will send a **SYN message** (a TCP segment with SYN flag set to 1, SYN is short for SYNchronize) to indicate it wants to setup a connection with host B. **This message includes a sequence (SEQ) number** for tracking purpose. This sequence number can be any 32-bit number (range from 0 to 2^{32}) so we use "x" to represent it.

2. After receiving SYN message from host A, host B replies with **SYN-ACK message** (some books may call it "SYN/ACK" or "SYN, ACK" message. ACK is short for ACKnowledge). This message includes a SYN sequence number and an ACK number:
+ SYN sequence number (let's called it "y") is a random number and does not have any relationship with Host A's SYN SEQ number.
+ ACK number is the next number of Host A's SYN sequence number it received, so we represent it with "x+1". It means "I received your part. Now send me the next part (x + 1)".

The SYN-ACK message indicates host B accepts to talk to host A (via ACK part). And ask if host A still wants to talk to it as well (via SYN part).

3. After Host A received the SYN-ACK message from host B, it sends an **ACK message** with ACK number "y+1" to host B. This confirms host A still wants to talk to host B.

If you are still unclear about this process, let's assign: x = 1 and y = 50:



Question 19

Which two cable specifications can support 1-Gbps Ethernet? (Choose two)

A. Category 5e
B. RG11
C. RG-6
D. Category 6
E. Category 3

Answer: A D

Question 20

What two actions can be taken to secure the virtual terminal interfaces on a router? (Choose two)

A. Administratively shut down the interface
B. Enter an access list and apply it to the virtual terminal interfaces using the access-class command
C. Physically secure the interface
D. Create an access list and apply it to the virtual terminal interfaces using the access-group command
E. Configure a virtual terminal password and login process

Answer: B E

Explanation

It is a waste to administratively shut down the interface. Moreover, someone can still access the virtual terminal interfaces via other interfaces -> Answer A is not correct.

We can not physically secure a virtual interface because it is "virtual" -> Answer C is not correct.

To apply an access list to a virtual terminal interface we must use the “access-class” command. The “access-group” command is only used to apply an access list to a physical interface -> Answer D is not correct; answer B is correct.

The most simple way to secure the virtual terminal interface is to configure a username & password to prevent unauthorized login -> Answer E is correct.

Question 21

Which type of device should you use to preserve IP addresses on your network?

A. firewall
B. WLAN controller
C. load balancer
D. intrusion prevention device

Answer: A

Explanation

Some firewalls support NAT/PAT feature so it can preserver IP addresses on the network.

Question 22

Which two conditions can be used to elect the spanning-tree root bridge? (Choose two)

A. the highest MAC address
B. the lowest MAC address
C. the highest port priority
D. the lowest system ID
E. the lowest switch priority

Answer: B E

Question 23

It you change the weight and distance parameters on a device with an established BGP neighbor, which additional task must you perform to allow the two devices to continue exchanging routes?

A. Reset the BGP connections on the device
B. Reset the gateway interface
C. Clear the IP routes on the device
D. Change the weight and distance settings on the other device to match

Answer: A

Explanation

When we change the BGP weight attribute on an established BGP neighbor, we have to restart the BGP process in order for our changes to take effect with the “clear ip bgp” or “clear ip bgp * soft” command.

The “weight” attribute is only locally significant so we don’t need to change the weight on the other device.

Question 24

Which plane handles switching traffic through a Cisco router?

A. control
B. management
C. data
D. performance

Answer: C

Question 25

Which task do you need to perform first when you configure IP SLA to troubleshoot a network Connectivity issue?

A. Enable the ICMP echo operation
B. Specify the test frequency
C. Verify the ICMP echo operation
D. Schedule the ICMP operation

Answer: A

Question 26

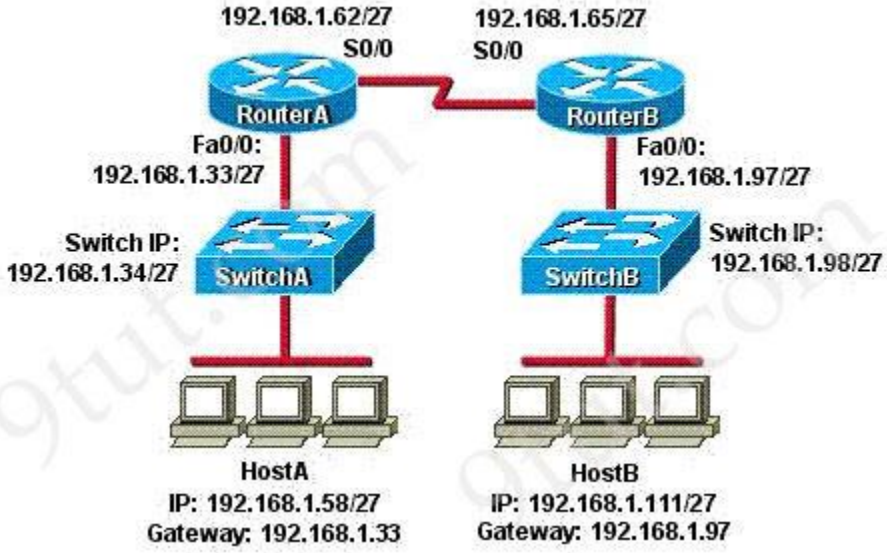
Which two advantages do dynamic routing protocols provide over static routing? (Choose two)

A. Dynamic routing protocols are easier to manage on very large networks
B. Dynamic routing protocols automatically adapt to reroute traffic if possible
C. Only dynamic routing is supported on all topologies that require multiple routers
D. Dynamic routing is more secure than static routing
E. Dynamic routing requires fewer resources than static routing

Answer: A B

Question 27

Refer to the exhibit. HostA cannot ping HostB. Assuming routing is properly configured, what could be the cause of this problem?



A. HostA is not on the same subnet as its default gateway.
B. The address of SwitchA is a subnet address.
C. The Fa0/0 interface on RouterA is on a subnet that can't be used.
D. The serial interfaces of the routers are not on the same subnet.
E. The Fa0/0 interface on RouterB is using a broadcast address.

Answer: D

Explanation

Now let's find out the range of the networks on serial link:

For the network 192.168.1.62/27:

Increment: 32
Network address: 192.168.1.32
Broadcast address: 192.168.1.63

For the network 192.168.1.65/27:

Increment: 32
Network address: 192.168.1.64
Broadcast address: 192.168.1.95

-> These two IP addresses don’t belong to the same network and they can’t see each other -> D is the correct answer.

Question 28

What is the default Syslog facility level?

A. local4
B. local5
C. local6
D. local7

Answer: D

Question 29

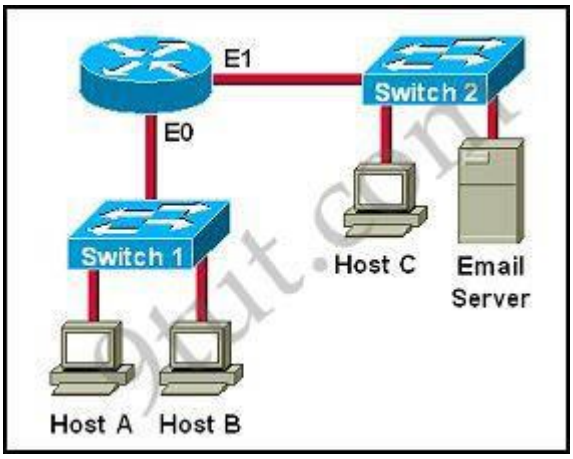
Which two values must you specify to perform an ACL-based Path Trace using APIC-EM? (Choose two)

A. source port
B. source IP address
C. destination IP address
D. source interface
E. destination port

Answer: B C

Question 30

Which destination addresses will be used by Host A to send data to Host C? (Choose two)



A. the IP address of Switch 1
B. the MAC address of Switch 1

C. the IP address of Host C
D. the MAC address of Host C
E. the IP address of the router's E0 interface
F. the MAC address of the router's E0 interface

Answer: C F

Explanation

While transferring data through many different networks, the source and destination IP addresses are not changed. Only the source and destination MAC addresses are changed. So in this case Host A will use the IP address of Host C and the MAC address of E0 interface to send data. When the router receives this data, it replaces the source MAC address with it own E1 interface's MAC address and replaces the destination MAC address with Host C's MAC address before sending to Host C -> C and F are correct.

Question 31

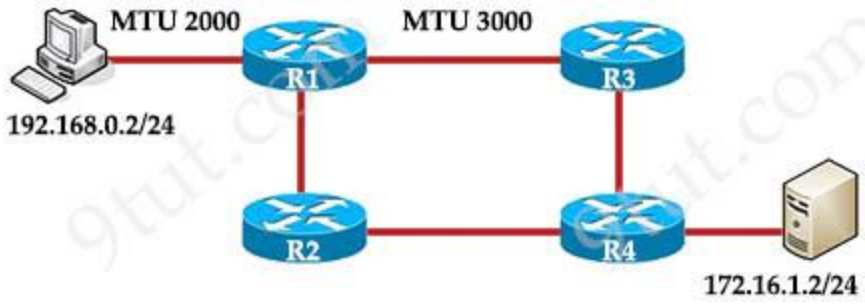
On which options are standard access lists based?

A. destination address and wildcard mask
B. destination address and subnet mask
C. source address and subnet mask
D. source address and wildcard mask

Answer: D

Question 32

Refer to the exhibit.



The server on this network is configured with an MTU of 9216 and the two interfaces on router R1 are configured for MTUs of 2000 and 3000, as shown. What is the largest packet size that can pass between the workstation and the server?

A. 1500 bytes
B. 2000 bytes
C. 3000 bytes
D. 9216 bytes

Answer: A

Explanation

Maximum Transmission Unit (MTU) defines the largest size of packets that an interface can transmit without the need to fragment. IP packets larger than the MTU must go through IP fragmentation procedures. By default, Ethernet has a MTU of 1500 bytes (= 1460 bytes of Payload + 20 bytes of TCP + 20 bytes IP). Therefore in this case although R1's MTUs on the two interfaces were increased but the ones on other routers did not so the largest packet size we can send here is still 1500 bytes.

Question 33

Which two facts about configuring EIGRPv6 are true? (Choose two)

A. You must configure neighboring devices with the same ipv6 hello-interval eigrp value
B. If you change the interface delay, the EIGRPv4 delay remains unchanged
C. The variance command for EIGRPv6 is independent of EIGRPv4
D. If you change the interface bandwidth, the EIGRPv4 metric is affected
E. The router ID must be an IPv6 address

Answer: C D

Explanation

EIGRPv6 and EIGRPv4 use the exact same concepts, with the exact same configuration command syntax, for equal-cost and unequal-cost load balancing. However, EIGRPv6 has its own configuration settings, made with the **maximum-paths** and **variance** commands inside EIGRPv6 configuration mode. EIGRPv4 has separate settings, using these same two commands, in EIGRPv4 configuration mode. The configuration of the "variance" commands in EIGRPv4 and EIGRPv6 is shown below:

EIGRPv4 configuration:
R1(config)# router eigrp 1
R1(config-router)#variance 3

EIGRPv6 configuration:
R1(config)# ipv6 router eigrp 11
R1(config-rtr)# variance 4

Reference: CCNA Routing and Switching ICND2 200-101 Official Cert Guide Book

Question 34

Which two statements about the **ip default-network** command are true? (Choose two)

A. It requires IP routing to be disabled on the device.
B. It specifies the network that is used when the device finds an exact match in the routing table.
C. It specifies the network that is used when the device cannot find an exact match in the routing table
D. It can be configured on a Layer 2 switch to specify the next hop.
E. It requires IP routing to be enabled on the device.

Answer: C E

Explanation

Unlike the "ip default-gateway" command, you can use "ip default-network" when ip routing is enabled on the Cisco router. When you configure "ip default-network" the router considers routes to that network for installation as the gateway of last resort on the router.

For every network configured with "ip default-network", if a router has a route to that network, that route is flagged as a candidate default route (marked with "*").

Note: The "ip default-network" command is classful. This means that if the router has a route to the subnet indicated by this command, it installs the route to the major network.

Reference and example: https://www.cisco.com/c/en/us/support/docs/ip/routing-information-protocol-rip/16448-default.html#ipnetwork

Question 35

Which two statements about RFC 1918 addresses are true? (Choose two)

A. They have reserved address space for Class A and Class B networks only
B. They increase network performance
C. They require Network Address Translation or Port Address Translation to access the Internet
D. They must be registered
E. They provide security to end users when the users access the Internet

Answer: C E

Explanation

The RFC 1918 is Address Allocation for Private Internets, which reserves IP addresses for private and internal use. These addresses can be used for networks that do not need to connect to the Internet. Therefore they requires NAT or PAT to access the Internet. The ranges of each private class are shown below:

Class A: 10.0.0.0 – 10.255.255.255
Class B: 172.16.0.0 – 172.31.255.255
Class C: 192.168.0.0 – 192.168.255.255

Question 36

Which two values must you specify to define a static route? (Choose two)

A. destination network and mask
B. source network and mask
C. incoming interface
D. next-hop address or exit interface
E. administrative distance of the route

Answer: A D

Explanation

The simple syntax of static route:

ip route destination-network-address subnet-mask {next-hop-IP-address | exit-interface}
+ **destination-network-address:** destination network address of the remote network
+ **subnet mask:** subnet mask of the destination network
+ **next-hop-IP-address:** the IP address of the receiving interface on the next-hop router
+ **exit-interface:** the local interface of this router where the packets will go out

For example:

R0(config)#ip route 172.16.0.0 255.255.0.0 12.12.12.2 (with 12.12.12.2 is the next-hop IP address)
R0(config)#ip route 172.16.0.0 255.255.0.0 s0/0 (with s0/0 is the exit interface of the local router)

Question 37

Which chassis aggregation technology combines two physical switches into one virtual switch?

A. VSS
B. LACP
C. StackWise
D. VRRP

Answer: A

Explanation

The term chassis aggregation refers to Cisco technology that is used to make multiple switches operate as a single switch. Virtual Switching System (VSS) and Switch Stacking are two technologies to accomplish this task. So “VSS” is the correct answer here.

Note: StackWise is the technology provides chassis redundancy in a VSS environment.

The differences between VSS and StackWise technologies:

Virtual Switching System (VSS) is a chassis aggregation technology but it is dedicated for Cisco Catalyst 6500, 6800 or 4500 Series Switches. VSS does not use special cables but establishes a virtual switch link (VSL) between two switches using regular Ethernet cables (Gigabit, TenGigabit…). VSS is limited to two switches.

Stacking is something we do with 3850, 3750 and 3750x. It uses a special stack cable and is not limited to two switches (some models can stack up to 9 members). This is more of an access layer technology.

Question 38

After you configure a DHCP server on VLAN 10 to service clients on VLAN 10 and VLAN 20, clients on VLAN 10 are given IP address assignments. But clients on VLAN 20 fail to receive IP addresses. Which action must you take to correct the problem?

A. Configure the ip helper address command in the DHCP server configuration.
B. Configure the DNS name option in the DHCP server configuration
C. Configure a separate DHCP server on VLAN 20
D. Configure the default gateway in the DHCP server configuration

Answer: C

Question 39

Which two commands can you use to configure an LACP EtherChannel? (Choose two)

A. channel-group 10 mode on
B. channel-group 10 mode auto
C. channel-group 10 mode passive
D. channel-group 10 mode desirable
E. channel-group 10 mode active

Answer: C E

Question 40

Which two statements about PAP authentication in a PPP environment are true? (Choose two)

A. It is performed at the beginning of the session only.
B. It hashes the password before sending it.
C. It sends the password in clear text.
D. It is performed at the beginning of the session and is repeated periodically for as long as the session is maintained
E. It uses a username with an MD5 password to authenticate

Answer: A C

Explanation

PPP has two built-in security mechanisms which are **Password Authentication Protocol** (PAP) and **Challenge Handshake Authentication Protocol** (CHAP).

Password Authentication Protocol (PAP) is a very simple authentication protocol. The client who wants to access a server sends its username and password in clear text. The server checks the validity of the username and password and either accepts or denies connection. This is called two-way handshake. In PAP two-way handshake process, the username and password are sent in the first message.

Another difference between PAP and CHAP is PAP performs authentication at the initial link establishment only while CHAP performs authentication at the initial link establishment and periodically after that. The challenge text is random and unique so the "result" is also unique from time to time. This prevents playback attack (in which a hacker tries to copy the "result" text sent from Client to reuse).

Question 41

You apply an new inbound access fist to routers, blocking UDP packets to the HSRP group. Which two effects does this action have on the HSRP group process? (Choose two)

A. HSRP redundancy works as expected
B. HSRP redundancy fails
C. The active router immediately becomes the standby router.
D. Both the active and standby routers become active.
E. The routers in the group generate duplicate IP address warnings

Answer: B D

Explanation

In HSRP, standby router is backup when active router fails by monitoring periodic hellos sent by the active router (multicast to 224.0.0.2, UDP port 1985) to detect a failure of the active router. When this UDP port is blocked, standby router will not receive hellos so it believes the active router fails so it becomes the master router -> HSRP redundancy does not operate as desired and both of the routers become active.

Question 42

Which command should you enter to configure a single port to bypass the spanning-tree Forward and Delay timers?

A. spanning-tree portfast bpdufiter default
B. spanning-tree portfast default
C. spanning-tree portfast
D. spanning-tree portfast bpduguard default

Answer: C

Explanation

By using PortFast feature, the port won't spend 50 seconds to move from blocking (20sec), listening (15sec), learning (15sec) and finally forwarding but will jump directly to the forwarding state. This feature should be used on ports connected to hosts only because hosts surely don't send BPDU. An example of configuring PortFast on an interface is shown below:

Sw(config)#interface FastEthernet0/1
Sw(config-if)#spanning-tree portfast

Question 43

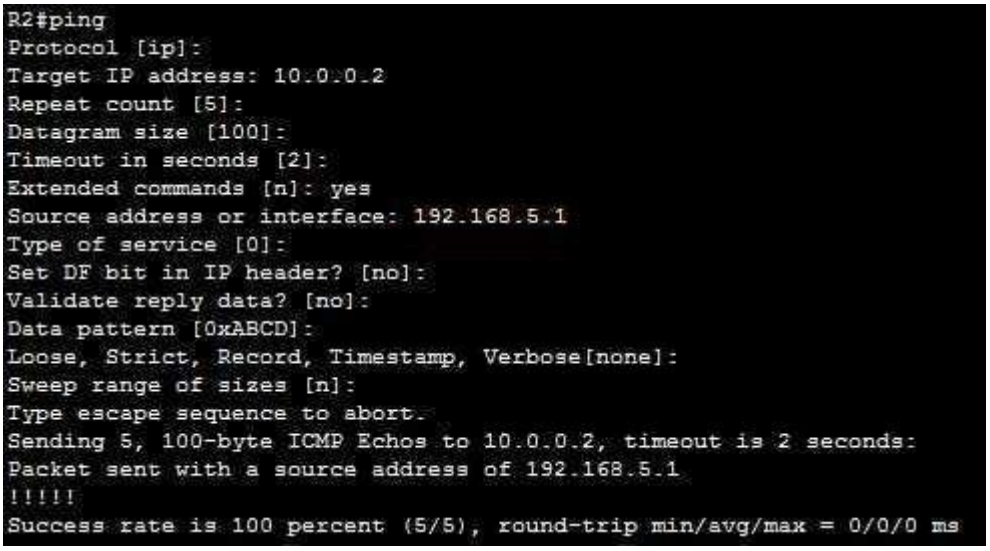
Which extended ping feature do you use to specify the path that the packet traverses?

A. verbose
B. timestamp
C. strict
D. record

Answer: C

Explanation

There are many options to choose when using extended ping. Below shows the options that we can choose:



In which "Strict" feature is used to specify the hop(s) that you want the packet to go through, but no other hop(s) are allowed to be visited.

Reference: https://www.cisco.com/c/en/us/support/docs/ip/routing-information-protocol-rip/13730-ext-ping-trace.html

Note: Loose/Strict allows you to set IP addresses the packets should pass through. Strict requires the packet to take that route, while loose will attempt to pass those IPs, but can pass through others, as well.

More information about other options:

Verbose information (automatically enabled with the other options) displays more information, such as the time for individual pings, rather than just showing exclamation points (for successful pings) and periods (of lost pings).

Record displays up to nine hops, but shows both the hops to and from the remote host, where traceroute only shows hops to the destination.

Timestamp is used to measure roundtrip time to particular hosts.

Question 44

Refer to the exhibit Which two facts can you determine from the EIGRP topology table? (Choose two)

```
R1#show ip eigrp topology

P 10.242.0.148/30, 1 successors, FD is 28416
      via 10.85.193.42 (28416/28160), TenGigabitEthernet0/1/0.100
P 10.245.128.192/27, 2 successors, FD is 3328
      via 10.85.193.42 (3328/3072), TenGigabitEthernet0/1/0.100
      via 10.85.193.46 (3328/3072), TenGigabitEthernet0/2/0.100
P 10.73.2.128/25, 1 successors, FD is 5120, tag is 9999
      via Redistributed (5120/0)
P 10.67.178.128/25, 1 successors, FD is 5120, tag is 9999
      via Redistributed (5120/0)
P 10.245.128.40/29, 1 successors, FD is 768
      via 10.85.193.42 (768/512), TenGigabitEthernet0/1/0.100
P 10.245.128.64/29, 1 successors, FD is 768
      via 10.85.193.46 (768/512), TenGigabitEthernet0/2/0.100
P 10.73.149.0/25, 1 successors, FD is 5120, tag is 9999
P 10.85.184.0/23, 2 successors, FD is 256768, tag is 20000
      via 10.85.193.42 (256768/256512), TenGigabitEthernet0/1/0.100
      via 10.85.193.46 (256768/256512), TenGigabitEthernet0/2/0.100
```

A. If a route has more than one successor, only one route is injected into the routing table.
B. The FD 28416 for route 10.242.0.148 is also the metric for the routing table
C. The variance command must have been issued to allow route 10.85.184.0 to have two Successors.
D. The reported distance value is greater than the feasible distance
E. All successors are injecting into the routing table

Answer: B E

Explanation

We will analyze the EIGRP topology with the show ip eigrp topology command. An example of the output of Router0 is shown below:

```
Router0#show ip eigrp topology
IP-EIGRP Topology Table for AS 100

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - Reply status

P 192.168.2.0/24, 1 successors, FD is 28160
         via Connected, FastEthernet0/1
P 192.168.1.0/24, 1 successors, FD is 28160
         via Connected, FastEthernet0/0
P 192.168.3.0/24, 1 successors, FD is 30720
         via 192.168.1.2 (30720/28160), FastEthernet0/0
P 192.168.5.0/24, 2 successors, FD is 30720
         via 192.168.1.2 (30720/28160), FastEthernet0/0
         via 192.168.2.2 (30720/28160), FastEthernet0/1
P 192.168.4.0/24, 1 successors, FD is 30720
         via 192.168.2.2 (30720/28160), FastEthernet0/1
```

The letter “P” as the left margin of each route entry stands for “Passive”. Passive state indicates that the route is in quiescent mode, implying that the route is known to be good and that no activities are taking place with respect to the route.

Each route shows the number of the successor it has. For example, the network 192.168.2.0, 192.168.1.0,192.168.3.0 & 192.168.4.0 have only 1 successor (and no feasible successor). Only network 192.168.5.0 has 2 successors.

We notice that there are 2 numbers inside the brackets (30720/28160). The first one is the metric (or Feasible Distance, FD) from Router0 to the destination, the second is the Advertised Distance (AD) of this route, advertised by the neighbor.

Now we can come back to our question, the first metric of the route 10.242.0.148 is 28416 is also the metric of the route -> Answer B is correct.

If a route has only one successor, that successor is surely put into the routing table. In this question, all the routes with two successors have the same FD and AD so they are also put into the routing table for load-balancing.

Question 45

Refer to the exhibit.

```
Port Security              : Enabled
Port Status                : Secure-shutdown
Violation Mode             : Shutdown
Aging Time                 : 0 mins
Aging Type                 : Absolute
SecureStatic Address Aging : Disabled
Maximum MAC Addresses      : 2
Total MAC Addresses        : 2
Configured MAC Addresses   : 0
Sticky MAC Addresses       : 2
Last Source Address:Vlan   : 0001.0fAA.33BB:1
Security Violation Count   : 1
```

Which two statements about the interface that generated the output are true? (Choose two)

A. Two secure MAC address are manually configured on the interface
B. A syslog message is generated when the maximum number of secure MAC addresses is on the interface
C. The interface is error-disabled
D. The interface dynamically learned two secure MAC addresses
E. An SNMP trap is generated when the maximum number of secure MAC addresses is reached on the interface

Answer: D E (and C)

Explanation

An SNMP trap is generated when the port-security mode is “Strict” or “Shutdown” -> Answer E is correct.

From the output we learn that:
“Sticky MAC Addresses: 2” -> Two MAC addresses were learned dynamically with the “switchport port-security mac-address sticky” command -> Answer D is correct.
“Configured MAC Addresses: 0” -> There are no static MAC address configured (with the command “switchport port-security mac-address *MAC-address*“)
“Security Violation Count: 1” -> A security violation occurred
“Port status: Secure-shutdown”: this port is in err-disabled state (as it is in “shutdown” mode when a security violation occurs) so answer C is correct too

So in fact there are three correct answers in this question.

Question 46

Which two statements about GRE tunnels are true? (Choose two)

A. They can operate in tunnel mode and transport mode
B. They provide privacy, integrity, and authenticity
C. They encapsulate the payload
D. They add 8 bytes to the IP header of each packet
E. They allow multicast traffic to traverse WAN circuits

Answer: C E

Explanation

GRE tunnel adds 20 bytes of IP header to each packet (and 4 bytes of GRE Headers) -> Answer D is not correct.

IPsec supports two encryption modes: **Transport mode** and **Tunnel mode** (not GRE Tunnel) -> Answer A is not correct.

GRE tunnel provides privacy but no integrity or authenticity -> Answer B is not correct.

When the sending router decides to send a packet into the GRE Tunnel, it will “wrap” the whole packet into another IP packet with two headers: one is the GRE header which uses to manage the tunnel itself. The other is called “Delivery header” which includes the new source and destination IP addresses of two virtual interfaces of the tunnel (called tunnel interfaces). This process is called encapsulation -> Answer C is correct.

Multicast traffic can traverse GRE tunnel so answer E is correct.

Question 47

Which two statements about IGP and EGP routing protocols are true? (Choose two)

A. Service providers use OSPF and IS-IS for intra-AS routing
B. EGP routing protocols are used to connect multiple IGP networks.
C. OSPF, EIGRP, and BGP are categorized as IGP routing protocols
D. Service providers use EGP and BGP for intra- AS routing.
E. IGP routing protocols are used within internal networks.

Answer: A E

Explanation

Interior Gateway Protocols (IGP): Used for routing within an AS (-> Answer E is correct). It is also referred to as intra-AS routing. Companies, organizations, and even service providers use an IGP on their internal networks (-> Answer A is correct). IGPs include RIP, EIGRP, OSPF, and IS-IS.
Exterior Gateway Protocols (EGP): Used for routing between autonomous systems. It is also referred to as inter-AS routing. Service providers and large companies may interconnect using an EGP. The Border Gateway Protocol (BGP) is the only currently viable EGP and is the official routing protocol used by the Internet.

Reference: http://www.ciscopress.com/articles/article.asp?p=2180210&seqNum=7

Question 48

Which two best practices protect your network from VLAN hopping attacks? (Choose two)

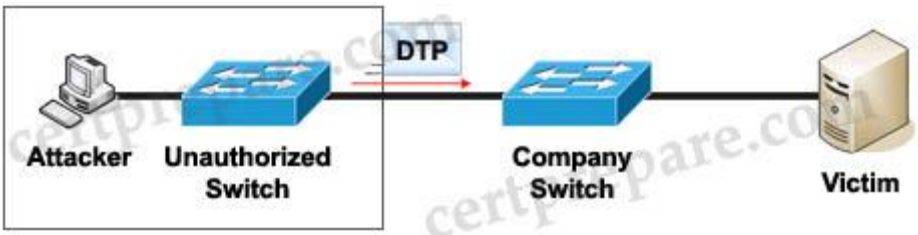
A. Change the native VLAN to an unused VLAN ID
B. Assign all access ports to VLANS other than the native VLAN
C. Configure an ACL to prevent traffic from changing VLANS.
D. Configure dynamic ARP inspection
E. Configure port security

Answer: A B

Explanation

VLAN Hopping: By altering the VLAN ID on packets encapsulated for trunking, an attacking device can send or receive packets on various VLANs, bypassing Layer 3 security measures. VLAN hopping can be accomplished by switch spoofing or double tagging.

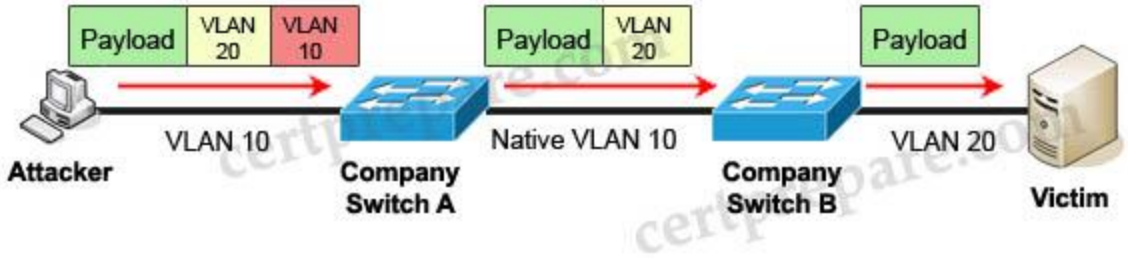
1) Switch spoofing:



The attacker can connect an unauthorized Cisco switch to a Company switch port. The unauthorized switch can send DTP frames and form a trunk with the Company Switch. If the attacker can establish a trunk link to the Company switch, it receives traffic to all VLANs through the trunk because all VLANs are allowed on a trunk by default.

(Instead of using a Cisco Switch, the attacker can use a software to create and send DTP frames).

2) Double-Tagging:



In this attack, the attacking computer generates frames with two 802.1Q tags. The first tag matches the native VLAN of the trunk port (VLAN 10 in this case), and the second matches the VLAN of a host it wants to attack (VLAN 20).

When the packet from the attacker reaches Switch A, Switch A only sees the first VLAN 10 and it matches with its native VLAN 10 so this VLAN tag is removed. Switch A forwards the frame out all links with the same native VLAN 10. Switch B receives the frame with an tag of VLAN 20 so it removes this tag and forwards out to the Victim computer.

Note: This attack only works if the trunk (between two switches) has the same native VLAN as the attacker.

ARP attack (like ARP poisoning/spoofing) is a type of attack in which a malicious actor sends falsified ARP (Address Resolution Protocol) messages over a local area network. This results in the linking of an attacker's MAC address with the IP address of a legitimate computer or server on the network. This is an attack based on ARP which is at Layer 2.

In this question, answer A and answer B are correct as they can be used to protect from Double-tagging attack.

Question 49

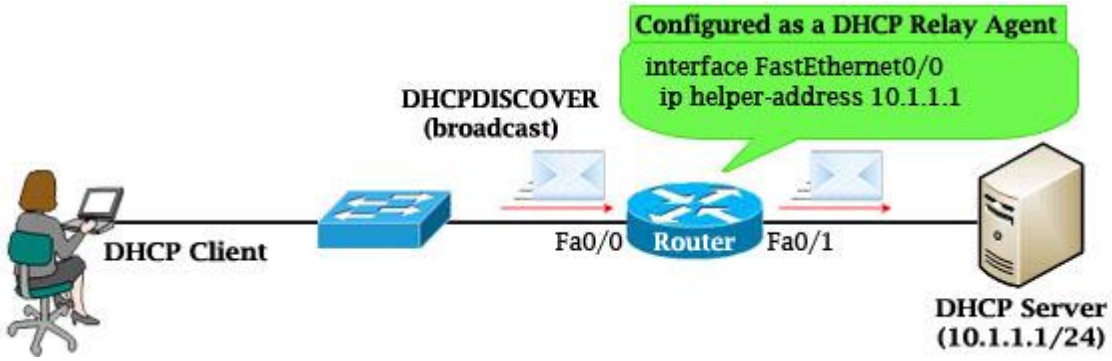
Which command must you enter to configure a DHCP relay?

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

Answer: A

Explanation

If the DHCP Server is not on the same subnet with the DHCP Client, we need to configure the router on the DHCP client side to act as a DHCP Relay Agent so that it can forward DHCP messages between the DHCP Client & DHCP Server. To make a router a DHCP Relay Agent, simply put the "ip helper-address <*IP-address-of-DHCP-Server*>" command under the interface that receives the DHCP messages from the DHCP Client.



As we know, router does not forward broadcast packets (it drops them instead) so DHCP messages like DHCPDISCOVER message will be dropped. But with the "ip helper-address …" command, the router will accept that broadcast message and cover it into a unicast packet and forward it to the DHCP Server. The destination IP address of the unicast packet is taken from the "ip helper-address …" command.

Question 50

Refer to the exhibit Which two pieces of information can you determine from the EIGRP topology table? (Choose two)

```
R1#show ip eigrp topology

P 10.111.9.72/30, 1 successors, FD is 642560
      via Connected, GigabitEthernet0/0.1
P 10.42.88.128/25, 1 successors, FD is 28160
      via Connected, GigabitEthernet0/2.101
P 10.42.90.128/25, 1 successors, FD is 28160
      via Connected, GigabitEthernet0/2.701
P 10.42.91.0/24, 1 successors, FD is 28160
      via Connected, GigabitEthernet0/2.900
P 92.168.0.0/16, 1 successors, FD is 1732096, tag is 13979
      via Redistributed (1732096/0)
P 72.16.0.0/12, 1 successors, FD is 1732096, tag is 13979
      via Redistributed (1732096/0)
P 10.0.0.0/8, 1 successors, FD is 1732096, tag is 13979
      via Redistributed (1732096/0)
P 10.42.88.0/21, 1 successors, FD is 28160
      via Summary (28160/0), Null0
P 10.42.88.0/25, 1 successors, FD is 28160
      via Connected, GigabitEthernet0/2.100
```

A. Route 10.42.88.0/21 has an administrative distance of 28160
B. Route 10.42.91.0/24 has a tag of 28160
C. Each route has only one best path
D. The EIGRP neighbor IP address is 10.111 253.216
E. The reported distance of 10.0.0.0/8 is 0

Answer: C E

Explanation

“Reported distance” is also the “Advertised distance” and it is the second parameter in the bracket. In this question it is 0 (10.0.0./8, ….. via Redistributed (1732096/0).

Question 51

Which file-system management command is used frequently when IOS backups, upgrades, and restores are performed?

A. show dir
B. show file
C. delete
D. copy

Answer: D

Explanation

When backups, upgrades IOS we usually copy our IOS to a safe place first (usually with the “copy flash: tftp:” command) and then upgrading it (with the “copy tftp: flash:” command.

Question 52

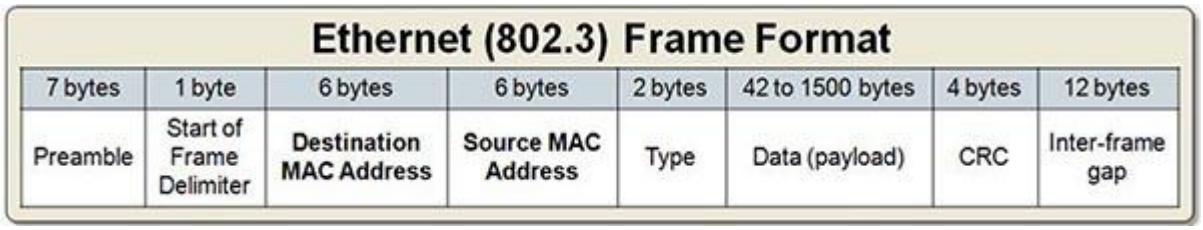
Which algorithm is used for the frame check sequence in an Ethernet frame?

A. MD5
B. AES-256
C. CRC
D. SHA-1

Answer: C

Explanation

At the end of each frame there is a Frame Check Sequence (FCS) field. FCS can be analyzed to determine if errors have occurred. FCS uses cyclic redundancy check (CRC) algorithm to detect errors in the transmitted frames. Before sending data, the sending host generates a CRC based on the header and data of that frame. When this frame arrives, the receiving host uses the same algorithm to generate its own CRC and compare them. If they do not match then a CRC error will occur.



Question 53

Which protocol speeds up the MAC aging process?

A. OSPF
B. RSTP
C. RIP
D. 802.1D

Answer: B

Explanation

Topology changes reduce the MAC address table aging time from the default time of 300 seconds to 15 seconds in the case of 802.1D Spanning Tree Protocol (STP) to freshen stale MAC address table entries. In the case of Rapid Spanning Tree Protocol (RSTP), the MAC address is immediately flushed.

Reference: http://www.ciscopress.com/articles/article.asp?p=336872

Question 54

Which two statements about the ip subnet-zero command are true?(Choose two)

A. It is enabled by default on Cisco routers
B. It must be configured before you activate NAT on a router
C. It specifies the broadcast IP addresses in the subnet
D. It must be configured each time you reboot a router
E. It enables the network to make full use of the available IP address space

Answer: A E

Explanation

The “ip subnet-zero” allows the use of the first subnet. It is now very normal nowadays but in the old day the first subnet was often ignored to prevent problem. For example, if the “ip subnet-zero” command is enabled then the first subnet of network 192.168.1.0/30 (which is 192.168.1.0.0 to 192.168.1.3) can be used.

Question 55

Which feature can cause a port to shut down immediately after a switch reboot?

A. port security
B. DTP
C. COPP
D. PortFast

Answer: A

Question 56

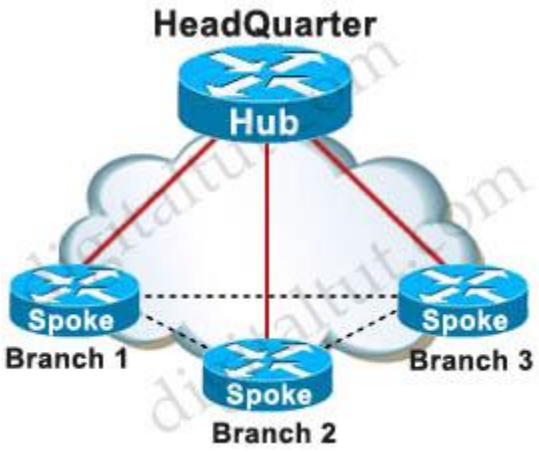
You are implementing WAN access for an enterprise network while running applications that require a fully meshed network, which two design standards are appropriate for such an environment? (Choose two)

A. multiple MPLS VPN connections with static routing
B. multiple MPLS VPN connections with dynamic routing
C. a collapsed core and distribution layer, to minimize costs
D. a collapsed WAN distribution layer, to consolidate connectivity to remote sites
E. a collapsed DMVPN solution, to simplify connectivity for the enterprise

Answer: B E

Explanation

A benefit of DMVPN solution is the ability to provides full-meshed connectivity with Hub-and-Spoke topology, thus simplify connectivity. This solution requires dynamic routing protocols (EIGRP, RIP, OSPF, BGP…) to work.



For more information about DMVPN, please read our DMVPN tutorial.

Question 57

Which command must you enter to switch from privileged EXEC mode to user EXEC mode on a Cisco device?

A. configure terminal
B. logout
C. disable
D. enable

Answer: B

Explanation

This question wants to ask how we can switch form privileged EXEC mode (or privileged mode, in short – Router#) to user EXEC mode (or user mode, in short – Router>) so we have to use “logout” command. In order to switch from user mode to privileged mode we have to use “enable” command.

CCNA – Basic Questions

http://www.9tut.com/basic-questions

Question 1

Which network topology allows all traffic to flow through a central hub?

A. bus
B. star
C. mesh
D. ring

Answer: B

Question 2

What is true about Ethernet? (Choose two)

A. 802.2 Protocol
B. 802.3 Protocol
C. 10BaseT half duplex
D. CSMA/CD stops transmitting when congestion occurs
E. CSMA/CA stops transmitting when congestion occurs

Answer: B D

Question 3

If a router has 3 hosts connected in one port and two other hosts connected in another port, how may broadcast domains are present on the router?

A. 5
B. 2
C. 3
D. 4

Answer: B

Question 4

On which type of device is every port in the same collision domain?

A. a router
B. a Layer 2 switch
C. a hub

Answer: C

Question 5

Which MTU size can cause a baby giant error?

A. 1500
B. 9216
C. 1600
D. 1518

Answer: D

Question 6

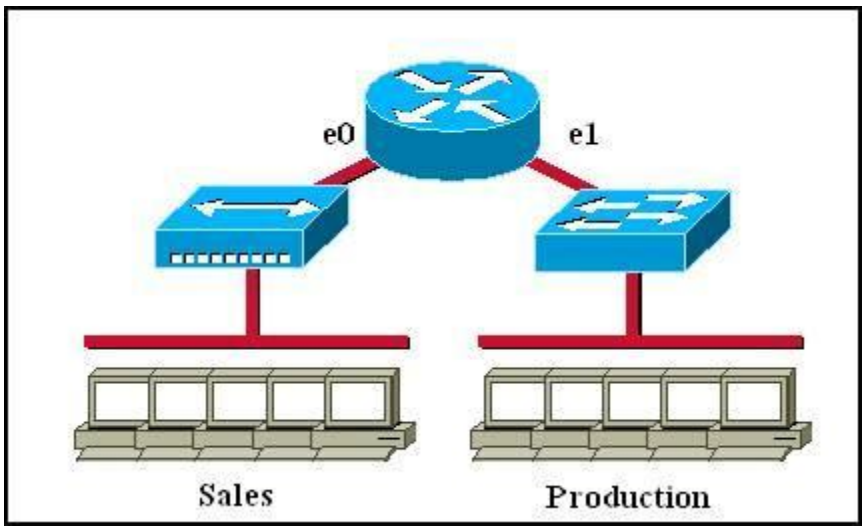
What are three characteristics of the TCP protocol? (Choose three)

A. The connection is established before data is transmitted.
B. It uses a single SYN-ACK message to establish a connection.
C. It ensures that all data is transmitted and received by the remote device.
D. It uses separate SYN and ACK messages to establish a connection.
E. It supports significantly higher transmission speeds than UDP.
F. It requires applications to determine when data packets must be retransmitted.

Answer: A C D

Question 7

Which of the following statements describe the network shown in the graphic? (Choose two)



A. There are two broadcast domains in the network.
B. There are four broadcast domains in the network.
C. There are six broadcast domains in the network.

D. There are four collision domains in the network.
E. There are five collision domains in the network.
F. There are seven collision domains in the network.

Answer: A F

Question 8

A network interface port has collision detection and carrier sensing enabled on a shared twisted pair network. From this statement, what is known about the network interface port?

A. This is a 10 Mb/s switch port.
B. This is a 100 Mb/s switch port.
C. This is an Ethernet port operating at half duplex.
D. This is an Ethernet port operating at full duplex.
E. This is a port on a network interface card in a PC.

Answer: C

Question 9

If there are 3 hosts connected in one port of a switch and two other hosts connected in another port, how many collision domains are present on the router?

A. 5
B. 2
C. 3
D. 4

Answer: B

Question 10

Which three elements are fields in a basic Ethernet data frame? (Choose three)

A. Preamble
B. Time to Live
C. Type/length
D. Frame check sequence
E. Version
F. Header Checksum

Answer: A C D

Basic Questions 2

http://www.9tut.com/basic-questions-2

Question 1

What interconnection cable can you use when you use a MDI connection?

A. cut-through
B. straight-through
C. crossover
D. rollover

Answer: C

Question 2

For what two purposes does the Ethernet protocol use physical addresses? (Choose two)

A. to uniquely identify devices at Layer 2
B. to allow communication with devices on a different network
C. to differentiate a Layer 2 frame from a Layer 3 packet
D. to establish a priority system to determine which device gets to transmit first
E. to allow communication between different devices on the same network
F. to allow detection of a remote device when its physical address is unknown

Answer: A E

Question 3

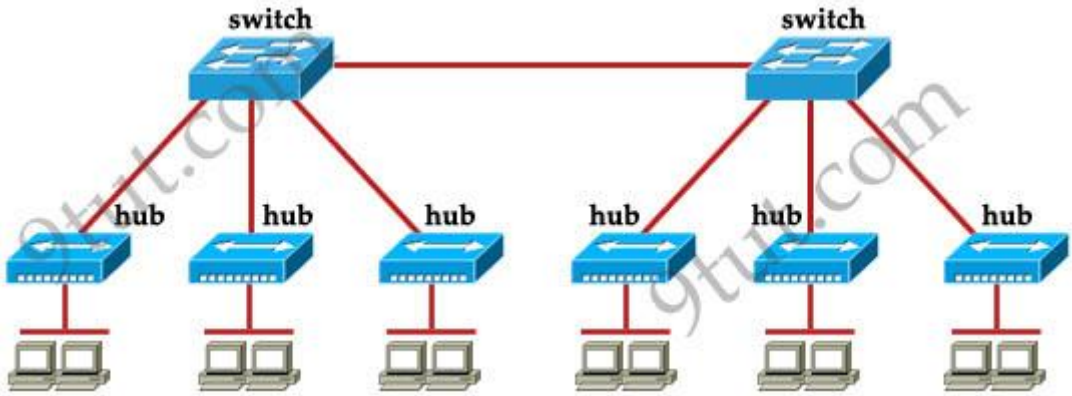
In an Ethernet network, under what two scenarios can devices transmit? (Choose two)

A. when they receive a special token
B. when there is a carrier
C. when they detect no other devices are sending
D. when the server grants access
E. when the medium is idle

Answer: C E

Question 4

How many broadcast domains are shown in the graphic assuming only the default VLAN is configured on the switches?



A. one
B. six
C. twelve
D. two

Answer: A

Question 5

Which type of cable must you use to connect two device with MDI interfaces?

A. rolled
B. crossover
C. crossed
D. straight through

Answer: B

Question 6

Which statement about upgrading a Cisco IOS device with TFTP server?

A. the operation is performed in active mode
B. the operation is performed in unencrypted format
C. the operation is performed in passive mode
D. the Cisco IOS device must be on the same LAN as the TFTP server

Answer: B

Question 7

Which two options are fields in an Ethernet frame? (Choose two)

A. frame check sequence
B. header
C. source IP address
D. destination IP address
E. type

Answer: A E

Question 8

Which two statements about UDP are true? (Choose two)

A. It can transmit data at a rate higher than the path capacity
B. It uses a three-way handshake to ensure that traffic is transmitted properly
C. It guarantees packet delivery
D. It includes protection against duplicate packets
E. It can be used for multicast and broadcast traffic

Answer: A E

Question 9

Which two statements about fiber cable are true? (Choose two)

A. Single-mode fiber supports SC and LC connectors only
B. Single-mode cable is most appropriate for installations longer 10 km
C. Fiber cable is relatively inexpensive and supports a higher data rate than coaxial cable
D. Multimode cable supports speeds between 100 Mbps and 100 Gbps
E. Multimode cable supports speeds between 100 Mbps and 9.92 Gbps

Answer: B D

OSI TCP/IP Model Questions

http://www.9tut.com/osi-model-questions

Question 1

Which statements correctly describe steps in the OSI data encapsulation process?

A. The transport layer divides a data stream into segments and may add reliability and flow control information.
B. The data link layer adds physical source and destination addresses and an FCS to the segment.
C. Packets are created when the network layer encapsulates a frame with source and destination host addresses and protocol-related control information.
D. Packets are created when the network layer adds Layer 3 addresses and control information to a segment.
E. The presentation layer translates bits into voltages for transmission across the physical link.

Answer: A D

Question 2

What layer of the OSI Model is included in TCP/IP Model's INTERNET layer?

A. Application
B. Session
C. Data Link
D. Presentation
E. Network

Answer: E

Question 3

Where does routing occur within the DoD TCP/IP reference model?

A. application
B. internet
C. network
D. transport

Answer: B

Question 4

Which of the following correctly describe steps in the OSI data encapsulation process? (Choose two)

A. The transport layer divides a data stream into segments and may add reliability and flow control information.
B. The data link layer adds physical source and destination addresses and an FCS to the segment.
C. Packets are created when the network layer encapsulates a frame with source and destination host addresses and protocol-related control information.
D. Packets are created when the network layer adds Layer 3 addresses and control information to a

segment.
E. The presentation layer translates bits into voltages for transmission across the physical link.

Answer: A D

Question 5

Which layer in the OSI reference model is responsible for determining the availability of the receiving program and checking to see if enough resources exist for that communication?

A. transport
B. network
C. presentation
D. session
E. application

Answer: E

Question 6

Which networking technology is currently recognized as the standard for computer networking?

A. System network architecture
B. Transmission control protocol/Internet protocol
C. Open system Interconnect
D. Open network architecture

Answer: B

Question 7

Which three encapsulation layers in the OSI model are combined into the TCP/IP application layer? (Choose three)

A. Session
B. Transport
C. Presentation
D. Application
E. Data-link
F. Network

Answer: A C D

Question 8

On which layer TCP/IP is ACL APIC-EM path?

A. Layer 1
B. Layer 2
C. Layer 3
D. Layer 4

Answer: D

Cloud & Virtual Services

http://www.9tut.com/cloud-virtual-services

Question 1

Which option is the benefit of implementing an intelligent DNS for a cloud computing solution?

A. It reduces the need for a backup data center.
B. It can redirect user requests to locations that are using fewer network resources.
C. It enables the ISP to maintain DNS records automatically.
D. It eliminates the need for a GSS.

Answer: B

Question 2

What are the three major components of Cisco network virtualization? (Choose three)

A. network access control
B. path isolation
C. virtual network services
D. policy enforcement

Answer: A B C

Question 3

Which three technical services support cloud computing?

A. network-monitored power sources
B. layer 3 network routing

C. ip localization
D. redundant connections
E. VPN connectivity
F. extended SAN services

Answer: B C F

Question 4

Which major component of the network virtualization architecture isolate users according to policy?

A. policy enforcement
B. network access control
C. network services virtualization
D. other

Answer: B

Question 5

Which three options are the major components of a network virtualization architecture? (Choose three)

A. virtual network services
B. authentication services
C. network access control
D. network resilience
E. path isolation
F. policy enforcement

Answer: A C E

Question 6

Which cloud service is typically used to provide DNS and DHCP services to an enterprise?

A. IaaS
B. DaaS
C. SaaS
D. PaaS

Answer: A

WAN Questions

http://www.9tut.com/wan-questions

Question 1

Which command can you enter to determine whether serial interface 0/2/0 has been configured using HDLC encapsulation?

A. router#show platform
B. router#show ip interface s0/2/0
C. router#show interfaces Serial 0/2/0
D. router#show ip interface brief

Answer: C

Question 2

Which Layer 2 protocol encapsulation type supports synchronous and asynchronous circuits and has built-in security mechanisms?

A. X.25
B. HDLC
C. PPP
D. Frame Relay

Answer: C

Question 3

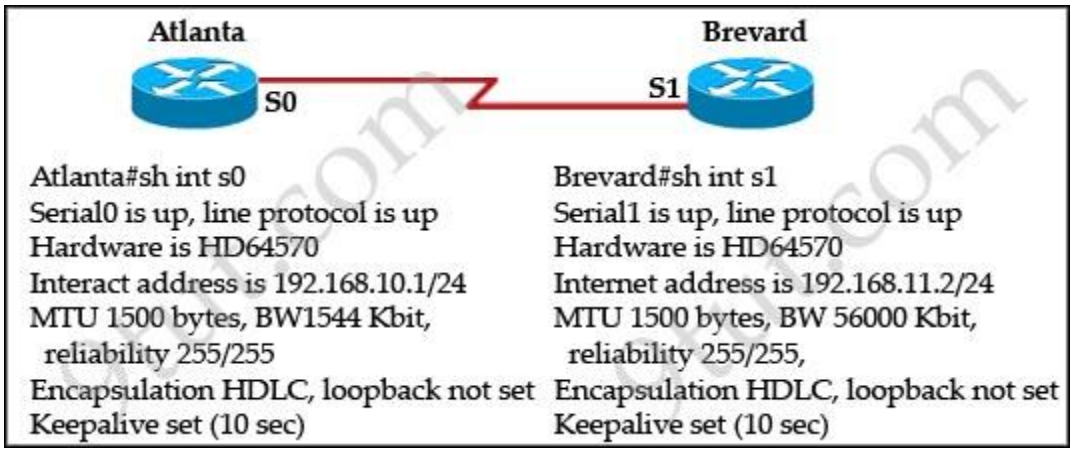
Which statements about using leased lines for your WAN infrastructure are true?

A. Leased lines provide inexpensive WAN access.
B. Leased lines with sufficient bandwidth can avoid latency between endpoints.
C. Leased lines require little installation and maintenance expertise.
D. Leased lines provide highly flexible bandwidth scaling.
E. Multiple leased lines can share a router interface.
F. Leased lines support up to T1 link speeds.

Answer: B C

Question 4

Two routers named Atlanta and Brevard are connected by their serial interfaces as illustrated, but there is no connectivity between them. The Atlanta router is known to have a correct configuration. Given the partial configurations, identify the problem on the Brevard router that is causing the lack of connectivity.



A. transmission unit size too large
B. no loopback set
C. an incorrect subnet mask
D. incompatible encapsulation at each end
E. an incorrect IP address
F. incompatible bandwidth between routers

Answer: E

Question 5

Which of the following describes the roles of devices in a WAN? (Choose three)

A. A CSU/DSU terminates a digital local loop
B. A modem terminates a digital local loop
C. A CSU/DSU terminates an analog local loop
D. A modem terminates an analog local loop
E. A router is commonly considered a DTE device
F. A router is commonly considered a DCE device

Answers: A D E

Question 6

Which two pieces of information are provided by the “show controllers serial 0” command? (Choose two)

A. the type of cable that is connected to the interface.
B. The uptime of the interface
C. the status of the physical layer of the interface
D. the full configuration of the interface
E. the interface's duplex settings

Answer: A C

Question 7

Which command is used to know the duplex speed of serial link?

A. show line
B. show interface
C. show protocol
D. show run

Answer: B

Question 8

Which WAN topology provides a direct connection from each site to all other sites on the network?

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

Answer: B

Question 9

What are three reasons that an organization with multiple branch offices and roaming users might implement a Cisco VPN solution instead of point-to-point WAN links? (Choose three)

A. reduced cost
B. better throughput
C. broadband incompatibility
D. increased security
E. scalability
F. reduced latency

Answer: A D E

Question 10

Which three statements about DWDM are true? (Choose three)

A. It allows a single strand of fiber to support bidirectional communications
B. It is used for long-distance and submarine cable systems
C. It can multiplex up to 256 channels on a single fiber
D. It supports both the SDH and SONET standards
E. Each channel can carry up to a 1-Gbps signal
F. It supports simplex communications over multiple strands of fiber

Answer: A B D

Question 11

Which PPP subprotocol negotiates authentication options?

A. NCP
B. ISDN
C. SUP
D. LCP
E. DLCI

Answer: D

Question 12

Which benefit of implementing a dual-homed WAN connection instead of a single-homed connection is true?

A. Only dual-homed connections support OSPF in conjunction with BGP
B. Only dual-homed connections support split horizon with EIGRP
C. Only dual-homed connections enable an individual router to tolerate the loss of a network link
D. Only dual-homed connections support recursive routing

Answer: C

PPP Questions

http://www.9tut.com/ppp-questions

Question 1

Which two statements about using the CHAP authentication mechanism in a PPP link are true? (Choose two)

A. CHAP uses a two-way handshake.
B. CHAP uses a three-way handshake.
C. CHAP authentication periodically occurs after link establishment.
D. CHAP authentication passwords are sent in plaintext.
E. CHAP authentication is performed only upon link establishment.
F. CHAP has no protection from playback attacks.

Answer: B C

Question 2

A network administrator needs to configure a serial link between the main office and a remote location. The router at the remote office is a non-Cisco router. How should the network administrator configure the serial interface of the main office router to make the connection?

A. Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# no shut

B. Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# encapsulation ppp
Main(config-if)# no shut

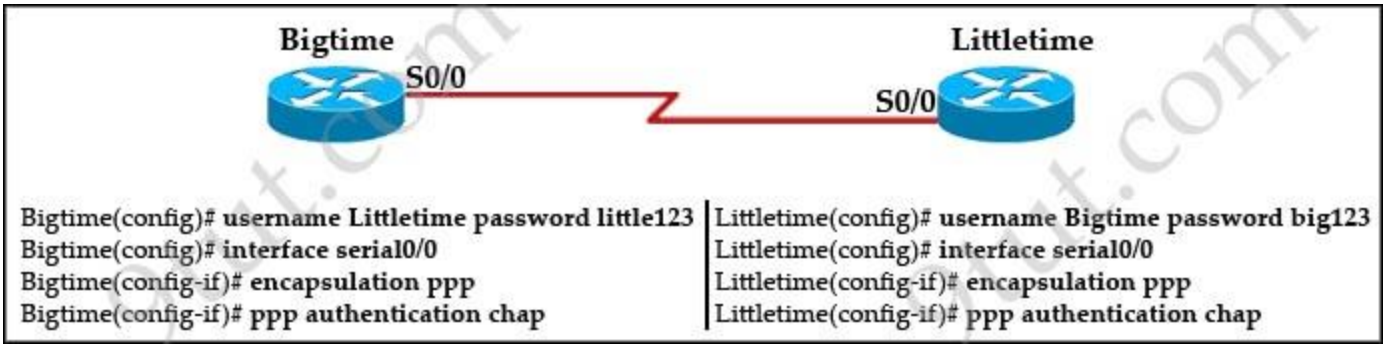
C. Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# encapsulation frame-relay
Main(config-if)# authentication chap
Main(config-if)# no shut

D. Main(config)# interface serial 0/0
Main(config-if)#ip address 172.16.1.1 255.255.255.252
Main(config-if)#encapsulation ietf
Main(config-if)# no shut

Answer: B

Question 3

Refer to the exhibit:



The Bigtime router is unable to authenticate to the Littletime router. What is the cause of the problem?

A. The usernames are incorrectly configured on the two routers.
B. The passwords do not match on the two routers.
C. CHAP authentication cannot be used on a serial interface.
D. The routers cannot be connected from interface S0/0 to interface S0/0.
E. With CHAP authentication, one router must authenticate to another router. The routers cannot be configured to authenticate to each other.

Answer: B

Question 4

What is the benefit of point-to-point leased line?

A. Low cost
B. Full-mesh capability
C. Flexibility of design
D. Simply configuration

Answer: D

Question 5

When you deploy multilink PPP on your network, where must you configure the group IP Address on each device?

A. In the global config
B. Under serial interface
C. Under the routing protocol
D. Under the multilink interface

Answer: D

Question 6

What are two authentication types of MLPPP?

A. PEAP
B. LEAP
C. PAP
D. CHAP
E. TACACS+

Answer: C D

Question 7

At which layer of the OSI model does PPP perform?

A. Layer 2
B. Layer 3
C. Layer 4
D. Layer 5
E. Layer 1

Answer: A

Question 8

Which command is used to enable CHAP authentication with PAP as the fallback method on a serial interface?

A. (config-if)# authentication ppp chap fallback ppp
B. (config-if)# authentication ppp chap pap
C. (config-if)# ppp authentication chap pap
D. (config-if)# ppp authentication chap fallback ppp

Answer: C

Question 9

Which two authentication methods are compatible with MLPPP on a serial interface? (Choose two)

A. LEAP
B. PEAP

C. CHAP
D. TACACS+
E. PAP

Answer: C E

QoS Questions

http://www.9tut.com/qos-questions

Question 1

Which option describes the purpose of traffic policing?

A. It prioritizes routing protocol traffic.
B. It remarks traffic that is below the CIR
C. It drops traffic that exceeds the CIR.
D. It queues and then transmits traffic that exceeds the CIR.

Answer: C

Question 2

Which statement about QoS default behavior is true?

A. Ports are untrusted by default.
B. VoIP traffic is passed without being tagged.
C. Video traffic is passed with a well-known DSCP value of 46.
D. Packets are classified internally with an environment.
E. Packets that arrive with a tag are untagged at the edge of an administrative domain.

Answer: E

Question 3

What 8-bit field exists in IP packet for QoS?

A. Tos Field
B. DSCP
C. IP Precedence
D. Cos
E. ?

Answer: A

Question 4

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 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

In which byte of an IP packet can traffic be marked?

A. The CoS byte
B. The ToS byte
C. The DSCP byte
D. The QoS byte

Answer: B

Question 7

Which function does traffic shaping perform?

A. It buffers and queues excess packets
B. It buffers traffic without queuing it

C. It queues traffic without buffering it
D. It drops packets to control the output rate

Answer: A

Question 8

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 9

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 10

Which two QoS tools can provide congestion management? (Choose two)

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

Answer: A D

Question 11

Which function does traffic shaping perform?

A. It buffers traffic without queuing it
B. It queues traffic without buffering it
C. It drops packets to control the output rate
D. It buffers and queues excess packets

Answer: D

DNS Questions

https://www.9tut.com/dns-questions

Question 1

Which two server types are used to support DNS lookup? (Choose two)

A. web server
B. name resolver
C. authoritative name sever
D. ESX host
E. file transfer server

Answer: B C

Question 2

Which two functions can be performed by a local DNS server? (Choose two)

A. forwarding name resolution requests to an external DNS server
B. resolving names locally
C. copying updated IOS images to Cisco switches
D. assigning IP addresses to local clients
E. transferring split horizon traffic between zones

Answer: A B

PPPoE Questions

http://www.9tut.com/pppoe-questions

Question 1

Which part of the PPPoE server configuration contains the information used to assign an IP address to a PPPoE client?

A. virtual-template interface
B. DHCP
C. dialer interface
D. AAA authentication

Answer: A

Question 2

During which phase of PPPoE is PPP authentication performed?

A. the PPP Session phase
B. Phase 2
C. the Active Discovery phase
D. the Authentication phase
E. Phase 1

Answer: A

Question 3

Which type of interface can negotiate an IP address for a PPPoE client?

A. Ethernet
B. dialer
C. serial
D. Frame Relay

Answer: B

MPLS Questions

http://www.9tut.com/mpls-questions

Question 1

Which statement about MPLS is true?

A. It operates in Layer 1.
B. It operates between Layer 2 and Layer 3.

C. It operates in Layer 3.
D. It operates in Layer 2.

Answer: B

Question 2

Which two statements about MPLS are true? (Choose two)

A. It provides automatic authentication
B. It can carry multiple protocols, including IPv4 and IPv6
C. It encapsulates all traffic in an IPv4 header
D. It uses labels to separate and forward customer traffic
E. It tags customer traffic using 802.1q

Answer: B D

DMVPN Questions

http://www.9tut.com/dmvpn-questions

Question 1

Which type of topology is required by DMVPN?

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

Answer: C

Question 2

Which circumstances can cause a GRE tunnel to be in an up/down state? (Choose three)

A. The tunnel interface IP address is misconfigured.
B. The tunnel interface is down.
C. A valid route to the destination address is missing from the routing table.
D. The tunnel address is routed through the tunnel itself.
E. The ISP is blocking the traffic.
F. An ACL is blocking the outbound traffic.

Answer: B C D

Question 3

Which technology supports multiple dynamic secure connections on an unsecured transport network?

A. DMVPN
B. VPN
C. Site-to-site VPN
D. client VPN

Answer: A

CDP & LLDP Questions

http://www.9tut.com/cdp-lldp-questions

Question 1

Which command would you configure globally on a Cisco router that would allow you to view directly connected Cisco devices?

A. cdp run
B. enable cdp
C. cdp enable
D. run cdp

Answer: A

Question 2

Which statement about LLDP is true?

A. It is a Cisco proprietary protocol.
B. It is configured in global configuration mode.
C. The LLDP update frequency is a fixed value.
D. It runs over the transport layer.

Answer: B

Question 3

What is true about Cisco Discovery Protocol?

A. it discovers the routers, switches and gateways.
B. it is network layer protocol
C. it is physical and data link layer protocol
D. it is proprietary protocol

Answer: D

Question 4

Which command you enter on a switch to display the ip address associated with connected devices?

A. show cdp neighbors detail
B. show cdp neighbor
C. show cdp interface
D. show cdp traffic

Answer: A

Question 5

Which command would you configure globally on a Cisco router that to re-enable CDP if it was disabled by the administrator?

A. enable cdp
B. cdp enable
C. cdp run
D. run cdp

Answer: C

Question 6

Which statement about Cisco Discovery Protocol is true?

A. It is Cisco-proprietary Protocol
B. It can discover information from routers, firewalls and switches
C. It runs on the network layer
D. It runs on the physical layer and the data link layer.

Answer: A

Question 7

Which two pieces of information can be shared with LLDP TLVs? (Choose two)

A. device management address
B. device type
C. spanning-tree topology
D. routing configuration
E. access-list configuration

Answer: A B

Question 8

Which two statements about LLDP are true ? (Choose two)

A. It uses mandatory TLVs to discover the neighboring devices
B. It functions at Layer 2 and Layer 3
C. It is a Cisco-proprietary technology
D. It is implemented in accordance with the 802.11a specification
E. It enables systems to learn about one another over the data-link layer

Answer: A E

Question 9

What two statements about CDP are true? (Choose two)

A. CDP runs on the data link layer only
B. CDP uses SNMP to share device information to an external server
C. CDP runs on the network layer and the data link layer
D. CDP uses TLVs to share device information
E. CDP used to initiate a VTP server and client relationship

Answer: A D

Question 10

Which LLDP extension provides additional support for VoIP?

A. TLV
B. LLDP-MED

C. LLDPv3
D. LLDP-VOIP

Answer: B

Question 11

Which two TLVs does LLDP support? (Choose two)

A. system description
B. port duplex
C. management address
D. native VLAN
E. spanning tree

Answer: A C

Question 12

Which command on a switch, to enable neighbor discovery in a multivendor environment?

A. cdp run
B. enable cdp
C. lldp run
D. enable lldp

Answer: C

IP Address Questions

http://www.9tut.com/ip-address-questions

Question 1

Which two statements about IPv4 multicast traffic are true? (Choose two)

A. It burdens the source host without affecting remote hosts.
B. It uses a minimum amount of network bandwidth.
C. It is bandwidth-intensive.
D. It simultaneously delivers multiple streams of data.
E. It is the most efficient way to deliver data to multiple receivers.

Answer: B E

Question 2

What are benefits of private IPv4 IP addresses?

A. They are routed the same as public IP addresses.
B. They are less costly than public IP addresses.
C. They can be assigned to devices without Internet connections.
D. They eliminate the necessity for NAT policies.
E. They eliminate duplicate IP conflicts.

Answer: B C

Question 3

What will happen if a private IP address is assigned to a public interface connected to an ISP?

A. A conflict of IP addresses happens, because other public routers can use the same range.
B. Addresses in a private range will not be routed on the Internet backbone.
C. Only the ISP router will have the capability to access the public network.
D. The NAT process will be used to translate this address to a valid IP address.

Answer: B

Question 4

Which destination IP address can a host use to send one message to multiple devices across different subnets?

A. 172.20.1.0
B. 127.0.0.1
C. 192.168.0.119
D. 239.255.0.1

Answer: D

Question 5

Which RFC was created to alleviate the depletion of IPv4 public addresses?

A. RFC 4193
B. RFC 1519

C. RFC 1518
D. RFC 1918

Answer: D

Question 6

Which IPv6 feature is supported in IPv4 but is not commonly used?

A. unicast
B. multicast
C. anycast
D. broadcast

Answer: C

Question 7

What are two benefits of private IPv4 IP addresses? (Choose two)

A. They are routed the same as public IP addresses.
B. They are less costly than public IP addresses.
C. They can be assigned to devices without Internet connections.
D. They eliminate the necessity for NAT policies.
E. They eliminate duplicate IP conflicts.

Answer: B C

Question 8

What are two benefits of private IPv4 addresses? (Choose two)

A. they can be implemented without requiring admin to coordinate with IANA
B. they are managed by IANA
C. increase the flexibility of network design
D. provide network isolation from the internet
E. they are routable over internet

Answer: A D

Question 9

Which address class includes network 191.168.0.1/27?

A. Class C
B. Class B
C. Class D
D. Class A

Answer: B

Question 10

Which two options are the best reasons to use an IPV4 private IP space? (Choose two)

A. to enable intra-enterprise communication
B. to conserve global address space
C. to manage routing overhead
D. to connect applications
E. to implement NAT

Answer: A B

Question 11

In which two circumstances are private IPv4 addresses appropriate? (Choose two)

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

Answer: B D

Question 12

Which two statements are true for multicast MAC address directions?

A. 01:00:5E:xx:xx:xx
B. one to one
C. 01 00 xx xxxxxxx
D. 02 xx xxxxxxx
E. one to many

Answer: A E

Switch Questions

http://www.9tut.com/switch-questions

Question 1

Which switching method duplicates the first six bytes of a frame before making a switching decision?

A. fragment-free switching
B. cut-through switching
C. store-and-forward switching
D. ASIC switching

Answer: B

Question 2

Refer to the exhibit. Which of these statements correctly describes the state of the switch once the boot process has been completed?

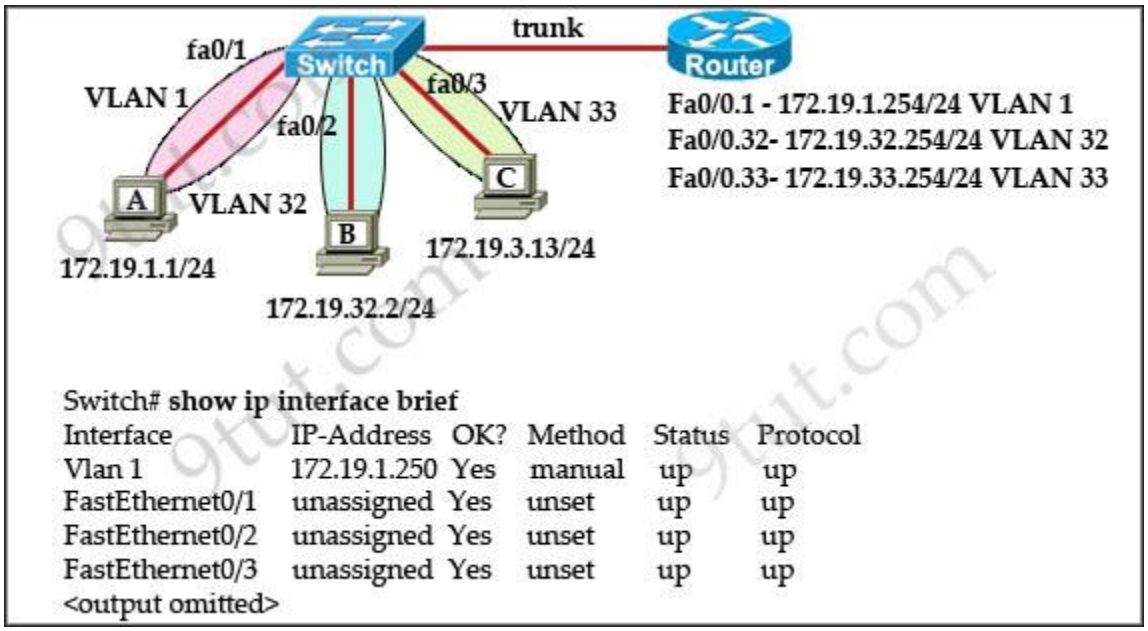
```
00:00:39: %LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to down
00:00:40: %SPANTREE-5-EXTENDED_SYSID: Extended SysId enabled for type vlan
00:00:42: %SYS-5-CONFIG_I: Configured from memory by console
00:00:42: %SYS-5-RESTART: System restarted --
Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 12.2(25)SEE2, RELEASE SOFTWARE (fc1
Copyright (c) 1986-2006 by Cisco Systems, Inc.
Compiled Fri 28-Jul-06 11:57 by yenanh
00:00:44: %LINK-5-CHANGED: Interface Vlan1, changed state to administratively down
00:00:44: %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
00:00:44: %LINK-3-UPDOWN: Interface FastEthernet0/2, changed state to up
00:00:44: %LINK-3-UPDOWN: Interface FastEthernet0/11, changed state to up
00:00:45: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
00:00:45: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
00:00:45: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/11, changed state to up
00:00:48: %LINK-3-UPDOWN: Interface FastEthernet0/12, changed state to up
00:00:49: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/12, changed state to up
```

A. As FastEthernet0/12 will be the last to come up, it will not be blocked by STP.
B. Remote access management of this switch will not be possible without configuration change.
C. More VLANs will need to be created for this switch.
D. The switch will need a different IOS code in order to support VLANs and STP.

Answer: B

Question 3

The network administrator normally establishes a Telnet session with the switch from host A. The administrator's attempt to establish a connect via Telnet to the switch from host B fails, but pings from host B to other two hosts are successful. What is the issue for this problem?



Switch# **show ip interface brief**

Interface	IP-Address	OK?	Method	Status	Protocol
Vlan 1	172.19.1.250	Yes	manual	up	up
FastEthernet0/1	unassigned	Yes	unset	up	up
FastEthernet0/2	unassigned	Yes	unset	up	up
FastEthernet0/3	unassigned	Yes	unset	up	up

<output omitted>

A. Host B and the switch need to be in the same subnet.
B. The switch needs an appropriate default gateway assigned.
C. The switch interface connected to the router is down.
D. Host B need to be assigned an IP address in vlan 1.

Answer: B

Question 4

The network administrator cannot connect to Switch1 over a Telnet session, although the hosts attached to Switch1 can ping the interface Fa0/0 of the router. Given the information in the graphic and assuming that the router and Switch2 are configured properly, which of the following commands should be issued on Switch1 to correct this problem?



A. Switch1 (config)# line con0
Switch1 (config-line)# password cisco
Switch1 (config-line)#login

B. Switch1 (config)# interface fa0/1
Switch 1(config-if)# ip address 192.168.24.3 255.255.255.0

C. Switch1 (config)# ip default-gateway 192.168.24.1

D. Switch1 (config)# interface fa0/1
Switch 1(config-if)# duplex full
Switch 1(config-if)# speed 100

E. Switch1 (config)# interface fa0/1
Switch 1(config-if)# switchport mode trunk

Answer: C

Question 5

Which command can you use to set the hostname on a switch?

A. switch-mdf-c1(config)#hostname switch-mdf1
B. switch-mdf-c1>hostname switch-mdf1
C. switch-mdf-c1#hostname switch-mdf1
D. switch-mdf-c1(config-if)#hostname switch-mdf1

Answer: A

Question 6

Refer to the exhibit. What is the effect of the given configuration?

```
Switch#configuration terminal
Switch#interface VLAN 1
Switch(config-if)#ip address 192.168.2.2 255.255.255.0
Switch(config-if)#end
```

A. It configures an inactive switch virtual interface.
B. It configures an active management interface.
C. It configures the native VLAN.
D. It configures the default VLAN.

Answer: A

Question 7

Which statement about switch access ports is true?

A. They drop packets with 802.1Q tags.
B. A VLAN must be assigned to an access port before it is created.
C. They can receive traffic from more than one VLAN with no voice support
D. By default, they carry traffic for VLAN 10.

Answer: A

Question 8

Which feature allows a device to use a switch port that is configured for half-duplex to access the network?

A. CSMA/CD
B. IGMP
C. port security
D. split horizon

Answer: A

Question 9

Which option is a invalid hostname for a switch?

A. 5witch-Cisco
B. Switch-Cisco!
C. 5witchCisc0
D. SwitchCisc0

Answer: B

Question 10

Which statement about unicast frame forwarding on a switch is true?

A. The TCAM table stores destination MAC addresses
B. If the destination MAC address is unknown, the frame is flooded to every port that is configured in the same VLAN except on the port that it was received on.
C. The CAM table is used to determine whether traffic is permitted or denied on a switch
D. The source address is used to determine the switch port to which a frame is forwarded

Answer: B

Question 11

Two hosts are attached to a switch with the default configuration. Which statement about the configuration is true?

A. IP routing must be enabled to allow the two hosts to communicate.
B. The two hosts are in the same broadcast domain.
C. The switch must be configured with a VLAN to allow the two hosts to communicate.
D. Port security prevents the hosts from connecting to the switch.

Answer: B

Switch Questions 2

http://www.9tut.com/switch-questions-2

Question 1

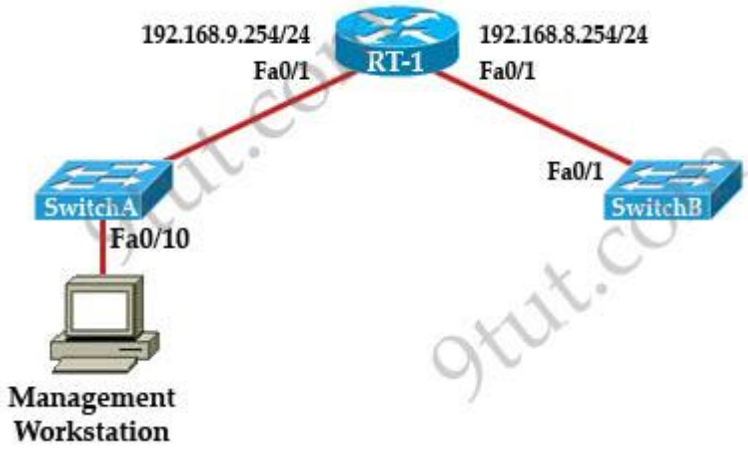
Configuration of which option is required on a Cisco switch for the Cisco IP phone to work?

A. PortFast on the interface
B. the interface as an access port to allow the voice VLAN ID

C. a voice VLAN ID in interface and global configuration mode
D. Cisco Discovery Protocol in global configuration mode

Answer: B

Question 2



A technician has installed SwitchB and needs to configure it for remote access from the management workstation connected SwitchA. Which set of commands is required to accomplish this task?

A.
SwitchB(config)#interface FastEthernet 0/1
SwitchB(config-if)#ip address 192.168.8.252 255.255.255.0
SwitchB(config-if)#no shutdown

B.
SwitchB(config)#ip default-gateway 192.168.8.254
SwitchB(config)#interface vlan 1
SwitchB(config-if)#ip address 192.168.8.252 255.255.255.0
SwitchB(config-if)#no shutdown

C.
SwitchB(config)#interface vlan 1
SwitchB(config-if)#ip address 192.168.8.252 255.255.255.0
SwitchB(config-if)#ip default-gateway 192.168.8.254 255.255.255.0
SwitchB(config-if)#no shutdown

D.
SwitchB(config)#ip default-network 192.168.8.254
SwitchB(config)#interface vlan 1
SwitchB(config-if)#ip address 192.168.8.252 255.255.255.0
SwitchB(config-if)#no shutdown

Answer: B

Question 3

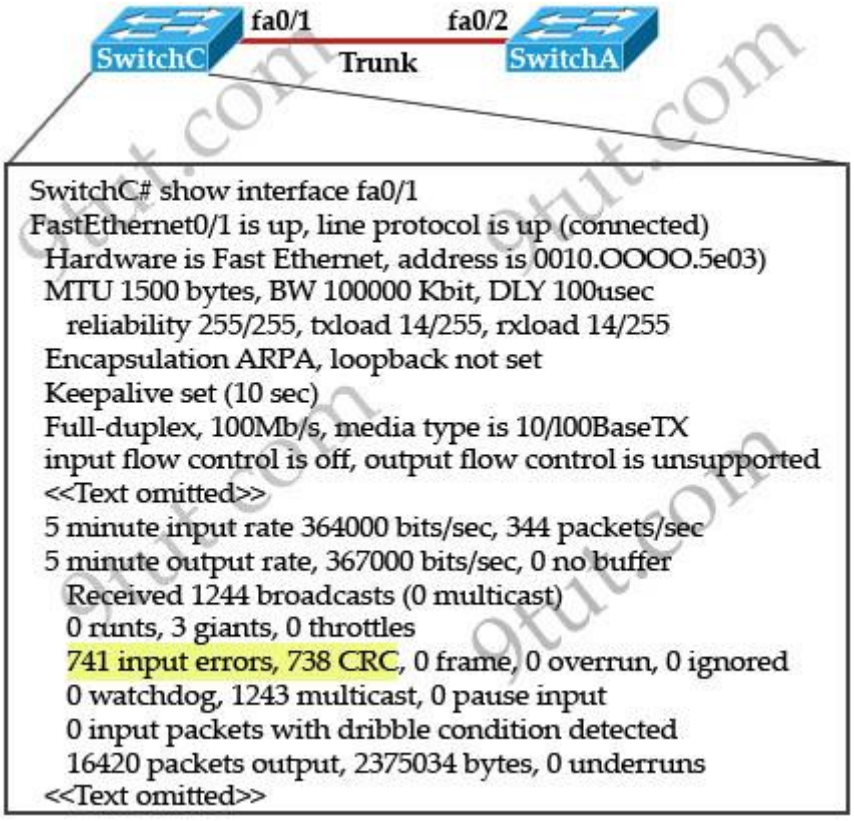
Which three statements accurately describe layer 2 Ethernet switches? (choose three)

A. Microsegmentation decreases the number of collisions on the network.
B. If a switch receives a frame for an unknown destination, it uses ARP to resolve the address.
C. Spanning Tree Protocol allows switches to automatically share vlan information.
D. In a properly functioning network with redundant switched paths, each switched segment will contain one root bridge with all its ports in the forwarding state. All other switches in that broadcast domain will have only one root port.
E. Establishing vlans increases the number of broadcast domains.
F. Switches that are configured with vlans make forwarding decisions based on both layer 2 and layer 3 address information.

Answer: A D E

Question 4

Refer to the exhibit. Give this output for SwitchC, what should the network administrator's next action be?



A. Check the trunk encapsulation mode for SwitchC's fa0/1 port.
B. Check the duplex mode for SwitchC's fa0/1 port.

C. Check the duplex mode for SwitchA's fa0/2 port.
D. Check the trunk encapsulation mode for SwitchA's fa0/2 port.

Answer: C

Question 5

Refer to the exhibit.

```
Switch-1# show mac address-table
Dynamic Addresses Count:                     3
Secure Addresses (User-defined) Count:       0
Static Addresses (User-defined) Count:       0
System Self Addresses Count:                 41
Total Mac addresses:                         50
Non-static Address Table:
Destination Address  Address Type  VLAN  Destination Port
-------------------  ------------  ----  --------------------
0010.0de0.e289       Dynamic       1     FastEthernet0/1
0010.7b00.1540       Dynamic       2     FastEthernet0/3
0010.7b00.1545       Dynamic       2     FastEthernet0/2
```

Switch-1 needs to send data to a host with a MAC address of 00b0.d056.efa4. What will Switch-1 do with this data?

A. Switch-1 will drop the data because it does not have an entry for that MAC address.
B. Switch-1 will forward the data to its default gateway.
C. Switch-1 will flood the data out all of its ports except the port from which the data originated.
D. Switch-1 will send an ARP request out all its ports except the port from which the data originated.

Answer: C

Question 6

Which utility can you use to determine whether a switch can send echo requests and replies?

A. ping
B. traceroute
C. ssh
D. telnet

Answer: A

Question 7

On which type of port can switches interconnect for multi-VLAN communication?

A. interface port
B. access port
C. switch port
D. trunk port

Answer: D

Question 8

Which two types of information are held in the MAC address table? (Choose two)

A. MAC address
B. source IP address
C. destination IP address
D. Protocols
E. Port numbers

Answer: A E

Question 9

What type of MAC address is aged automatically by the switch?

A. Dynamic
B. Static
C. Auto

Answer: A

Question 10

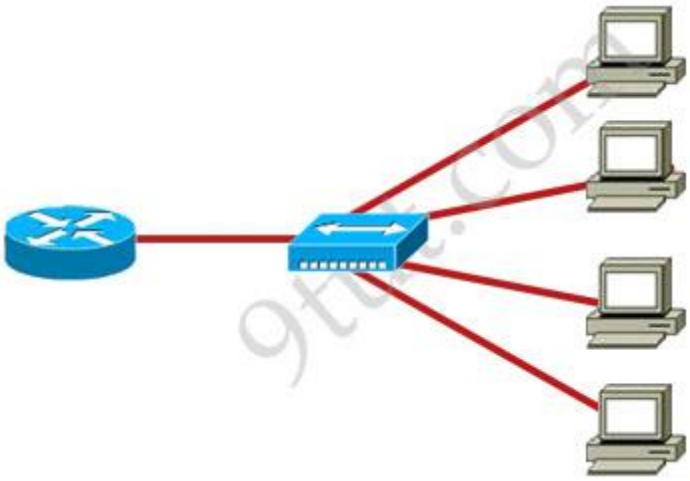
Which of the three options are switchbox configurations that can always avoid duplex mismatch errors between two switches? (Choose three)

A. Set one side of the connection to the full duplex and the other side to half duplex
B. Set both sides of the connection to full duplex
C. Set one side of the connection to auto-negotiate and the other side to half duplex
D. Set one side of the connection to auto-negotiate and the other side to full duplex
E. Set both sides of the connection to auto-negotiate
F. Set both sides of the connection to half duplex

Answer: B E F

Question 11

Refer to the exhibit.



What two results would occur if the hub were to be replaced with a switch that is configured with one Ethernet VLAN? (Choose two)
Note: This question may or may not have the exhibit.

A. The number of collision domains would remain the same.
B. The number of collision domains would decrease.
C. The number of collision domains would increase.
D. The number of broadcast domains would remain the same.
E. The number of broadcast domains would decrease.
F. The number of broadcast domains would increase.

Answer: C D

VLAN Questions

http://www.9tut.com/vlan-questions

Question 1

What are three benefits of implementing VLANs? (Choose three)

A. A more efficient use of bandwidth can be achieved allowing many physical groups to use the same network infrastructure.
B. A higher level of network security can be reached by separating sensitive data traffic from other

network traffic.
C. Broadcast storms can be mitigated by increasing the number of broadcast domains, thus reducing their size.
D. A more efficient use of bandwidth can be achieved allowing many logical networks to use the same network infrastructure.
E. Port-based VLANs increase switch-port use efficiency, thanks to 802.1 Q trunks.
F. VLANs make it easier for IT staff to configure new logical groups, because the VLANs all belong to the same broadcast domain. Broadcast storms can be mitigated by decreasing the number of broadcast domains, thus increasing their size.

Answer: B C D

Question 2

Which command can you enter to view the ports that are assigned to VLAN 20?

A. Switch#show ip interface brief
B. Switch#show interface vlan 20
C. Switch#show ip interface vlan 20
D. Switch#show vlan id 20

Answer: D

Question 3

What are three advantages of VLANs? (Choose three)

A. They allow access to network services based on department, not physical location.
B. They provide a method of conserving IP addresses in large networks.
C. They utilize packet filtering to enhance network security.
D. They can simplify adding, moving, or changing hosts on the network.
E. They provide a low-latency internetworking alternative to routed networks.
F. They establish broadcast domains in switched networks.

Answer: A D F

Question 4

Which command sequence can you enter to create VLAN 20 and assign it to an interface on a switch?

A. Switch(config)#vlan 20
Switch(config)#interface gig x/y
Switch(config-if)#switchport access vlan 20

B. Switch(config)#interface gig x/y
Switch(config-if)#vlan 20
Switch(config-vlan)#switchport access vlan 20

C. Switch(config)#vlan 20
Switch(config)#interface vlan 20
Switch(config-if)#switchport trunk native vlan 20

D. Switch(config)#vlan 20
Switch(config)#interface vlan 20
Switch(config-if)#switchport access vlan 20
E. Switch(config)#vlan 20
Switch(config)#interface vlan 20
Switch(config-if)#switchport trunk allowed vlan 20

Answer: A

Question 5

Which two circumstances can cause collision domain issues on VLAN domain? (Choose two)

A. duplex mismatches on Ethernet segments in the same VLAN
B. multiple errors on switchport interfaces
C. congestion on the switch inband path
D. a failing NIC in an end device
E. an overloaded shared segment

Answer: A C

Question 6

What is the default VLAN on an access port?

A. 0
B. 1
C. 10
D. 1024

Answer: B

Question 7

Which statement about native VLAN traffic is true?

A. Cisco Discovery Protocol traffic travels on the native VLAN by default
B. Traffic on the native VLAN is tagged with 1 by default
C. Control plane traffic is blocked on the native VLAN.
D. The native VLAN is typically disabled for security reasons

Answer: A

Question 8

Refer to the exhibit. Which statement describes the effect of this configuration?

```
Router#configure terminal
Router(config)#vlan 10
Router(config-vlan)#do show vlan
```

A. The VLAN 10 VTP configuration is displayed.
B. VLAN 10 spanning-tree output is displayed.
C. The VLAN 10 configuration is saved when the router exits VLAN configuration mode.
D. VLAN 10 is added to the VLAN database.

Answer: C

Question 9

Which method does a connected trunk port use to tag VLAN traffic?

A. IEEE 802.1w
B. IEEE 802.1D
C. IEEE 802.1Q
D. IEEE 802.1p

Answer: C

Question 10

Which of the following are benefits of VLANs? (Choose three)

A. They increase the size of collision domains.
B. They allow logical grouping of users by function.
C. They can enhance network security.
D. They increase the size of broadcast domains while decreasing the number of collision domains.
E. They increase the number of broadcast domains while decreasing the size of the broadcast domains.
F. They simplify switch administration.

Answer: B C E

VLAN Questions 2

http://www.9tut.com/vlan-questions-2

Question 1

Which feature facilitate the tagging of a specific VLAN?

A. Routing
B. Hairpinning
C. Encapsulation
D. Switching

Answer: C

Question 2

What are three advantages of VLANs? (Choose three)

A. VLANs establish broadcast domains in switched networks.
B. VLANs utilize packet filtering to enhance network security.
C. VLANs provide a method of conserving IP addresses in large networks.
D. VLANs provide a low-latency internetworking alternative to routed networks.
E. VLANs allow access to network services based on department, not physical location.
F. VLANs can greatly simplify adding, moving, or changing hosts on the network.

Answer: A E F

Question 3

Under normal operations, Cisco recommends that you configure switch ports on which VLAN?

A. on the default vlan
B. on the management vlan
C. on the native vlan
D. on any vlan except the default vlan

Answer: D

Question 4

Which two protocol can detect native vlan mismatch errors? (Choose two)

A. CDP
B. VTP
C. DTP
D. STP
E. PAGP

Answer: A D

Question 5

Which statement about VLAN configuration is true?

A. The switch must be in VTP server or transparent mode before you can configure a VLAN
B. The switch must be in config-vlan mode before you configure an extended VLAN
C. Dynamic inter-VLAN routing is supported on VLAN2 through VLAN 4064
D. A switch in VTP transparent mode save the VLAN databases to the running configuration only

Answer: A

Question 6

Which statement about vlan operation on Cisco Catalyst switches is true?

A. when a packet is received from an 802.1Q trunk, the vlan id can be determined from the source MAC address table.
B. unknown unicast frames are retransmitted only to the ports that belong to the same vlan.
C. ports between switches should be configured in access mode so that vlans can span across the ports.
D. broadcast and multicast frames are retransmitted to ports that are configured on different vlan.

Answer: B

Question 7

Which two statements about data VLANs on access ports are true ? (Choose two)

A. They can be configured as trunk ports
B. Two or more VLANs can be configured on the interface
C. 802.1Q encapsulation must be configured on the interface

D. Exactly one VLAN can be configured on the interface.
E. They can be configured as host ports.

Answer: D E

Question 8

Which feature facilitates the tagging of frames on a specific VLAN?

A. Routing
B. Hairpinning
C. Switching
D. Encapsulation

Answer: D

Question 9

Assuming the default switch configuration which vlan range can be added modified and removed on a Cisco switch?

A. 2 through 1001
B. 1 through 1001
C. 1 through 1002
D. 2 through 1005

Answer: A

Trunking Questions

http://www.9tut.com/trunking-questions

Question 1

Which command can you enter to determine whether a switch is operating in trunking mode?

A. show vlan
B. show ip interface brief
C. show interfaces
D. show interface switchport

Answer: D

Question 2

Which two commands can be used to verify a trunk link configuration status on a Cisco switch? (choose two)

A. show interfaces trunk
B. show interfaces switchport
C. show ip interface brief
D. show interfaces vlan

Answer: A B

Question 3

Refer to the exhibit:

```
ALSwitch1# show interfaces fastethernet0/24 switchport
Name: Fa0/24
Switchport: Enabled
Administrative Mode: static access
Operational Mode: static access
Administrative Trunking Encapsulation: dot1q
Operatfonal Trunking Encapsulation: native
Negotiation of Trunking: Off
Access Mode VLAN1 (default)
Trunking Native Mode VLAN: 1 (default)
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Operafional private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
Capture Mode Disabled
Capture VLANs Allowed: ALL

Protected: false

Voice VLAN: none (Inactive)
Appliance trust: none
```

Switch port FastEthernet 0/24 on AlSwitch1 will be used to create an IEEE 802.1Q-complaint trunk to another switch. Based on the output shown, What is the reason the trunk does not form, even thought the proper cabling has been attached?

A. VLANs have not been created yet.
B. An IP address must be configured for the port.
C. The port is currently configured for access mode.
D. The correct encapsulation type has not been configured.
E. The no shutdown command has not been entered for the port.

Answer: C

Question 4

Which two of these are characteristics of the 802.1Q protocol? (Choose two)

A. It is a layer 2 messaging protocol which maintains vlan configurations across network.
B. It includes an 8-bit field which specifies the priority of a frame.
C. It is used exclusively for tagging vlan frames and does not address network reconvergence following switched network topology changes.
D. It modifies the 802.3 frame header and thus requires that the FCS be recomputed.
E. It is a trunking protocol capable of earring untagged frames.

Answer: D E

Question 5

How to create a trunk port and allow VLAN 20? (Choose three)

A. switchport trunk encapsulation dot1q
B. switchport mode trunk
C. switchport trunk allowed vlan 20
D. switchport trunk native vlan 20
E. ?

Answer: A B C

Question 6

Which mode is compatible with Trunk, Access, and desirable ports?

A. Trunk Ports
B. Access Ports
C. Dynamic Auto
D. Dynamic Desirable

Answer: C (?)

Question 7

What field is consist of 6 bytes in the field identification frame in IEEE 802.1Q?

A. SA
B. DA
C. FCS
D. other

Answer: A

Question 8

Which statement about DTP is true?

A. It uses the native VLAN.
B. It negotiates a trunk link after VTP has been configured.
C. It uses desirable mode by default.
D. It sends data on VLAN 1.

Answer: D

Question 9

How can you disable DTP on a switch port?

A. Configure the switch port as a trunk.
B. Add an interface on the switch to a channel group.
C. Change the operational mode to static access.
D. Change the administrative mode to access.

Answer: A (no correct answer, in fact)

Question 10

What is true about DTP? (Choose three)

A. Layer 2 protocol
B. Layer 3 protocol
C. Proprietary protocol
D. enabled by default
E. disabled by default

Answer: A C D

Trunking Questions 2

http://www.9tut.com/trunking-questions-2

Question 1

Which DTP switchport mode allow the port to create a trunk port if the the port is in trunk, dynamic auto and dynamic desirable mode?

A. Dynamic Auto
B. Dynamic Desirable
C. Access
D. Trunk

Answer: B

Question 2

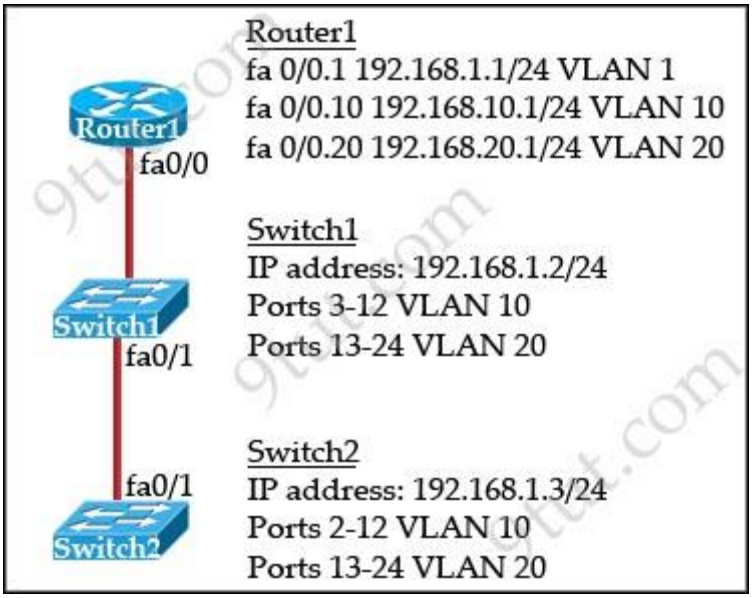
What is the function of the command **switchport trunk native vlan 999** on a trunk port?

A. It designates VLAN 999 for untagged traffic.
B. It blocks VLAN 999 traffic from passing on the trunk.
C. It creates a VLAN 999 interface.
D. It designates VLAN 999 as the default for all unknown tagged traffic.

Answer: A

Question 3

Refer to the exhibit:



How should the FastEthernet0/1 port on the 2950 model switches that are shown in the exhibit be configured to allow connectivity between all devices?

A. The ports only need to be connected by a crossover cable.

B. SwitchX (config)#interface FastEthernet 0/1
SwitchX(config-if)#switchport mode trunk

C. SwitchX (config)#interface FastEthernet 0/1
SwitchX(config-if)#switchport mode access
SwitchX(config-if)#switchport access vlan 1

D. SwitchX (config)#interface FastEthernet 0/1
SwitchX(config-if)#switchport mode trunk
SwitchX(config-if)#switchport trunk vlan 1
SwitchX(config-if)#switchport trunk vlan 10
SwitchX(config-if)#switchport trunk vlan 20

Answer: B

Question 4

Refer to the exhibit:

```
Switch1# show mac address-table
System Self Addresses Count: 41
Total MAC addresses: 50
Non-static Address Table:
Destination Address     AddressType     VLAN    Destination Port
---------------------   ---------------  ----   --------------------
00A0.0de0.e289          Dynamic          1      FastEthernet0/1
00A0.7b00.1540          Dynamic          2      FastEthernet0/5
00A0.7b00.1545          Dynamic          2      FastEthernet0/5
00A0.5c74.0076          Dynamic          1      FastEthernet0/1
00A0.5cf4.0077          Dynamic          3      FastEthernet0/1
00A0.5cf4.1315          Dynamic          1      FastEthernet0/1
00A0.70cb.f301          Dynamic          2      FastEthernet0/1
00A0.70cb.3f01          Dynamic          5      FastEthernet0/2
00A0.1e42.9978          Dynamic          4      FastEthernet0/1
00A0.1e9f.3900          Dynamic          3      FastEthernet0/1
00A0.70cb.33f1          Dynamic          6      FastEthernet0/3
00A0.70cb.103f          Dynamic          6      FastEthernet0/4

<output omitted>

Switch1#show cdp neighbors
Capability Codes:       R - Router, T - Trans Bridge, B - Source Route Bridge
                        S - Switch, H - Host, I - IGMP, r - Repeater

Device ID       Local Intrfce     Holdtime     Capability     Platform     Port ID
Switch2         Fas 0/1           157             S           2950-12      Fas 0/1
Switch3         Fas 0/2           143             S           2950-12      Fas 0/5

Switch1#
```

Which two statements are true of the interfaces on Switch1? (Choose two)

A. Interface FastEthernet0/2 has been disabled.
B. Multiple devices are connected directly to FastEthernet0/1.
C. FastEthernet0/1 is configured as a trunk link.
D. FastEthernet0/1 is connected to a host with multiple network interface cards
E. FastEthernet0/5 has statically assigned MAC addresses.
F. A hub is connected directly to FastEthernet0/5

Answer: C F

Question 5

Which IEEE standard protocol is initiated as a result of successful DTP completion in a switch over FastEthernet?

A. 802.3ad
B. 802.1w
C. 802.1Q
D. 802.1d

Answer: C

Question 6

Which three of these statements regarding 802.1Q trunking are correct? (Choose three)

A. 802.1Q native VLAN frames are untagged by default.
B. 802.1Q trunking ports can also be secure ports.
C. 802.1Q trunks can use 10 Mb/s Ethernet interfaces.
D. 802.1Q trunks require full-duplex, point-to-point connectivity.
E. 802.1Q trunks should have native VLANs that are the same at both ends.

Answer: A C E

Question 7

What are the possible trunking modes for a switch port? (Choose three)

A. transparent
B. auto
C. on
D. desirable
E. client
F. forwarding

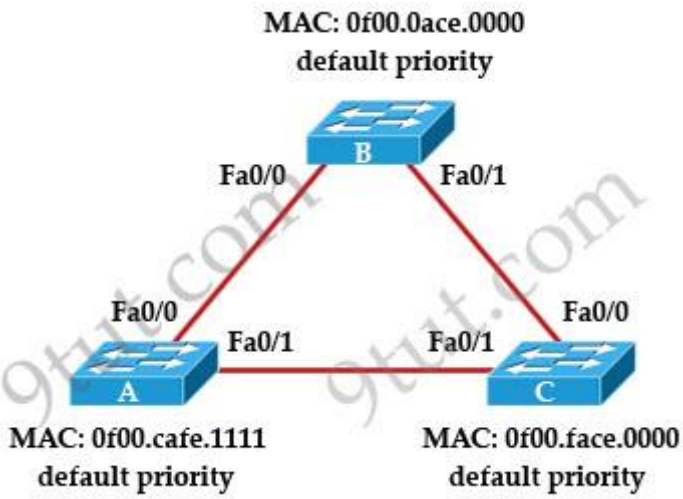
Answer: B C D

STP Questions

http://www.9tut.com/stp-questions

Question 1

Refer to the topology shown in the exhibit. Which ports will be STP designated ports if all the links are operating at the same bandwidth? (Choose three)



A. Switch A – Fa0/0
B. Switch A – Fa0/1
C. Switch B – Fa0/0
D. Switch B – Fa0/1
E. Switch C – Fa0/0
F. Switch C – Fa0/1

Answer: B C D

Question 2

If the primary root bridge experiences a power loss, which switch takes over?

A. switch 0040.0BC0.90C5
B. switch 00E0.F90B.6BE3
C. switch 0004.9A1A.C182
D. switch 00E0.F726.3DC6

Answer: C

Question 3

If primary and secondary root switches with priority 16384 both experience catastrophic losses, which tertiary switch can take over?

A. a switch with priority 20480
B. a switch with priority 8192
C. a switch with priority 4096
D. a switch with priority 12288

Answer: A

Question 4

Which spanning-tree protocol rides on top of another spanning-tree protocol?

A. MSTP
B. RSTP
C. PVST+
D. Mono Spanning Tree

Answer: A

Question 5

Which IEEE standard does PVST+ use to tunnel information?

A. 802.1x
B. 802.1q
C. 802.1w
D. 802.1s

Answer: B

Question 6

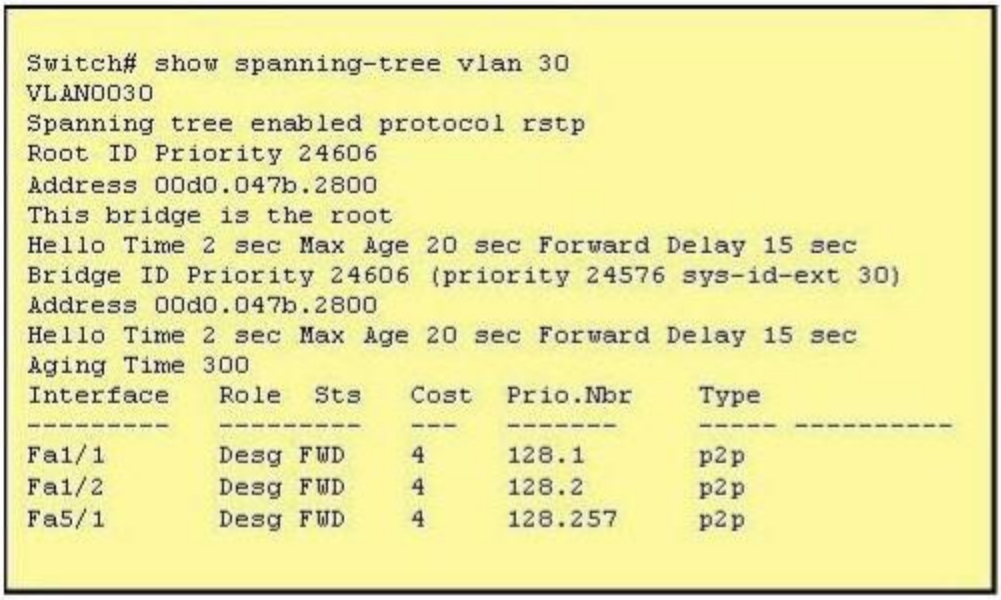
Which process is associated with spanning-tree convergence?

A. determining the path cost
B. electing designated ports
C. learning the sender bridge ID
D. assigning the port ID

Answer: B

Question 7

Refer to the exhibit. The output that is shown is generated at a switch. Which three of these statements are true? (Choose three)



```
Switch# show spanning-tree vlan 30
VLAN0030
Spanning tree enabled protocol rstp
Root ID Priority 24606
Address 00d0.047b.2800
This bridge is the root
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Bridge ID Priority 24606 (priority 24576 sys-id-ext 30)
Address 00d0.047b.2800
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Aging Time 300
Interface   Role  Sts   Cost  Prio.Nbr    Type
---------   ---------   ---   -------     ----- ----------
Fa1/1       Desg FWD    4     128.1       p2p
Fa1/2       Desg FWD    4     128.2       p2p
Fa5/1       Desg FWD    4     128.257     p2p
```

A. All ports will be in a state of discarding, learning or forwarding.
B. Thirty VLANs have been configured on this switch.
C. The bridge priority is lower than the default value for spanning tree.
D. All interfaces that are shown are on shared media.
E. All designated ports are in a forwarding state.
F. The switch must be the root bridge for all VLANs on this switch.

Answer: A C E

Question 8

When an interface is configured with PortFast BPDU guard, how does the interface respond when it receives a BPDU?

A. It continues operating normally.
B. It goes into an errdisable state.
C. It goes into a down/down state.
D. It becomes the root bridge for the configured VLAN.

Answer: B

STP Questions 2

http://www.9tut.com/stp-questions-2

Question 1

Which spanning-tree feature places a port immediately into a forwarding stated?

A. BPDU guard
B. PortFast
C. loop guard
D. UDLD
E. Uplink Fast

Answer: B

Question 2

Which switch would STP choose to become the root bridge in the selection process?

A. 32768: 11-22-33-44-55-66
B. 32768: 22-33-44-55-66-77
C. 32769: 11-22-33-44-55-65
D. 32769: 22-33-44-55-66-78

Answer: A

Question 3

Which type does a port become when it receives the best BPDU on a bridge?

A. The designated port
B. The backup port
C. The alternate port
D. The root port

Answer: D

Question 4

Which value can you modify to configure a specific interface as the preferred forwarding interface?

A. The interface number
B. The port priority
C. The VLAN priority
D. The hello time

Answer: B

Question 5

What is one benefit of PVST+?

A. PVST+ reduces the CPU cycles for all the switches in the network.
B. PVST+ automatically selects the root bridge location, to provide optimization.
C. PVST+ allows the root switch location to be optimized per vlan.
D. PVST+ supports Layer 3 load balancing without loops.

Answer: C

Question 6

Three switches are connected to one another via trunk ports. Assuming the default switch configuration, which switch is elected as the root bridge for the spanning-tree instance of VLAN 1?

A. the switch with the highest MAC address
B. the switch with the lowest MAC address
C. the switch with the highest IP address
D. the switch with the lowest IP address

Answer: B

Question 7

Which protocol is a Cisco proprietary implementation of STP?

A. CST
B. RSTP
C. MSTP
D. PVST+

Answer: D

Question 8

A BPDU guard is configured on an interface that has PortFast enable. Which state does the interface enter when it receives a BPDU?

A. Blocking
B. Shutdown
C. Listening
D. Errdisable

Answer: D

Question 9

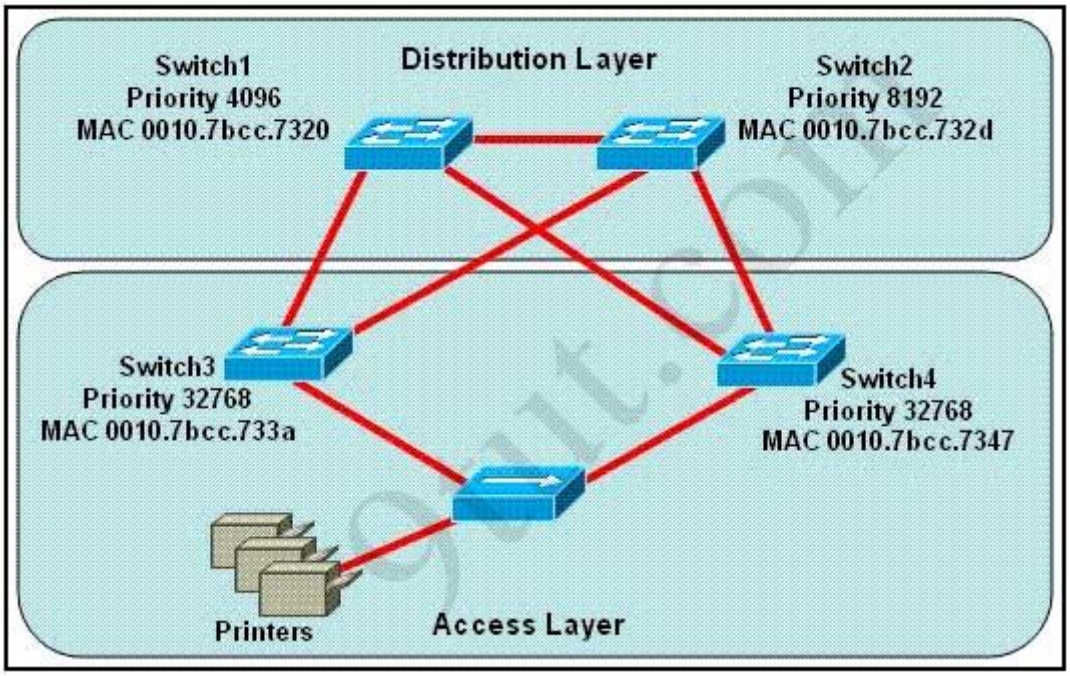
Which two protocols are used by bridges and/or switches to prevent loops in a layer 2 network? (Choose two)

A. 802.1D
B. VTP
C. 802.1Q
D. SAP
E. STP

Answer: A E

Question 10

Refer to the exhibit. Which switch provides the spanning-tree designated port role for the network segment that services the printers?



A. Switch1
B. Switch2
C. Switch3
D. Switch4

Answer: C

STP Questions 3

http://www.9tut.com/stp-questions-3

Question 1

When you enable PortFast on a switch port, the port immediately transitions to which state?

A. Blocking
B. Forwarding
C. Learning
D. Listening

Answer: B

Question 2

What can you change to select switch as root bridge?

A. make lower priority
B. make higher priority
C. make lower path cost
D. make higher path cost

Answer: A

Question 3

Which type of port role does not participate in STP calculation?

A. Listening
B. Learning
C. Forwarding
D. Discarding

Answer: D

Question 4

Which statement about spanning-tree root-bridge election is true?

A. It is always performed automatically
B. Each VLAN must have its own root bridge

C. Each VLAN must use the same root bridge
D. Each root bridge must reside on the same root switch

Answer: B

Question 5

A question about BPDU. What would a PortFast BPDU guard port do when it is configured on a port? (Choose two)

A. err-disabled when port receives BPDUs
B. supported only on nontrunking access ports
C. forward when port receives BPDUs
D. supported on trunk ports

Answer: A B

Question 6

What is one benefit of PVST+?

A. PVST+reduces the CPU cycles for all the switches in the network
B. PVST+automatically selects the root bridge location,to provide optimized bandwidth usage.
C. PVST+allow the root switch location to be optimized per vlan.
D. PVST+supports Layer 3 load balancing without loops.

Answer: C

Question 7

For which two protocols can PortFast alleviate potential host startup issues? (Choose two)

A. DHCP
B. DNS
C. OSPF
D. RIP
E. CDP

Answer: A B

Question 8

Refer to the exhibit. Which statement is true?

```
SwitchA# show spanning-tree vlan 20

VLAN0020
  Spanning tree enabled protocol rstp
  Root ID     Priority    24596
              Address     0017.596d.2a00
              Cost        38
              Port        11(FastEthernet0/10)
              Hello Time   2 sec  Max Age 20 sec  Forward Delay 15 sec

  Bridge ID   Priority    28692  (priority 28672 sys-id-ext 1)
              Address     0017.596d.1580
              Hello Time  2 sec  Max Age 20 sec  Forward Delay 15 sec
              Aging Time  300

Interface        Role Sts Cost      Prio.Nbr Type
---------------- ---- --- --------- -------- --------------------------
Fa0/11           Root FWD 19        128.11   P2p
Fa0/12           Altn BLK 19        128.12   P2p
```

A. The Fa0/11 role confirms that SwitchA is the root bridge for VLAN 20.
B. VLAN 20 is running the Per VLAN Spanning Tree Protocol.
C. The MAC address of the root bridge is 0017.596d.1580.
D. SwitchA is not the root bridge, because not all of the interface roles are designated.

Answer: D

Question 9

What will take place on the port that enabled portfast?

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

Answer: A

RSTP Questions

http://www.9tut.com/rstp-questions

Question 1

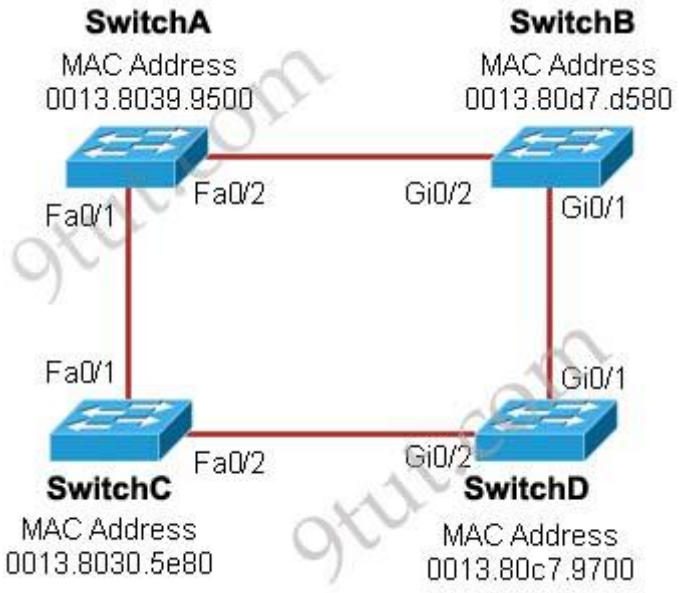
Which two spanning-tree port states does RSTP combine to allow faster convergence? (Choose two)

A. discarding
B. listening
C. blocking
D. forwarding
E. learning

Answer: B C

Question 2

Refer to the exhibit. Each of these four switches has been configured with a hostname, as well as being configured to run RSTP. No other configuration changes have been made. Which three of these show the correct RSTP port roles for the indicated switches and interfaces? (Choose three)



A. SwitchA, Fa0/2, designated
B. SwitchA, Fa0/1, root
C. SwitchB, Gi0/2, root
D. SwitchB, Gi0/1, designated
E. SwitchC, Fa0/2, root
F. SwitchD, Gi0/2, root

Answer: A B F

Question 3

Which two switch states are valid for 802.1w? (Choose two)

A. listening
B. backup
C. disabled
D. learning
E. discarding

Answer: D E

Question 4

Which two states are the port states when RSTP has converged? (choose two)

A. discarding
B. learning
C. disabled
D. forwarding
E. listening

Answer: A D

Question 5

Which three statements about RSTP are true? (choose three)

A. RSTP significantly reduces topology reconverging time after a link failure.
B. RSTP expends the STP port roles by adding the alternate and backup roles.
C. RSTP port states are blocking, discarding, learning, or forwarding.
D. RSTP also uses the STP proposal-agreement sequence.
E. RSTP use the same timer-based process as STP on point-to-point links.
F. RSTP provides a faster transition to the forwarding state on point-to-point links than STP does.

Answer: A B F

Question 6

Which command enables RSTP on a switch?

A. spanning-tree mode rapid-pvst
B. spanning-tree uplinkfast
C. spanning-tree backbonefast
D. spanning-tree mode mst

Answer: A

Question 7

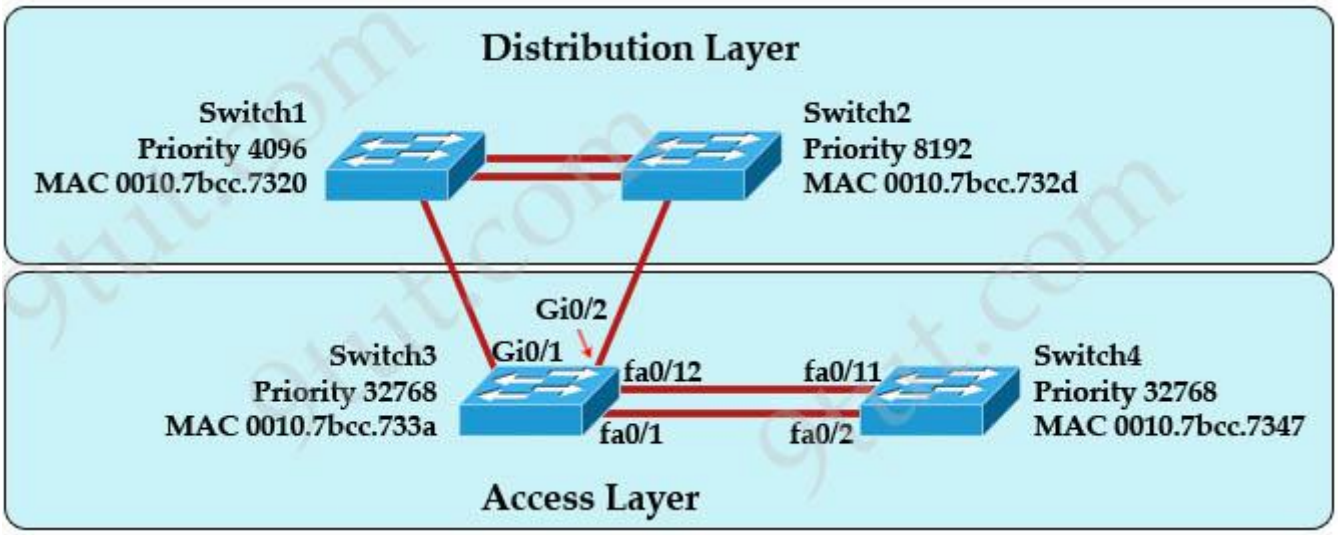
Which two of these statements regarding RSTP are correct? (Choose two)

A. RSTP cannot operate with PVST+.
B. RSTP defines new port roles.
C. RSTP defines no new port states.
D. RSTP is a proprietary implementation of IEEE 802.1D STP.
E. RSTP is compatible with the original IEEE 802.1D STP.

Answer: B E

Question 8

Refer to the exhibit. At the end of an RSTP election process, which access layer switch port will assume the discarding role?



A. Switch3, port fa0/1
B. Switch3, port fa0/12
C. Switch4, port fa0/11
D. Switch4, port fa0/2
E. Switch3, port Gi0/1

Answer: C

Question 9

Which option describes how a switch in rapid PVST+ mode responds to a topology change?

A. It immediately deletes dynamic MAC addresses that were learned by all ports on the switch.
B. It sets a timer to delete all MAC addresses that were learned dynamically by ports in the same STP instance.
C. It sets a timer to delete dynamic MAC addresses that were learned by all ports on the switch.
D. It immediately deletes all MAC addresses that were learned dynamically by ports in the same STP instance.

Answer: D

Question 10

Which RPVST+ port state is excluded from all STP operations?

A. learning
B. forwarding
C. blocking
D. disabled

Answer: D

Question 11

Which port state is introduced by Rapid-PVST?

A. learning
B. listening
C. discarding
D. forwarding

Answer: C

VTP Questions

http://www.9tut.com/vtp-questions

Question 1

Which protocol supports sharing the VLAN configuration between two or more switches?

A. multicast
B. STP

C. VTP
D. split-horizon

Answer: C

Question 2

How to enable VLANs automatically across multiple switches?

A. Configure VLAN
B. Confiture NTP
C. Configure each VLAN
D. Configure VTP

Answer: D

Question 3

Which VTP mode can not make a change to vlan?

A. Server
B. Client
C. Transparent
D. Off

Answer: B

Question 4

Which DTP switch port mode allows the port to create a trunk link if the neighboring port is in trunk mode, or desirable auto mode?

A. Dynamic auto
B. Trunk
C. Dynamic desirable
D. Access

Answer: A

Question 5

To configure the VLAN trunking protocol to communicate VLAN information between two switches, what two requirements must be met? (Choose two)

A. Each end of the trunk line must be set to IEEE 802.1E encapsulation.
B. The VTP management domain name of both switches must be set the same.
C. All ports on both the switches must be set as access ports.
D. One of the two switches must be configured as a VTP server.
E. A rollover cable is required to connect the two switches together.
F. A router must be used to forward VTP traffic between VLANs.

Answer: B D

Question 6

What are the requirements for running VTP? (Choose two)

A. VTP domain names must be different
B. VTP domain names must be the same
C. VTP server must have the highest revision numbers
D. All devices need to have the same VTP version

Answer: B D

Port Security Questions

http://www.9tut.com/port-security-questions

Question 1

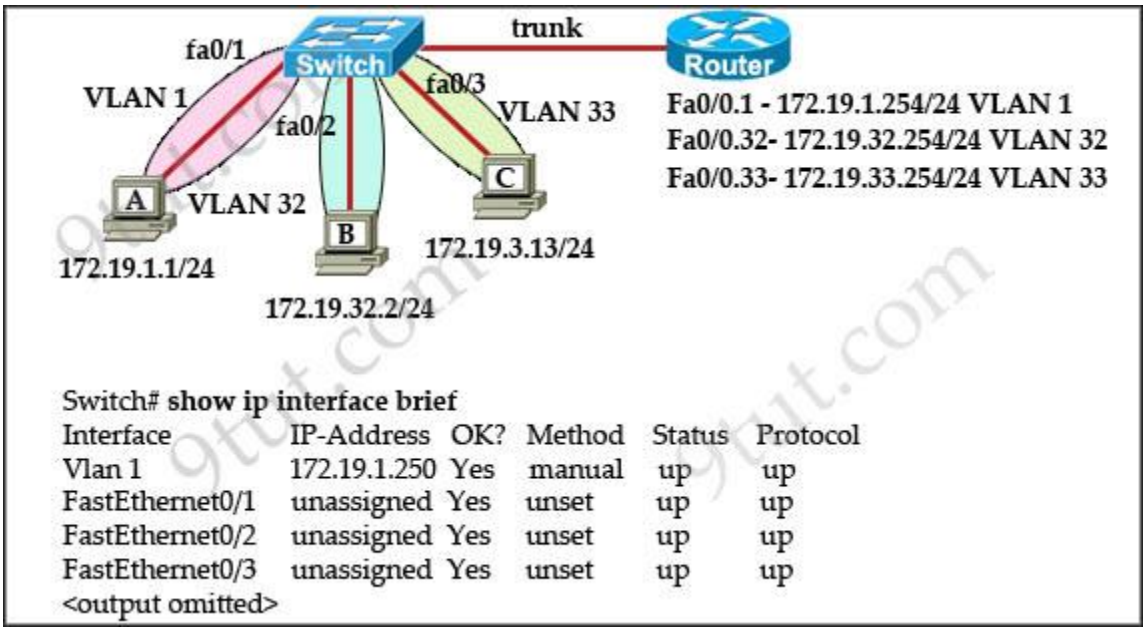
A network administrator needs to configure port security on a switch. Which two statements are true? (Choose two)

A. The network administrator can apply port security to dynamic access ports
B. The network administrator can configure static secure or sticky secure mac addresses in the voice vlan.
C. The sticky learning feature allows the addition of dynamically learned addresses to the running configuration.
D. The network administrator can apply port security to EtherChannels.
E. When dynamic mac address learning is enabled on an interface, the switch can learn new addresses up to the maximum defined.

Answer: C E

Question 2

The network administrator normally establishes a Telnet session with the switch from host A. The administrator's attempt to establish a connect via Telnet to the switch from host B fails, but pings from host B to other two hosts are successful. What is the issue for this problem?



Switch# **show ip interface brief**

Interface	IP-Address	OK?	Method	Status	Protocol
Vlan 1	172.19.1.250	Yes	manual	up	up
FastEthernet0/1	unassigned	Yes	unset	up	up
FastEthernet0/2	unassigned	Yes	unset	up	up
FastEthernet0/3	unassigned	Yes	unset	up	up

<output omitted>

A. Host B and the switch need to be in the same subnet.
B. The switch needs an appropriate default gateway assigned.
C. The switch interface connected to the router is down.
D. Host B need to be assigned an IP address in vlan 1.

Answer: B

Question 3

Which option is the default switch port port-security violation mode?

A. shutdown
B. protect
C. shutdown vlan
D. restrict

Answer: A

Question 4

By default, how many MAC addresses are permitted to be learned on a switch port with port security enabled?

A. 8
B. 2
C. 1
D. 0

Answer: C

Question 5

Which set of commands is recommended to prevent the use of a hub in the access layer?

A.
switch(config-if)#switchport mode trunk
switch(config-if)#switchport port-security maximum 1

B.
switch(config-if)#switchport mode trunk
switch(config-if)#switchport port-security mac-address 1

C.
switch(config-if)#switchport mode access
switch(config-if)#switchport port-security maximum 1

D.
switch(config-if)#switchport mode access
switch(config-if)#switchport port-security mac-address 1

Answer: C

Question 6

Select the action that results from executing these commands:

Switch(config-if)# switchport port-security
Switch(config-if)# switchport port-security mac-address sticky

A. A dynamically learned MAC address is saved in the startup-configuration file.
B. A dynamically learned MAC address is saved in the running-configuration file.
C. A dynamically learned MAC address is saved in the VLAN database.
D. Statically configured MAC addresses are saved in the startup-configuration file if frames from that address are received.
E. Statically configured MAC addresses are saved in the running-configuration file if frames from that address are received.

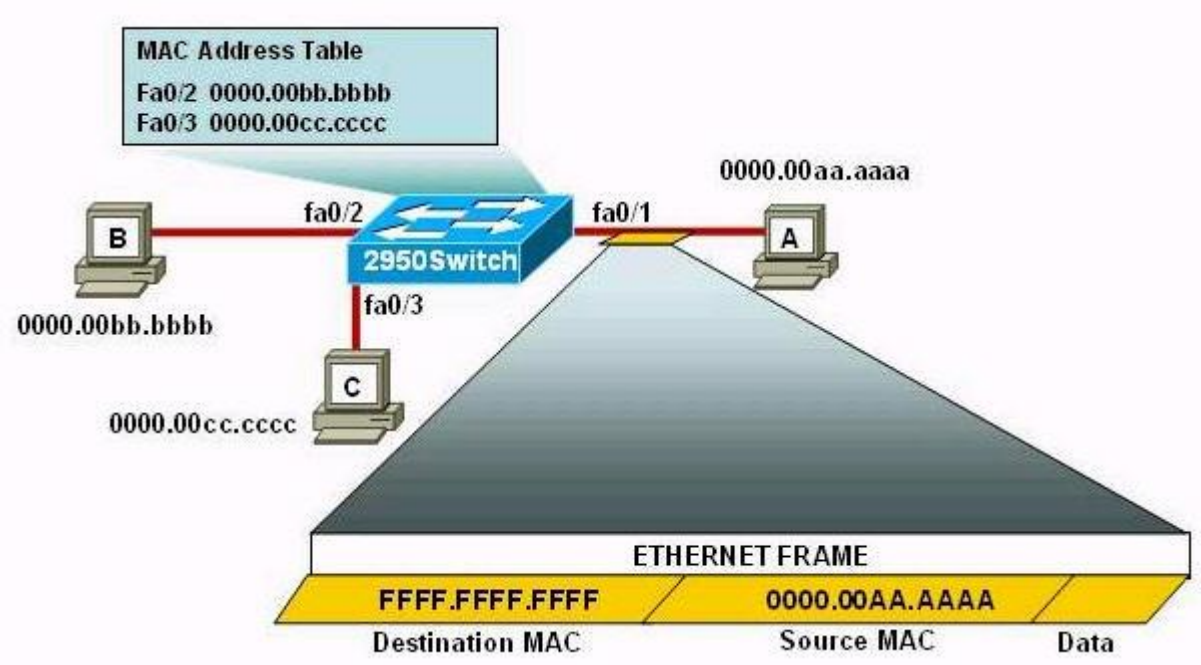
Answer: B

Question 7

Refer to the exhibit. The following commands are executed on interface fa0/1 of 2950Switch.

2950Switch(config-if)#switchport port-security
2950Switch(config-if)#switchport port-security mac-address sticky
2950Switch(config-if)#switchport port-security maximum 1

The Ethernet frame that is shown arrives on interface fa0/1. What two functions will occur when this frame is received by 2950Switch? (Choose two)



A. The MAC address table will now have an additional entry of fa0/1 FFFF.FFFF.FFFF.
B. Only host A will be allowed to transmit frames on fa0/1.
C. This frame will be discarded when it is received by 2950Switch.
D. All frames arriving on 2950Switch with a destination of 0000.00aa.aaaa will be forwarded out fa0/1.
E. Hosts B and C may forward frames out fa0/1 but frames arriving from other switches will not be forwarded out fa0/1.
F. Only frames from source 0000.00bb.bbbb, the first learned MAC address of 2950Switch, will be forwarded out fa0/1.

Answer: B D

Question 8

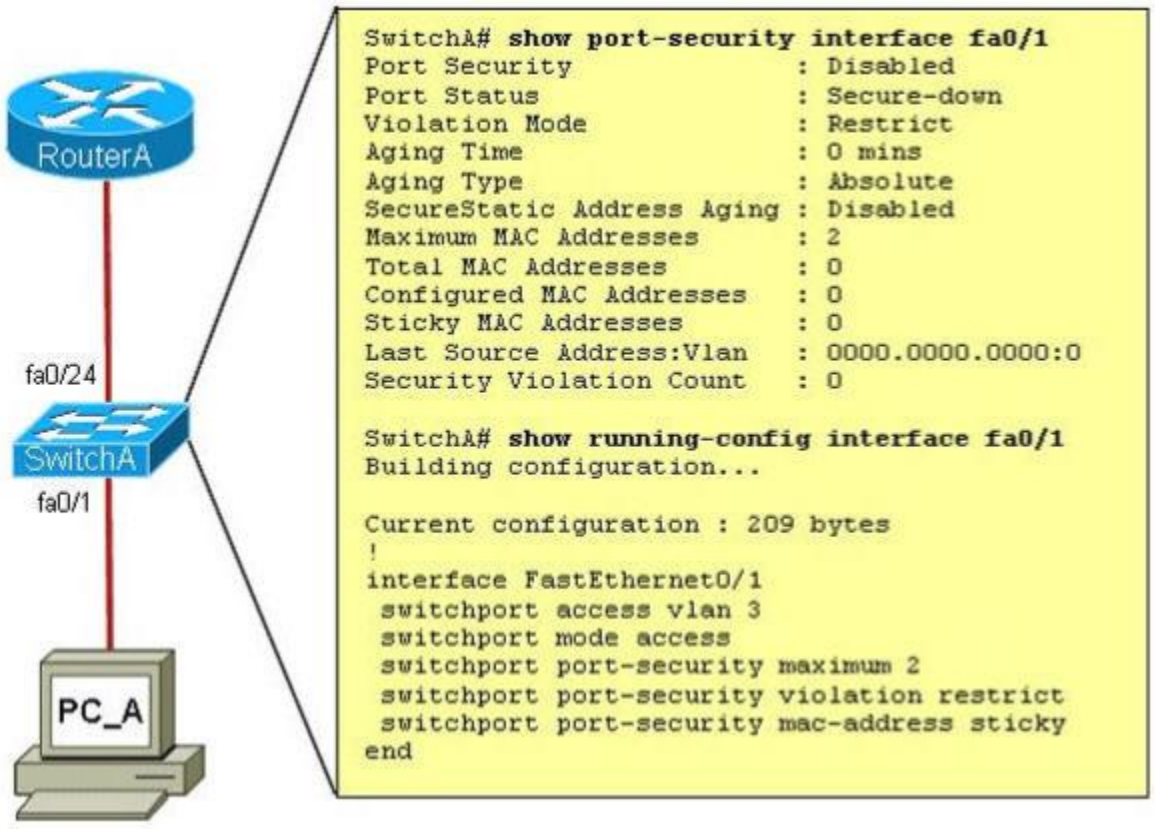
Which two commands correctly verify whether port security has been configured on port FastEthernet 0/12 on a switch? (Choose two)

A. SW1# show switchport port-security interface FastEthernet 0/12
B. SW1# show switchport port-secure interface FastEthernet 0/12
C. SW1# show port-security interface FastEthernet 0/12
D. SW1# show running-config

Answer: C D

Question 9

Refer to the exhibit. A junior network administrator was given the task of configuring port security on SwitchA to allow only PC_A to access the switched network through port fa0/1. If any other device is detected, the port is to drop frames from this device. The administrator configured the interface and tested it with successful pings from PC_A to RouterA, and then observes the output from these two show commands.



Which two of these changes are necessary for SwitchA to meet the requirements? (Choose two)

A. Port security needs to be globally enabled.
B. Port security needs to be enabled on the interface.
C. Port security needs to be configured to shut down the interface in the event of a violation.
D. Port security needs to be configured to allow only one learned MAC address.
E. Port security interface counters need to be cleared before using the show command.
F. The port security configuration needs to be saved to NVRAM before it can become active.

Answer: B D

Question 10

Which condition does the err-disabled status indicate on an Ethernet interface?

A. There is a duplex mismatch.
B. The device at the other end of the connection is powered off.
C. The serial interface is disabled.
D. The interface is configured with the shutdown command.
E. Port security has disabled the interface.
F. The interface is fully functioning.

Answer: E

Port Security Questions 2

http://www.9tut.com/port-security-questions-2

Question 1

Which port security mode can assist with troubleshooting by keeping count of violations?

A. access
B. protect
C. restrict
D. shutdown

Answer: C

Question 2

Which port security violation mode allows traffic from valid mac address to pass but block traffic from invalid MAC address?

A. protect
B. shutdown
C. shutdown vlan
D. restrict

Answer: A

Question 3

Which type of secure MAC address must be configured manually?

A. dynamic
B. bia
C. static
D. sticky

Answer: C

Question 4

Which command can you enter in a network switch configuration so that learned MAC addresses are saved in configuration as they connect?

A. Switch(config-if)#switch port-security
B. Switch(config-if)#switch port-security mac-address sticky
C. Switch(config-if)#switch port-security maximum 10
D. Switch(config-if)#switch mode access

Answer: B

SPAN Questions

http://www.9tut.com/span-questions

Question 1

Which feature can you use to monitor traffic on a switch by replicating it to another port or ports on the same switch?

A. copy run start
B. traceroute
C. the ICMP Echo IP SLA
D. SPAN

Answer: D

EtherChannel Questions

http://www.9tut.com/etherchannel-questions

Question 1

Refer to the exhibit. While troubleshooting a switch, you executed the "show interface port-channel 1 etherchannel" command and it returned this output. Which information is provided by the Load value?

```
Index  Load   Port    EC state         No of bits
-----+------+------+-----------------+----------
0      36     Gi1/1   Active                3
1      84     Gi1/2   Active                3
2      16     Gi1/3   Active                2
```

A. the percentage of use of the link
B. the preference of the link
C. the session count of the link
D. the number source-destination pairs on the link

Answer: D

Question 2

What is the status of port-channel if LACP is misconfigured?

A. Forwarding
B. Enabled
C. Disabled
D. Errdisabled

Answer: C

Question 3

What parameter can be different on ports within an EtherChannel?

A. speed
B. DTP negotiation settings
C. trunk encapsulation
D. duplex

Answer: B

Question 4

Which option is the industry-standard protocol for EtherChannel?

A. LACP
B. PAGP
C. Cisco Discovery Protocol
D. DTP

Answer: A

Question 5

Which two EtherChannel PAgP modes can you configure? (Choose two)

A. Auto
B. Desirable
C. Active
D. Passive
E. On

Answer: A B

Refer to the exhibit.




```
SW1#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
        M - not in use, minimum links not met
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port
Number of channel-groups in use: 2
Number of aggregators:           2

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------
1      Po1(SU)       LACP        Fa0/2(P)    Fa0/1(D)

SW1#show interface fa0/1
FastEthernet0/1 is down, line protocol is down (disabled)
  Hardware is AmdP2, address is aabb.cc00.0510
       (bia aabb.cc00.0510)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 10Mb/s
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:04, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/2000/0/0 (size/max/drops/flushes);
       Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
```

```
SW2#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
        M - not in use, minimum links not met
        u - unsuitable for bundling
        w - waiting to be aggregated
        d - default port
Number of channel-groups in use: 2
Number of aggregators:           2

Group  Port-channel  Protocol    Ports
------+-------------+-----------+-----------------------
1      Po1(SU)       LACP        Fa0/2(P)    Fa0/1(D)

SW2#show interface fa0/1
FastEthernet0/1 is down, line protocol is down (disabled)
  Hardware is AmdP2, address is aabb.cc00.0510
       (bia aabb.cc00.0510)
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
     reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  Full-duplex, 100Mb/s
  input flow-control is off, output flow-control is unsupported
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:04, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/2000/0/0 (size/max/drops/flushes);
       Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/0 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
```

If the devices produced the given output, what is the cause of the EtherChannel problem?

A. SW1's Fa0/1 interface is administratively shut down.
B. There is an encapsulation mismatch between SW1's Fa0/1 and SW2's Fa0/1 interfaces.
C. There is an MTU mismatch between SW1's Fa0/1 and SW2's Fa0/1 interfaces.
D. There is a speed mismatch between SW1's Fa0/1 and SW2's Fa0/1 interfaces.

Answer: D

InterVLAN Routing

http://www.9tut.com/intervlan-routing

Question 1

Which type of device can be replaced by the use of subinterfaces for VLAN routing?

A. Layer 2 bridge
B. Layer 2 switch
C. Layer 3 switch
D. router

Answer: C

Question 2

Which technology can enable multiple VLANs to communicate with one another?

A. inter-VLAN routing using a Layer 3 switch
B. inter-VLAN routing using a Layer 2 switch
C. intra-VLAN routing using router on a stick
D. intra-VLAN routing using a Layer 3 switch

Answer: A

Question 3

Which configuration can you apply to enable encapsulation on a subinterface?

A. interface FastEthernet 0/0
encapsulation dot1Q 30
ip address 10.1.1.30 255.255.255.0

B. interface FastEthernet 0/0.30
ip address 10.1.1.30 255.255.255.0

C. interface FastEthernet 0/0.30
description subinterface vlan 30

D. interface FastEthernet 0/0.30
encapsulation dot1Q 30
ip address 10.1.1.30 255.255.255.0

Answer: D

Question 4

Which statement about slow inter VLAN forwarding is true?

A. The VLAN is experiencing slowness in the point-to-point collisionless connection.
B. The VLANs are experiencing slowness because multiple devices are connected to the same hub.
C. The local VLAN is working normally, but traffic to the alternate VLAN is forwarded slower than expected.
D. The entire VLAN is experiencing slowness.
E. The VLANs are experiencing slowness due to a duplex mismatch.

Answer: E

Question 5

Which function enables an administrator to route multiple VLANs on a router?

A. IEEE 802.1X
B. HSRP
C. port channel
D. router on a stick

Answer: D

Question 6

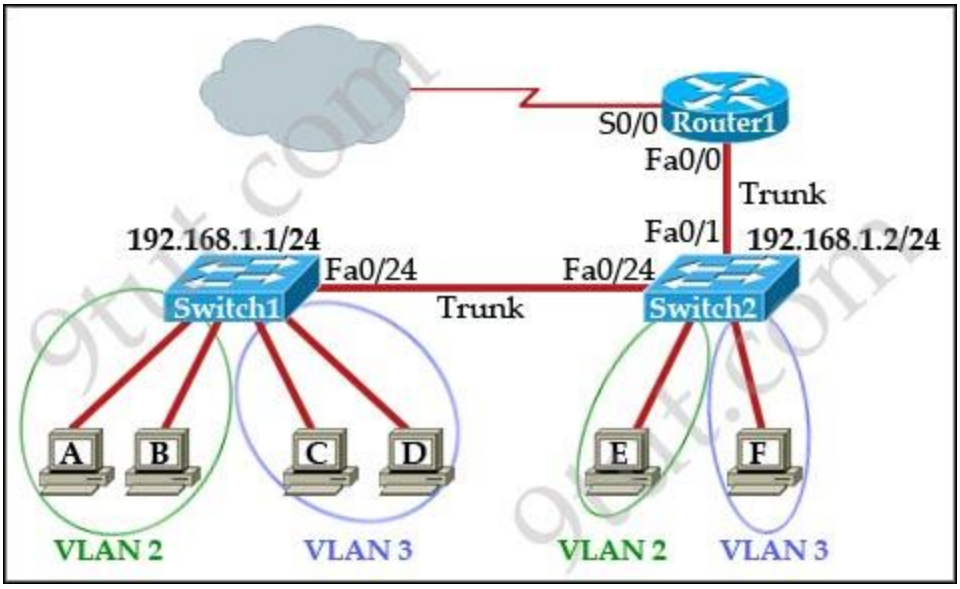
Which statement about a router on a stick is true?

A. Its date plane router traffic for a single VI AN over two or more switches.
B. It uses multiple subinterfaces of a single interface to encapsulate traffic for different VLANs on the same subnet.
C. It requires the native VLAN to be disabled.
D. It uses multiple subinterfaces of a single interface to encapsulate traffic for different VLANs.

Answer: D

Question 7

Refer to the exhibit:



Which two statements are true about interVLAN routing in the topology that is shown in the exhibit? (Choose two)

A. Host E and host F use the same IP gateway address.
B. Routed and Switch2 should be connected via a crossover cable.
C. Router1 will not play a role in communications between host A and host D.
D. The FastEthernet 0/0 interface on Router1 must be configured with subinterfaces.
E. Router1 needs more LAN interfaces to accommodate the VLANs that are shown in the exhibit.
F. The FastEthernet 0/0 interface on Router1 and Switch2 trunk ports must be configured using the same encapsulation type.

Answer: D F

Question 8

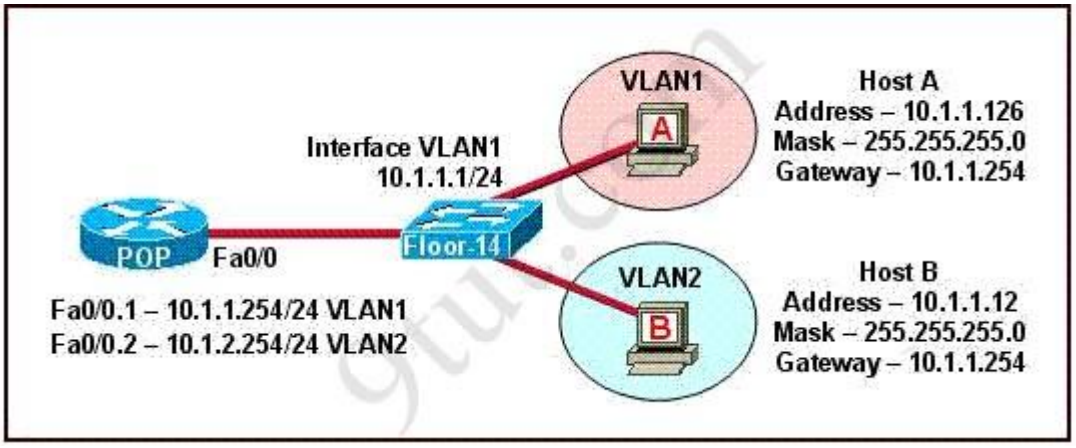
Which two steps must you perform to enable router-on-stick on a switch?

A. connect the router to a trunk port
B. configure the subinterface number exactly the same as the matching VLAN
C. configure full duplex
D. configure an ip route to the vlan destination network
E. assign the access port to the vlan

Answer: A E

Question 9

The network shown in the diagram is experiencing connectivity problems. Which of the following will correct the problems? (Choose two)



A. Configure the gateway on Host A as 10.1.1.1.
B. Configure the gateway on Host B as 10.1.2.254.
C. Configure the IP address of Host A as 10.1.2.2.
D. Configure the IP address of Host B as 10.1.2.2.
E. Configure the masks on both hosts to be 255.255.255.224.
F. Configure the masks on both hosts to be 255.255.255.240.

Answer: B D

Question 10

Under which circumstance is a router on a stick most appropriate?

A. When a router have multiple subnets on a single physical link
B. When a router have single subnet on multiple physical links
C. When a router have multiple interface on single physical links
D. When a router have single interface on multiple physical links

Answer: A

Question 11

Which functionality does an SVI provide?

A. OSI Layer 2 connectivity to switches
B. remote switch administration
C. traffic routing for VLANs
D. OSI Layer 3 connectivity to switches

Answer: C

Question 12

To enable router on a stick on a router subinterface, which two steps must you perform? (Choose two)

A. configure full duplex and speed
B. configure a default to route traffic between subinterfaces
C. configure the subinterface with an IP address
D. configure encapsulation dot1q
E. configure an ip route to the vlan destination network

Answer: C D

Router Questions

http://www.9tut.com/router-questions

Question 1

Which step in the router boot process searches for an IOS image to load into the router?

A. bootstrap
B. POST
C. mini-IOS
D. ROMMON mode

Answer: A

Question 2

If a router has four interfaces and each interface is connected to four switches, how many broadcast domains are present on the router?

A. 1
B. 2
C. 4
D. 8

Answer: C

Question 3

What is the purpose of the POST operation on a router?

A. determine whether additional hardware has been added
B. locate an IOS image for booting
C. enable a TFTP server
D. set the configuration register

Answer: A

Question 4

Which command can you execute to set the user inactivity timer to 10 seconds?

A. SW1(config-line)#exec-timeout 0 10
B. SW1(config-line)#exec-timeout 10
C. SW1(config-line)#absolute-timeout 0 10
D. SW1(config-line)#absolute-timeout 10

Answer: A

Question 5

After you configure the Loopback0 interface, which command can you enter to verify the status of the interface and determine whether fast switching is enabled?

A. Router#show ip interface loopback 0
B. Router#show run
C. Router#show interface loopback 0
D. Router#show ip interface brief

Answer: A

Question 6

A Cisco router is booting and has just completed the POST process. It is now ready to find and load an IOS image. What function does the router perform next?

A. It checks the configuration register
B. It attempts to boot from a TFTP server
C. It loads the first image file in flash memory
D. It inspects the configuration file in NVRAM for boot instructions

Answer: A

Question 7

Which command is used to show the interface status of a router?

A. show interface status
B. show ip interface brief
C. show ip route
D. show interface

Answer: B

Question 8

Which of the following privilege level is the most secured?

A. Level 0
B. Level 1
C. Level 15
D. Level 16

Answer: C

Question 9

What to do when the router password was forgotten?

A. use default password cisco to reset
B. access router physically
C. use ssl/vpn
D. Type confreg 0x2142 at the rommon 1

Answer: D

Question 10

How do you configure a hostname?

A. Router(config)#hostname R1
B. Router#hostname R1
C. Router(config)#host name R1
D. Router>hostname R1

Answer: A

Question 11

Which two Cisco IOS commands, used in troubleshooting, can enable debug output to a remote location? (Choose two)

A. no logging console
B. logging host ip-address
C. terminal monitor
D. show logging | redirect flashioutput.txt
E. snmp-server enable traps syslog

Answer: B C

Question 12

Which statement about recovering a password on a Cisco router is true?

A. The default reset password is cisco
B. It requires a secure SSL/VPN connection
C. A factory reset is required if you forget the password
D. It requires physical access to the router

Answer: D

Question 13

Refer to the exhibit. Why is flash memory erased prior to upgrading the IOS image from the TFTP server?

Router# **copy tftp flash** Address or name of remote host []? 192.168.2.167 Source filename []? c1600-k8sy-mz.123-16a.bin Destination filename [c1600-k8sy-mz.123-16a.bin]? Accessing tftp://192.168.2.167/ c1600-k8sy-mz.l23-16a.bin… Erasing flash before copying? [confirm] Erasing the flash filesystem will remove all files! continue? [confirm] Erasing device Eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee Eeeeeeeeeeeeeeeeeeeeeeeeeeeeee …erased Erase of flash: complete Loading c1600-k8sy-mz.l23-16a.bin from 192.168.2.167 (via Ethernet0): !!! !!!

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK – 6888962/13777920 bytes]

verifying checksum… OK (0x7BF3)
6888962 bytes copied in 209.920 secs (32961 bytes/sec)
Router#
```

A. The router cannot verify that the Cisco IOS image currently in flash is valid
B. Flash memory on Cisco routers can contain only a single IOS image.
C. Erasing current flash content is requested during the copy dialog.
D. In order for the router to use the new image as the default, it must be the only IOS image in flash.

Answer: C

Question 14

In which CLI configuration mode can you configure the hostname of a device?

A. line mode
B. interface mode
C. global mode
D. router mode

Answer: C

Question 15

Which three commands can you use to set a router boot image? (Choose three)

A. Router(config)# boot system flash c4500-p-mz.121-20.bin
B. Router(config)# boot system tftp c7300-js-mz.122-33.SB8a.bin
C. Router(config)#boot system rom c7301-advipservicesk9-mz.124-24.T4.bin
D. Router> boot flash:c180x-adventerprisek9-mz-124-6T.bin
E. Router(config)#boot flash:c180x-adventerprisek9-mz-124-6T.bin
F. Router(config)#boot bootldr bootflash:c4500-jk9s-mz.122-23f.bin

Answer: A B C

Question 16

Which configuration register value can you set on a Cisco device so that it ignores the NVRAM when it boots?

A. 0x2124
B. 0x2120
C. 0x2142
D. 0x2102

Answer: C

Switch Stacking & Chassis Aggregation

http://www.9tut.com/switch-stacking-chassis-aggregation

Question 1

Which option is a benefit of switch stacking?

A. It provides redundancy with no impact on resource usage.
B. It simplifies adding and removing hosts.
C. It supports better performance of high-needs applications.
D. It provides higher port density with better resource usage.

Answer: D

Question 2

Which two options describe benefits of aggregated chassis technology? (Choose two)

A. It reduces management overhead
B. Switches can be located anywhere regardless of there physical location
C. It requires only one IP address per VLAN
D. It requires only three IP addresses per VLAN
E. It supports HSRP VRRP GLBP
F. It support redundant configuration files

Answer: A C

Question 3

How is master redundancy provided on a stacked switches?

A. 1:N
B. N:1
C. 1:1

D. 1+N
E. N+1

Answer: A

Question 4

Which two benefits can you get by stacking Cisco switches? (Choose two)

A. Each switch in the stack handles the MAC table independently from the others
B. You can add or remove switches without taking the stack down
C. Each switch in the stack can use a different IOS image
D. The stack enables any active member to take over as the master switch if the existing master fails
E. You can license the entire stack with a single master license

Answer: B D

Question 5

Which technology provides chassis redundancy in a VSS environment?

A. BFD
B. multichassis EtherChannels
C. VRRP
D. StackWise

Answer: D

Access list Questions

http://www.9tut.com/access-list-questions

Question 1

Which identification number is valid for an extended ACL?

A. 1
B. 64
C. 99
D. 100
E. 299
F. 1099

Answer: D

Question 2

Which statement about named ACLs is true?

A. They support standard and extended ACLs.
B. They are used to filter usernames and passwords for Telnet and SSH.
C. They are used to filter Layer 7 traffic.
D. They support standard ACLs only.
E. They are used to rate limit traffic destined to targeted networks.

Answer: A

Question 3

Which range represents the standard access list?

A. 99
B. 150
C. 299
D. 2000

Answer: A

Question 4

A network engineer wants to allow a temporary entry for a remote user with a specific username and password so that the user can access the entire network over the internet. Which ACL can be used?

A. reflexive
B. extended
C. standard
D. dynamic

Answer: D

Question 5

Which statement about ACLs is true?

A. An ACL have must at least one permit action, else it just blocks all traffic.
B. ACLs go bottom-up through the entries looking for a match
C. An ACL has a an implicit permit at the end of ACL.
D. ACLs will check the packet against all entries looking for a match.

Answer: A

Question 6

Which action can change the order of entries in a named access-list?

A. removing an entry
B. opening the access-list in notepad
C. adding an entry
D. resequencing

Answer: D

Question 7

Which of the following are the valid numbers of standard ACL? (Choose two)

A. 50
B. 1550
C. 150
D. 1250
E. 2050

Answer: A B

Question 8

Host is able to ping a web server but it is not able to do HTTP request. What is the most likely cause the problem?

A. ACL blocking port 23
B. ACL blocking all ports
C. ACL blocking port 80
D. ACL blocking port 443
E. None of the above

Answer: C

Question 9

Which item represents the standard IP ACL?

A. Access-list 110 permit any any
B. Access-list 50 deny 192.168.1.1 0.0.0.255
C. Access list 101 deny tvp any host 192.168.1.1
D. Access-list 2500 deny tcp any host 192.168.1.1 eq 22

Answer: B

Question 10

While troubleshooting a connection problem on a computer, you determined that the computer can ping a specific web server but it cannot connect to TCP port 80 on that server. Which reason for the problem is most likely true?

A. A VLAN number is incorrect
B. An ARP table entry is missing
C. A route is missing
D. An ACL is blocking the TCP port

Answer: D

Question 11

Which command can you enter to block HTTPS traffic from the whole class A private network range to a host?

A. R1(config)#access-list 105 deny tcp 10.1.0.0 0.0.255.255 40.0.0.2 0.0.0.0 eq 443
B. R1(config)#access-list 105 deny tcp 10.1.0.0 0.0.255.255 40.0.0.2 0.0.0.0 eq 53
C. R1(config)#access-list 105 deny tcp 10.0.0.0 0.255.255.255 40.0.0.2 0.0.0.0 eq 53
D. R1(config)#access-list 105 deny tcp 10.0.0.0 0.255.255.255 40.0.0.2 0.0.0.0 eq 443

Answer: D

Question 12

When you are troubleshooting an ACL issue on a router, which command would you use to verify which interfaces are affected by the ACL?

A. show ip access-lists
B. show access-lists
C. show interface

D. show ip interface
E. list ip interface

Answer: D

Question 13

Which type of access list compares source and destination IP address?

A. standard
B. extended
C. IP named
D. reflexive

Answer: B

IP Routing

http://www.9tut.com/ip-routing

Question 1

A router has learned three possible routes that could be used to reach a destination network. One route is from EIGRP and has a composite metric of 20514560. Another route is from OSPF with a metric of 782. The last is from RIPv2 and has a metric of 4. Which route or routes will the router install in the routing table?

A. the RIPv2 route
B. all three routes
C. the OSPF and RIPv2 routes
D. the OSPF route
E. the EIGRP route

Answer: E

Question 2

Which command can you enter to route all traffic that is destined for 192.168.0.0/20 to a specific interface?

A. router(config)#ip route 192.168.0.0 255.255.240.0 GigabitEthernet0/1
B. router(config)#ip route 0.0.0.0 255.255.255.0 GigabitEthernet0/1

C. router(config)#ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
D. router(config)#ip route 192.168.0.0 255.255.255.0 GigabitEthernet0/1

Answer: A

Question 3

Which command can you enter to set the default route for all traffic to an interface?

A. router(config)#ip route 0.0.0.0 0.0.0.0 GigabitEthernet0/1
B. router(config)#ip route 0.0.0.0 255.255.255.255 GigabitEthernet0/1
C. router(config-router)#default-information originate
D. router(config-router)#default-information originate always

Answer: A

Question 4

Which three statements about static routing are true? (Choose three)

A. It uses consistent route determination.
B. It is best used for small-scale deployments.
C. Routing is disrupted when links fail.
D. It requires more resources than other routing methods.
E. It is best used for large-scale deployments.
F. Routers can use update messages to reroute when links fail.

Answer: A B C

Question 5

If host Z needs to send data through router R1 to a storage server, which destination MAC address does host Z use to transmit packets?

A. the host Z MAC address
B. the MAC address of the interface on R1 that connects to the storage server
C. the MAC address of the interface on R1 that connects to host Z
D. the MAC address of the storage server interface

Answer: C

Question 6

Which routing protocol has the smallest default administrative distance?

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

Answer: D

Question 7

Which statement about static routes is true?

A. The source interface can be configured to make routing decisions.
B. A subnet mask is entered for the next-hop address.
C. The subnet mask is 255.255 255.0 by default
D. The exit interface can be specified to indicate where the packets will be routed.

Answer: D

Question 8

Which component of a routing table entry represents the subnet mask?

A. routing protocol code
B. prefix
C. metric
D. network mask

Answer: D

Question 9

When a router makes a routing decision for a packet that is received from one network and destined to another, which portion of the packet does if replace?

A. Layer 2 frame header and trailer
B. Layer 3 IP address
C. Layer 5 session
D. Layer 4 protocol

Answer: A

Question 10

Which statement about routing protocols is true?

A. Link-state routing protocols choose a path by the number of hops to the destination.
B. OSPF is a link-state routing protocol.
C. Distance-vector routing protocols use the Shortest Path First algorithm.
D. IS-IS is a distance-vector routing protocol.

Answer: B

Question 11

Which dynamic routing protocol uses only the hop count to determine the best path to a destination?

A. IGRP
B. RIP
C. EIGRP
D. OSPF

Answer: B

IP Routing 2

http://www.9tut.com/ip-routing-2

Question 1

Which value is indicated by the next hop in a routing table?

A. preference of the route source
B. IP address of the remote router for forwarding the packets
C. how the route was learned
D. exit interface IP address for forwarding the packets

Answer: B

Question 2

Which component of the routing table ranks routing protocols according to their preferences?

A. administrative distance
B. next hop
C. metric
D. routing protocol code

Answer: A

Question 3

Which route source code represents the routing protocol with a default administrative distance of 90 in the routing table?

A. S
B. E
C. D
D. R
E. O

Answer: C

Question 4

When enabled, which feature prevents routing protocols from sending hello messages on an interface?

A. virtual links
B. passive-interface
C. directed neighbors
D. OSPF areas

Answer: B

Question 5

How does a router handle an incoming packet whose destination network is missing from the routing table?

A. It broadcast the packet to each interface on the router
B. It discards the packet
C. It broadcasts the packet to each network on the router
D. It routes the packet to the default route

Answer: B

Question 6

Which path does a router choose when it receives a packet with multiple possible paths to the destination over different routing protocols?

A. the path with both the lowest administrative distance and the highest metric
B. the path with the lowest administrative distance
C. the path with the lowest metric
D. the path with both the lowest administrative distance and lowest metric

Answer: B

Question 7

If a route is not present in the routing table for a particular destination, what would the router do?

A. Default route
B. Flood
C. Drop

Answer: C

Question 8

When a device learns multiple routes to a specific network, it installs the route with?

A. longest bit match (highest subnet mask)
B. lowest AD
C. lowest metric
D. equal load balancing

Answer: B

Question 9

When a router is unable to find a known route in the routing table, how does it handle the packet?

A. It discards the packet
B. It sends the packet over the route with the best metric
C. It sends the packet to the next hop address
D. It sends the packet to the gateway of last resort

Answer: A

Question 10

If router R1 knows a static route to a destination network and then learns about the same destination network through a dynamic routing protocol, how does R1 respond?

A. It refuses to advertise the dynamic route to other neighbors
B. It sends a withdrawal signal to the neighboring router
C. It disables the routing protocol
D. It prefers the static route

Answer: D

IP Routing 3

http://www.9tut.com/ip-routing-3

Question 1

Which two statements about floating static routes are true? (Choose two)

A. They are routes to the exact /32 destination address
B. They are used when a route to the destination network is missing
C. They have a higher administrative distance than the default static route administrative distance
D. They are used as back-up routes when the primary route goes down
E. They are dynamic routes that are learned from a server

Answer: C D

Question 2

Which definition of a host route is true?

A. A route that is manually configured
B. A route used when a destination route is missing
C. A route to the exact /32 destination address
D. Dynamic route learned from the server

Answer: C

Question 3

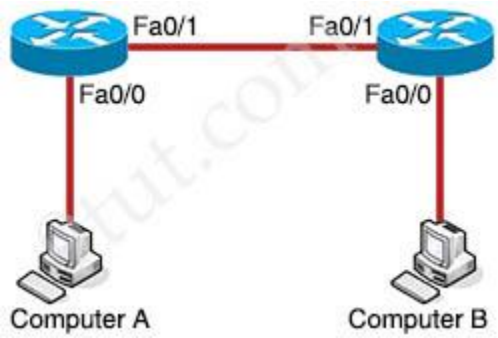
When troubleshooting Ethernet connectivity issues, how can you verify that an IP address is known to a router?

A. Check whether the IP address is in the routing table
B. Check whether an ACL is blocking the IP address
C. Check whether the IP address is in the CAM table
D. Check whether the IP address is in the ARP table

Answer: D

Question 4

If Computer A is sending traffic to computer B, which option is the source IP address when a packet leaves R1 on interface F0/1?



A. IP address of the R2 interface F0/1
B. IP address of computer B
C. IP address of R1 interface F0/1
D. IP address of Computer A

Answer: D

Question 5

When is a routing table entry identified as directly connected?

A. When the local router is in use as the network default gateway
B. When the network resides on a remote router that is physically connected to the local router
C. When an interface on the router is configure with an ip address and enabled
D. When the route is statically assigned to reach a specific network

Answer: C

Question 6

Router R1 has a static router that is configured to a destination network. A directly connected inference is configured with an IP address in the same destination network. Which statement about R1 is true?

A. It refuses to advertise the dynamic route to other neighbors
B. It sends a withdrawal signal to the neighboring router
C. It disables the routing protocol
D. It prefers the static route

Answer: D

Question 7

Router R1 has a static route that is configured to destination network.A directly connected interface is configured with an IP address in the same destination network. Which statement about R1 is true?

A. R1 refuses to advertise the dynamic route to other neighbors
B. R1 prefers the static route
C. R1 prefers the directly connected interface
D. R1 sends a withdrawal notification to the neighboring router

Answer: C

Question 8

In which situation would the use of a static route be appropriate?

A. To configure a route to the first Layer 3 device on the network segment.
B. To configure a route from an ISP router into a corporate network.
C. To configure a route when the administrative distance of the current routing protocol is too low.
D. To reach a network is more than 15 hops away.
E. To provide access to the Internet for enterprise hosts

Answer: E

Question 9

Which two statements about static routing are true? (Choose two)

A. Its default administrative distance is lower than EIGRP
B. It provides only limited security unless the administrator performs additional configuration
C. It allows packets to transit a different path if the topology changes
D. Its initial implementation is more complex than OSPF
E. It allows the administrator to determine the entire path of a packet

Answer: A E

Question 10

Which two task does a router perform when it receives a packet that is being forwarded from one network to another? (Choose two)

A. It encapsulates the layer 2 packet
B. It examines the MAC address table for the forwarding interface
C. It removes the layer 2 frame header and trailer
D. It examines the routing table for the best path to the destination IP address of the packet
E. It removes the layer3 frame header and trailer

Answer: C D

Question 11

Which command would you use on a Cisco router to verify the Layer 3 path to a host?

A. traced address
B. traceroute address
C. telnet address
D. ssh address

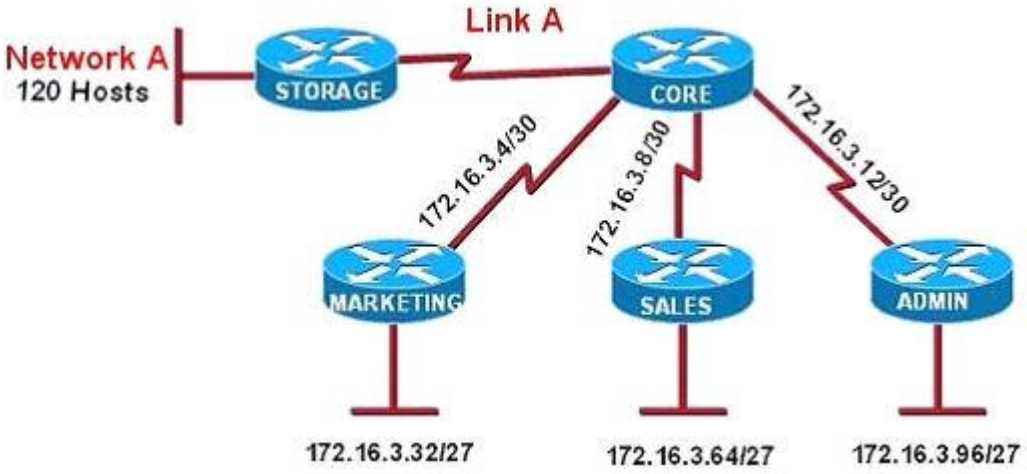
Answer: B

Subnetting Questions

http://www.9tut.com/subnetting-questions

Question 1

Refer to the exhibit. All of the routers in the network are configured with the ip subnet-zero command. Which network addresses should be used for Link A and Network A? (Choose two)



A. Network A – 172.16.3.48/26
B. Network A – 172.16.3.128/25
C. Network A – 172.16.3.192/26
D. Link A – 172.16.3.0/30
E. Link A – 172.16.3.40/30
F. Link A – 172.16.3.112/30

Answer: B D

Question 2

What is the correct routing match to reach 172.16.1.5/32?

A. 172.16.1.0/26
B. 172.16.1.0/25
C. 172.16.1.0/24
D. the default route

Answer: A

Question 3

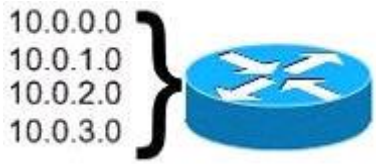
You have been asked to come up with a subnet mask that will allow all three web servers to be on the same network while providing the maximum number of subnets. Which network address and subnet mask meet this requirement?

A. 192.168.252.0 255.255.255.252
B. 192.168.252.8 255.255.255.248
C. 192.168.252.8 255.255.255.252
D. 192.168.252.16 255.255.255.240
E. 192.168.252.16 255.255.255.252

Answer: B

Question 4

Refer to the exhibit. What is the most appropriate summarization for these routes?



A. 10.0.0.0/21
B. 10.0.0.0/22
C. 10.0.0.0/23
D. 10.0.0.0/24

Answer: B

Question 5

How many usable host are there per subnet if you have the address of 192.168.10.0 with a subnet mask of 255.255.255.240?

A. 4
B. 8
C. 16
D. 14

Answer: D

Question 6

Assuming a subnet mask of 255.255.248.0, three of the following addresses are valid host addresses. Which are these addresses? (Choose three)

A. 172.16.9.0
B. 172.16.8.0
C. 172.16.31.0
D. 172.16.20.0

Answer: A C D

Question 7

Which IP configuration does the CIDR notation 192.168.1.1/25 refer?

A. 192.168.1.1 255.255.255.64
B. 192.168.1.1 255.255.255.1
C. 192.168.1.1 255.255.255.32
D. 192.168.1.1 255.255.255.256
E. 192.168.1.1 255.255.255.128

Answer: E

Question 8

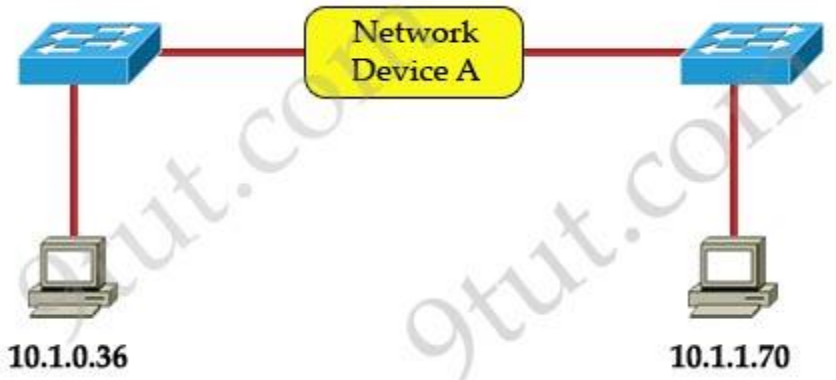
CIDR notation (255.255.255.252) in "/" notation

A. 30
B. 31
C. 32
D. 33

Answer: A

Question 9

Refer to the exhibit:



Which three statements correctly describe Network Device A? (Choose three)

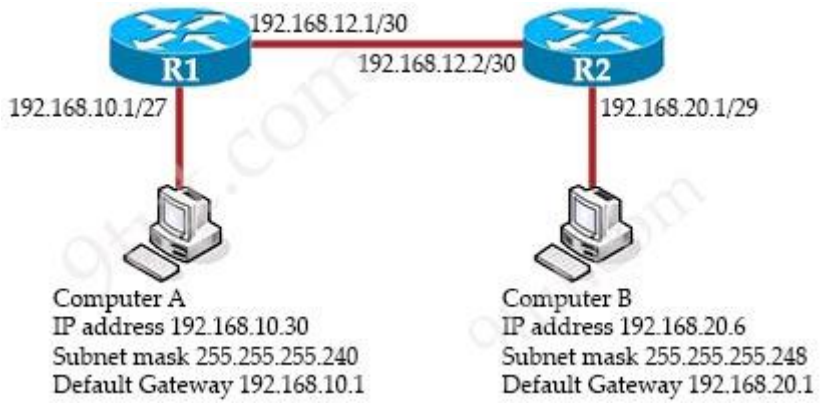
A. With a network wide mask of 255.255.255.128, each interface does not require an IP address.
B. With a network wide mask of 255.255.255.128, each interface does require an IP address on a unique IP subnet.
C. With a network wide mask of 255.255.255.0, must be a Layer 2 device for the PCs to communicate with each other.

D. With a network wide mask of 255.255.255.0, must be a Layer 3 device for the PCs to communicate with each other.
E. With a network wide mask of 255.255.254.0, each interface does not require an IP address.

Answer: B D E

Question 10

Refer to the exhibit, you determine that Computer A cannot ping Computer B. Which reason for the problem is most likely true?



A. The Subnet mask for Computer A is incorrect
B. The default gateway address for Computer A is incorrect
C. The subnet mask for computer B is incorrect.
D. The default gateway address for computer B is incorrect

Answer: A

Question 11

For which two reasons was RFC 1918 address space define (Choose two)

A. to preserve public IPv4 address space
B. to reduce the occurrence of overlapping IP addresses
C. to preserve public IPv6 address space
D. reduce the size of ISP routing tables
E. to support the NAT protocol

Answer: A B

RIP Questions

http://www.9tut.com/rip-questions

Question 1

How to configure RIPv2? (Choose two)

A. Enable RIP
B. Connect RIP to WAN interface
C. Enable auto-summary
D. Enable authentication

Answer: A ?

Question 2

Which two options are requirements for configuring RIPv2 for IPv4 (Choose two)?

A. enabling RIP authentication
B. connecting RIP to a WAN Interface
C. enabling auto route summarization
D. allowing unicast updates for RIP
E. enabling RIP on the router

Answer: D E

Question 3

What does split-horizon do?

A. Prevent routing loop in distance vector protocol
B. Prevent switching loop in distance vector protocol
C. Prevent switching loop in link-state protocol
D. Prevent routing loop in link-state protocol

Answer: A

Question 4

Which effect of the passive-interface command on R1 is true?

```
R1
interface FastEthernet0/0
description site id:14254489
ip address 172.16.0.1 255.255.0.0
```

```
interface FastEthernet0/1
description site id:14254489
ip address 172.17.0.1 255.255.0.0

router rip
passive-interface FastEthernet0/0
network 172.16.0.0
network 172.17.0.0
version 2
```

A. It prevents interface Fa0/0 from sending updates.
B. Interface Fa0/0 operates in RIPv1 mode.
C. It removes the 172.16.0.0 network from all updates on all interfaces on R1.
D. It removes the 172.17.0.0 network from all updates on all interfaces on R1.

Answer: A

Question 5

Which type of routing protocol operates by exchanging the entire routing information?

A. distance vector protocols
B. link state protocols
C. path vector protocols
D. exterior gateway protocols

Answer: A

Question 6

Refer to the exhibit. After you apply the given configuration to R1, you determine that it is failing to advertise the 172.16.10.32/28 network .Which action most likely to correct the problem?

```
R1
interface FastEthernet0/0
 ip address 172.16.10.1 255.255.255.224

interface FastEthernet0/1
 ip address 172.16.10.33 255.255.255.240

router rip
 network 172.16.0.0
 no auto-summary
```

A. Enable passive interface
B. Enable RIPv2
C. Enable manual summarization
D. Enable autosummarization

Answer: B

Question 7

Which two statements about RIPv2 are true? (Choose two)

A. It must be manually enabled after RIP is configured as the routing protocol
B. It uses multicast address 224.0.0.2 to share routing information between peers
C. Its default administrative distances 120
D. It is a link-state routing protocol
E. It is an EGP routing protocol

Answer: A C

Question 8

What is the command for sending updates in broadcast instead of multicast in RIPv2?

A. rip v2-broadcast
B. ip rip v2-broadcast
C. ip rip v2-nonmulticast
D. no ip rip v2-multicast

Answer: B

Question 9

Which command is needed to send RIPV2 updates as broadcast?

A. ip rip receive version 2
B. ip rip receive version 1
C. version 2
D. ip rip v2-broadcast

Answer: D

Question 10

Which two statements correctly describe distance-vector routing protocols? (Choose two)

A. they specify the next hop toward the destination subnet
B. they require quick network convergence to support normal operations
C. they generate a complete topology of the network
D. they update other devices on the network when one device detects a topology change
E. they use a variety of metrics to identify the distance to a destination network.

Answer: A E

OSPF Questions

http://www.9tut.com/ospf-questions

Question 1

Which three statements about link-state routing are true? (Choose three)

A. It uses split horizon.
B. Updates are sent to a broadcast address.
C. RIP is a link-state protocol.
D. Updates are sent to a multicast address by default.
E. Routes are updated when a change in topology occurs.
F. OSPF is a link-state protocol.

Answer: D E F

Question 2

Which three characteristics are representative of a link-state routing protocol? (Choose three)

A. provides common view of entire topology
B. exchanges routing tables with neighbors
C. calculates shortest path
D. utilizes event-triggered updates
E. utilizes frequent periodic updates

Answer: A C D

Question 3

What are two drawbacks of implementing a link-state routing protocol? (Choose two)

A. the sequencing and acknowledgment of link-state packets
B. the high volume of link-state advertisements in a converged network
C. the requirement for a hierarchical IP addressing scheme for optimal functionality
D. the high demand on router resources to run the link-state routing algorithm
E. the large size of the topology table listing all advertised routes in the converged network

Answer: C D

Question 4

Refer to the exhibit. Router edge-1 is unable to establish OSPF neighbor adjacency with router ISP-1. Which two configuration changes can you make on edge-1 to allow the two routers to establish adjacency? (Choose two)

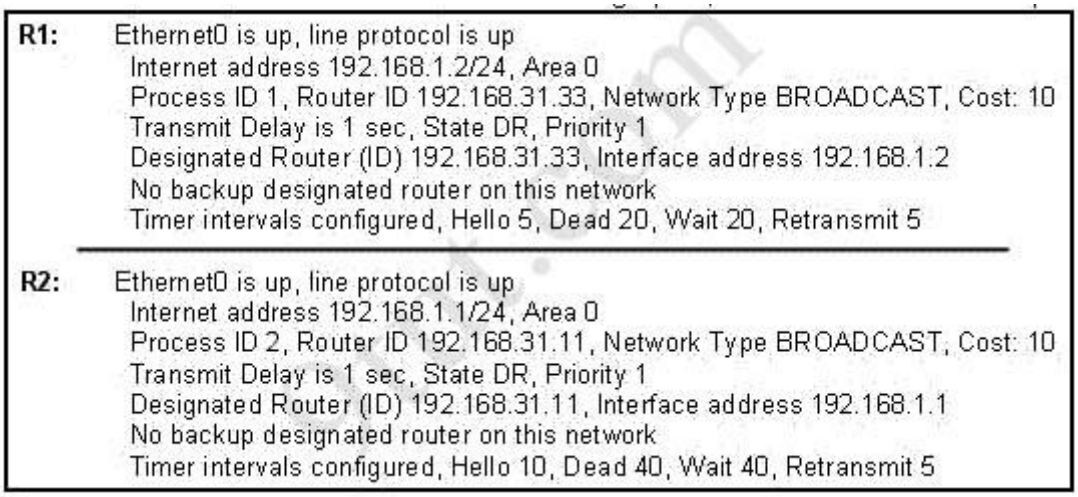


A. Set the subnet mask on edge-1 to 255 255.255.252.
B. Reduce the MTU on edge-1 to 1514.
C. Set the OSPF cost on edge-1 to 1522.
D. Reduce the MTU on edge-1 to 1500.
E. Configure the ip ospf mtu-ignore command on the edge-1 Gi0/0 interface.

Answer: D E

Question 5

A network administrator is troubleshooting the OSPF configuration of routers R1 and R2. The routers cannot establish an adjacency relationship on their common Ethernet link. The graphic shows the output of the show ip ospf interface e0 command for routers R1 and R2. Based on the information in the graphic, what is the cause of this problem?



A. The OSPF area is not configured properly.
B. The priority on R1 should be set higher.
C. The cost on R1 should be set higher.
D. The hello and dead timers are not configured properly.
E. A backup designated router needs to be added to the network.
F. The OSPF process ID numbers must match.

Answer: D

Question 6

What routing protocol use first-hand information?

A. link-state
B. distance-vector
C. path-vector
D. other

Answer: A

Question 7

Refer to the exhibit. If R1 sends traffic to 192.168.10.45 the traffic is sent through which interface?

```
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, l - LISP

Gateway of last resort is 192.168.14.4 to network 0.0.0.0

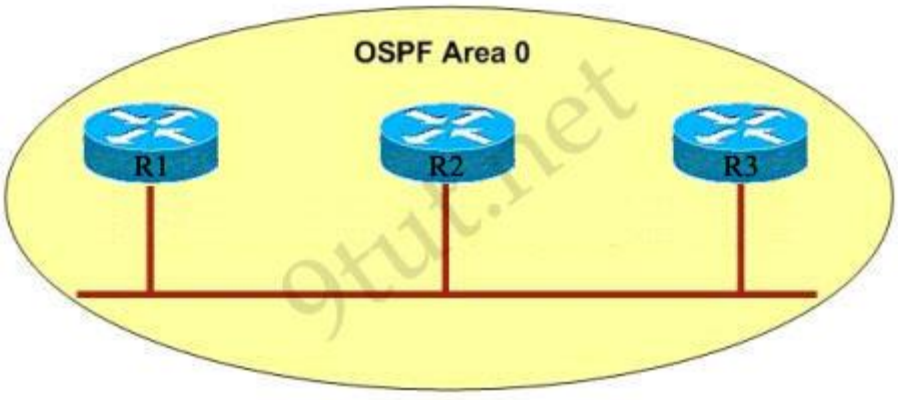

C    192.168.12.0/24 is directly connected, FastEthernet0/0
C    192.168.13.0/24 is directly connected, FastEthernet0/1
C    192.168.14.0/24 is directly connected, FastEthernet1/0
     192.168.10.0/24 is variably subnetted, 3 subnets, 3 masks
O       192.168.10.0/24 [110/2] via 192.168.14.4, 00:02:00, FastEthernet1/0
O       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:51, FastEthernet0/1
O       192.168.0.0/16 [110/2] via 192.168.15.5, 00:02:00, FastEthernet1/1
D       192.168.10.1/32 [50/52778] via 192.168.12.2, 00:02:00, FastEthernet0/0
O*E2 0.0.0.0/0 [110/1] via 192.168.14.4, 01:35:54, FastEthernet1/0
```

A. FastEthernet0/1
B. FastEthernet0/0
C. FastEthernet1/0
D. FastEthernet1/1

Answer: A

Question 8

R1 is unable to establish an OSPF neighbor relationship with R3. What are possible reasons for this problem? (Choose two)



A. All of the routers need to be configured for backbone Area 1.
B. R1 and R2 are the DR and BDR, so OSPF will not establish neighbor adjacency with R3.
C. A static route has been configured from R1 to R3 and prevents the neighbor adjacency from being established.
D. The hello and dead interval timers are not set to the same values on R1 and R3.

E. EIGRP is also configured on these routers with a lower administrative distance.
F. R1 and R3 are configured in different areas.

Answer: D F

Question 9

Refer to the exhibit. You have discovered that computers on the 192.168.10.0/24 network can ping their default gateway, but they cannot connect to any resources on a remote network. Which reason for the problem is most likely true?

```
R1
interface Loopback0
 ip address 172.16.1.1 255.255.255.255
interface FastEthernet0/0
 ip address 192.168.12.1 255.255.255.0
interface FastEthernet0/1
 ip address 192.168.10.1 255.255.255.0
!
router ospf 1
 router-id 172.16.1.1
 network 172.16.1.1 0.0.0.0 area 0
 network 192.168.10.0 0.0.0.255 area 0
```

A. The 192.168.12.0/24 network is missing from OSPF.
B. The OSPF process ID is incorrect.
C. The OSPF area number is incorrect.
D. An ARP table entry is missing for 192.168.10.0.
E. A VLAN number is incorrect for 192.168.10.0.

Answer: A

Question 10

Which parameter or parameters are used to calculate OSPF cost in Cisco routers?

A. Bandwidth, Delay and MTU
B. Bandwidth
C. Bandwidth and MTU
D. Bandwidth, MTU, Reliability, Delay and Load

Answer: B

OSPF Questions 2

http://www.9tut.com/ospf-questions-2

Question 1

What routing protocol use first-hand information from peers?

A. link state
B. distance-vector
C. path-vector
D. other

Answer: A

Question 2

Which prefix does OSPFv3 use when multiple IPv6 address are configured on a single interface?

A. all prefix on the interface
B. the prefix that the administrator configure for OSPFv3 use
C. the lowest prefix on the interface
D. the highest prefix on the interface

Answer: A

Question 3

After you apply the given configuration to R1, you notice that it failed to enable OSPF. Which action can you take to correct the problem?

```
R1
ipv6 cef

interface FastEthernet0/0
no ip address
ipv6 enable
ipv6 address 2001:DB8:1::1/64
ipv6 ospf 1 area 0

ipv6 router ospf 1
router-id 172.16.1.1
```

A. Configure a loopback interface on R1
B. Enable IPv6 unicast routing on R1
C. Configure an IPv4 address on interface Fa0/0
D. Configure an autonomous system number on OSPF

Answer: B

Question 4

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

```
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, l - LISP

Gateway of last resort is 192.168.14.4 to network 0.0.0.0


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
     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, 00:02:00, FastEthernet1/0
O       192.168.10.32/27 [110/11] via 192.168.13.3, 00:00:51, FastEthernet0/1
O       192.168.0.0/16 [110/2] via 192.168.15.5, 00:02:00, FastEthernet1/1
D       192.168.10.1/32 [50/52778] via 192.168.12.2, 00:02:00, FastEthernet0/0
O*E2 0.0.0.0/0 [110/1] via 192.168.14.4, 01:35:54, FastEthernet1/0
```

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

Answer: A

Question 5

If two OSPF neighbors have formed complete adjacency and are exchanging link-state advertisements, which state have they reached?

A. Exstart
B. 2-Way
C. FULL
D. Exchange

Answer: C

Question 6

Which two steps must you perform on each device that is configured for IPv4 routing before you implement OSPFv3? (Choose two)

A. Configure an autonomous system number
B. Configure a loopback interface
C. Configure a router ID
D. Enable IPv6 on an interface
E. Enable IPv6 unicast routing

Answer: D E

Question 7

Which command must you enter to enable OSPFv2 in an IPv4 network?

A. ip ospf hello-interval seconds
B. router ospfv2 process-id
C. router ospf value
D. router ospf process-id

Answer: D

Question 8

Why do large OSPF networks use a hierarchical design? (Choose three)

A. to confine network instability to single areas of the network
B. to reduce the complexity of router configuration
C. to speed up convergence
D. to lower costs by replacing routers with distribution layer switches
E. to decrease latency by increasing bandwidth
F. to reduce routing overhead

Answer: A C F

Question 9

Refer to the exhibit.

R1	R2
ipv6 unicast-routing interface FastEthernet0/0 no ip address ipv6 enable ipv6 address 2001:DB8:12::1/64 ipv6 ospf 1 area 0 ipv6 router ospf 1 router-id 172.16.1.1	ipv6 unicast-routing interface FastEthernet0/0 no ip address ipv6 enable ipv6 address 2001:DB8:12::2/64 ipv6 ospf 1 area 1 ipv6 router ospf 1 router-id 172.16.2.2

After you apply the give configurations to R1 and R2 you notice that OSPFv3 fails to start. Which reason for the problem is most likely true?

A. The area numbers on R1 and R2 are mismatched
B. The IPv6 network addresses on R1 and R2 are mismatched
C. The autonomous system numbers on R1 and R2 are mismatched
D. The router ids on R1 and R2 are mismatched

Answer: A

Question 10

When running OSPF, what would cause router A not to form an adjacency with router B?



A. The loopback addresses are on different subnets.
B. The values of the dead timers on the routers are different.
C. Route summarization is enabled on both routers.
D. The process identifier on router A is different than the process identifier on router

Answer: B

Question 11

When designing OSPF networks; what is the purpose of using a hierarchical design? (Choose three)

A. To reduce the complexity of router configuration
B. To speed up convergence
C. To confine network instability to single areas of the network
D. To reduce routing overhead
E. To lower costs by replacing routers
F. To decrease latency

Answer: B C D

Question 12

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

EIGRP Questions

http://www.9tut.com/eigrp-questions

Question 1

A network administrator is troubleshooting an EIGRP problem on a router and needs to confirm the IP addresses of the devices with which the router has established adjacency. The retransmit interval and the queue counts for the adjacent routers also need to be checked. What command will display the required information?

A. Router# show ip eigrp neighbors
B. Router# show ip eigrp interfaces
C. Router# show ip eigrp adjacency
D. Router# show ip eigrp topology

Answer: A

Question 2

Which option describes a difference between EIGRP for IPv4 and IPv6?

A. Only EIGRP for IPv6 advertises all connected networks.
B. Only EIGRP for IPv6 requires a router ID to be configured under the routing process
C. AS numbers are configured in EIGRP but not in EIGRPv3.
D. Only EIGRP for IPv6 is enabled in the global configuration mode.

Answer: B

Question 3

Which EIGRP for IPv6 command can you enter to view the link-local addresses of the neighbors of a device?

A. show ipv6 eigrp 20 interfaces
B. show ipv6 route eigrp
C. show ipv6 eigrp neighbors
D. show ip eigrp traffic

Answer: C

Question 4

Which function allows EIGRP peers to receive notice of implementing topology changes?

A. successors
B. advertised changes
C. goodbye messages
D. expiration of the hold timer

Answer: C

Question 5

What are the address that will show at the “show ip route” if we configure the above statements? (Choose three)

```
router eigrp 100
network 172.15.4.0
network 10.4.3.0
network 192.168.4.0
auto-summary
```

A. 10.0.0.0
B. 10.4.3.0
C. 172.15.4.0
D. 172.15.0.0
E. 192.168.4.0
F. 192.168.0.0

Answer: A D E

Question 6

What does split horizon prevent?

A. routing loops, link state
B. routing loops, distance vector
C. switching loops, STP
D. switching loops, VTP

Answer: B

Question 7

What is called when variance with two times of metric?

A. unequal cost load balancing
B. path selection
C. equal cost load balancing
D. other

Answer: A

Question 8

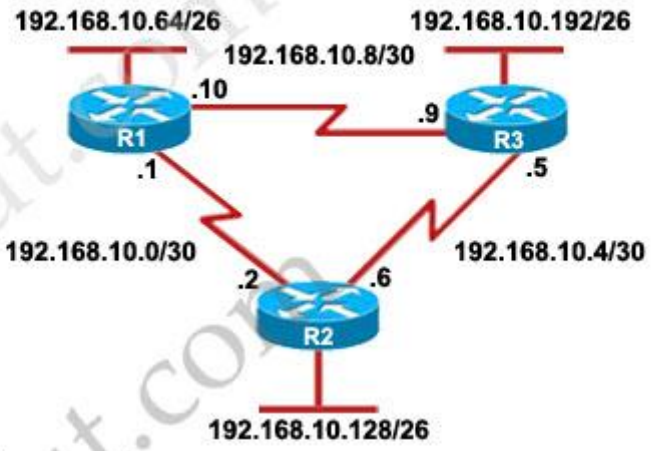
Which feature is config by setting a variance that is at least 2 times the metric?

A. unequal cost load balancing
B. path selection
C. equal cost load balancing
D. path count

Answer: A

Question 9

Refer to the exhibit. Based on the exhibited routing table, how will packets from a host within the 192.168.10.192/26 LAN be forwarded to 192.168.10.1?




```
R3# show ip route
Gateway of last resort is not set
     192.168.10.0/24 is variably subnetted, 6 subnets, 2 masks
D       192.168.10.64/26  [90/2195456] via 192.168.10.9, 00:03:31, Serial0/0
D       192.168.10.0/30  [90/2681856] via 192.168.10.9, 00:03:31, Serial0/0
                         [90/2681856] via 192.168.10.5, 00:03:31, Serial0/1
C       192.168.10.4/30 is directly connected, Serial0/1
C       192.168.10.8/30 is directly connected, Serial0/0
C       192.168.10.192/30 is directly connected, FastEthernet0/0
C       192.168.10.128/26 [90/2195456] via 192.168.10.5, 00:03:31, Serial0/1
```

A. The router will forward packets from R3 to R2 to R1
B. The router will forward packets from R3 to R1
C. The router will forward packets from R3 to R1 to R2
D. The router will forward packets from R3 to R2 to R1 AND from R3 to R1

Answer: D

Question 10

Which two statements about EIGRP on IPv6 device are true? (Choose two)

A. It is configured on the interface
B. It is globally configured
C. It is configured using a network statement
D. It is vendor agnostic
E. It supports a shutdown feature

Answer: A E

Question 11

If R1 is configured as shown, which three addresses will be received by other routers that are running EIGRP on the network? (Choose three)

```
R1(config)#router eigrp 103
R1(config-router)#network 10.4.3.0
R1(config-router)#network 172.16.4.0
R1(config-router)#network 192.168.2.0
R1(config-router)#auto-summary
```

A. 172.16.4.0
B. 10.0.0.0
C. 172.16.0.0
D. 192.168.2.0
E. 192.168.0.0
F. 10.4.3.0

Answer: B C D

Question 12

Which routing protocols are compatible with stubs? (Choose two)

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

Answer: A B

Question 13

Which value must you configure on a device before EIGRP for IPv6 can start running?

A. public IP address
B. loopback interface
C. router ID
D. process ID

Answer: C

Question 14

Which command allows you to set the administrative distance for EIGRP for IPv6?

A. ipv6 summary-address eigrp
B. metric weights
C. ipv6 bandwidth-percent eigrp
D. ipv6 next-hop-self eigrp

Answer: A

BGP Questions

http://www.9tut.com/bgp-questions

Question 1

Which command can you enter to verify that a BGP connection to a remote device is established?

A. show ip bgp summary
B. show ip community-list
C. show ip bgp paths
D. show ip route

Answer: A

Question 2

Which two components are used to identify a neighbor in a BGP configuration? (Choose two)

A. autonomous system number
B. version number
C. router ID
D. subnet mask
E. IP address

Answer: A E

Question 3

interface fa0/0
ip address 172.16.1.33 255.255.255.224
router bgp XXX
neighbor 10.1.5.2 remote as 65001

You need to advertise the network of int fa0/0. Which of the following would you type in the "network" command?

A. 172.16.1.32 mask 255.255.255.224
B. 172.16.1.32 255.255.255.224
C. 172.16.1.32 mask 0.0.0.31
D. 172.16.1.33 mask 255.255.255.224

Answer: A

Question 4

Which two statements about eBGP neighbor relationships are true? (Choose two)

A. The two devices must reside in different autonomous systems
B. Neighbors must be specifically declared in the configuration of each device
C. They can be created dynamically after the network statement is con-figured.
D. The two devices must reside in the same autonomous system
E. The two devices must have matching timer settings

Answer: A B

Question 5

What does it take for BGP to establish connection? (Choose two)

A. Enable CDP
B. AS number on local router
C. AS number on remote router
D. IGP
E. EGP

Answer: B C

IP SLA Questions

http://www.9tut.com/ip-sla-questions

Question 1

Which function of the IP SLAs ICMP jitter operation can you use to determine whether a VoIP issue is caused by excessive end-to-end time?

A. round-trip time latency
B. packet loss
C. jitter
D. successive packet loss

Answer: A

Question 2

Which statement about the IP SLAs ICMP Echo operation is true?

A. The frequency of the operation specified in milliseconds.
B. It is used to identify the best source interface from which to send traffic.
C. It is configured in enable mode.
D. It is used to determine the frequency of ICMP packets.

Answer: D

Question 3

What IP SLA ICMP Echo measures?

A. Packet loss
B. Congestion
C. Hop-by-hop “something”
D. End-to-end response time
E. ?

Answer: D

Question 4

Which function does IP SLA ICMP ECHO operation perform to assist with troubleshooting?

A. one way jitter measurement
B. congestion detection
C. hop-by-hop response time
D. packet-loss detection

Answer: C

Question 5

Which feature or utility enables a switch or router to monitor network performance and availability using a responder?

A. NetFlow
B. ping
C. traceroute
D. IP SLA

Answer: D

Question 6

What are two characteristics of an ICMP echo-based IP SLA? (Choose two)

A. It measures traffic to determine the reliability of a connection from a Cisco router to a designated end device
B. It can use RSPAN to report network statistics to a designated remote port
C. It generates continuous traffic to monitor network performance
D. It aggregates traffic statistics for reporting on a configurable basis
E. It requires a remote device to log and maintain collected data

Answer: A C

Question 7

Which two IP SLA operations can you use to measure the end-to-end response time for all IP traffic between a Cisco router and an end device?

A. ICMP path echo
B. UDP echo
C. ICMP path jitter
D. UDP jitter
E. TCP connect
F. ICMP echo

Answer: A F

Question 8

Which two commands can you use to verify an IP SLA?(Choose two)

A. show ip sla application
B. show ip sla reaction-configuration
C. show ip sla statistics
D. show ip sla configuration

Answer: C D

NAT/PAT Questions

http://www.9tut.com/natpat-questions

Question 1

Which technology allows a large number of private IP addresses to be represented by a smaller number of public IP addresses?

A. NAT
B. NTP
C. RFC 1631
D. RFC 1918

Answer: A

Question 2

What is the effect of the overload keyword in a static NAT translation configuration?

A. It enables port address translation.
B. It enables the use of a secondary pool of IP addresses when the first pool is depleted.
C. It enables the inside interface to receive traffic.
D. It enables the outside interface to forward traffic.

Answer: A

Question 3

Which two types of NAT addresses are used in a Cisco NAT device? (Choose two)

A. inside local
B. inside global
C. inside private

D. outside private
E. external global
F. external local

Answer: A B

Question 4

What is the danger of the “permit any” entry in a NAT access list?

A. It can lead to overloaded resources on the router.
B. It can cause too many addresses to be assigned to the same interface.
C. It can disable the overload command.
D. It prevents the correct translation of IP addresses on the inside network.

Answer: A

Question 5

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 6

Which command can you enter to display the hits counter for NAT traffic?

A. show ip nat statistics
B. debug ip nat
C. show ip debug nat
D. clear ip nat statistics

Answer: A

Question 7

Which NAT function can map multiple inside addresses to a single outside address?

A. PAT
B. SFTP
C. RARP
D. ARP
E. TFTP

Answer: A

Question 8

What is the first step in the NAT configuration process?

A. Define inside and outside interfaces.
B. Define public and private IP addresses.
C. Define IP address pools.
D. Define global and local interfaces.

Answer: A

Question 9

Under which circumstance should a network administrator implement one-way NAT?

A. when the network must route UDP traffic
B. when traffic that originates outside the network must be routed to internal hosts
C. when traffic that originates inside the network must be routed to internal hosts
D. when the network has few public IP addresses and many private IP addresses require outside access

Answer: B

Question 10

Which statement about the inside interface configuration in a NAT deployment is true?

A. It is defined globally
B. It identifies the location of source addresses for outgoing packets to be translated using access or route maps.
C. It must be configured if static NAT is used
D. It identifies the public IP address that traffic will use to reach the internet.

Answer: B

Question 11

Which NAT type is used to translate a single inside address to a single outside address?

A. dynamic NAT
B. NAT overload
C. PAT
D. static NAT

Answer: D

Question 12

What are two benefits of using NAT? (choose two)

A. NAT protects network security because private networks are not advertised.
B. NAT accelerates the routing process because no modifications are made on the packets.
C. Dynamic NAT facilitates connections from the outside of the network.
D. NAT facilitates end-to-end communication when IPsec is enable.
E. NAT eliminates the need to re-address all host that require external access.
F. NAT conserves addresses through host MAC-level multiplexing.

Answer: A E

Question 13

Which command can you enter to create a NAT pool of 6 addresses?

A. Router(config)#ip nat pool test 175.17.12.69 175.17.12.74 prefix-length 24
B. Router(config)#ip nat pool test 175.17.12.69 175.17.13.74 prefix-length 16
C. Router(config)#ip nat pool test 175.17.12.66 175.17.12.72 prefix-length 8
D. Router(config)#ip nat pool test 175.17.12.69 175.17.12.76 prefix-length 8

Answer: A

Question 14

How does NAT overloading provide one-to-many address translation?

A. It uses a pool of addresses
B. It converts IPV4 addresses to unused IPv6 Addresses

C. It assigns a unique TCP/UDP port to each session
D. It uses virtual MAC Address and Virtual IP Addresses

Answer: C

Question 15

What is the danger of the permit any entry in a NAT access list?

A. It can lead to overloaded resources on the router.
B. It can cause too many addresses to be assigned to the same interface.
C. It can disable the overload command.
D. It prevents the correct translation of IP addresses on the inside network.

Answer: A

Question 16

Which configuration can be used with PAT to allow multiple inside address to be translated to a single outside address?

A. Dynamic Routing
B. DNS
C. Preempt
D. Overload

Answer: D

Question 17

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

HSRP Questions

http://www.9tut.com/hsrp-questions

Question 1

Which protocol advertises a virtual IP address to facilitate transparent failover of a Cisco routing device?

A. FHRP
B. DHCP
C. RSMLT
D. ESRP

Answer: A

Question 2

Which protocol is the Cisco proprietary implementation of FHRP?

A. HSRP
B. VRRP
C. GLBP
D. CARP

Answer: A (in fact GLBP is also correct)

Question 3

Which standards-based First Hop Redundancy Protocol is a Cisco supported alternative to Hot Standby Router Protocol?

A. VRRP
B. GLBP
C. TFTP
D. DHCP

Answer: A

Question 4

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

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

Answer: A B

Question 5

Which three options are the HSRP states for a router? (Choose three)

A. initialize
B. learn
C. secondary
D. listen
E. speak
F. primary

Answer: B D E

Question 6

Which standards-based First Hop Redundancy Protocol is a Cisco supported alternative to Hot Standby Router Protocol?

A. VRRP
B. GLBP
C. TFTP
D. DHCP

Answer: A

Question 7

Which value to use in HSRP protocol election process?

A. interface
B. virtual IP address
C. priority
D. router ID

Answer: C

Question 8

Which of the following is needed to be enable back the role of active in HSRP?

A. preempt
B. priority
C. other options
D. other options

Answer: A

Question 9

Which HSRP feature was new in HSRPv2?

A. Group numbers that are greater than 255
B. Virtual MAC addresses
C. tracking
D. preemption

Answer: A

Question 10

Which configuration command can you apply to a HSRP router so that its local interface becomes active if all other routers in the group fail?

A. no additional config is required
B. standby 1 track ethernet
C. standby 1 preempt
D. standby 1 priority 250

Answer: A

Question 11

Which three statements about HSRP operation are true? (Choose three)

A. The virtual IP address and virtual MAC address are active on the HSRP Master router.
B. The HSRP default timers are a 3 second hello interval and a 10 second dead interval.
C. HSRP supports only clear-text authentication.
D. The HSRP virtual IP address must be on a different subnet than the routers' interfaces on the

same LAN.
E. The HSRP virtual IP address must be the same as one of the router's interface addresses on the LAN.
F. HSRP supports up to 255 groups per interface, enabling an administrative form of load balancing.

Answer: A B F

Question 12

What is a valid HSRP virtual MAC address?

A. 0000.5E00.01A3
B. 0007.B400.AE01
C. 0000.0C07.AC15
D. 0007.5E00.B301

Answer: C

IPv6 Questions

http://www.9tut.com/ipv6-questions

Question 1

In which two formats can the IPv6 address fd15:0db8:0000:0000:0700:0003:400F:572B be written? (Choose two)

A. fd15:0db8:0000:0000:700:3:400F:527B
B. fd15:0db8::7:3:4F:527B
C. fd15::db8::700:3:400F:527B
D. fd15:db8::700:3:400F: 527B
E. fd15:db8:0::700:3:4F:527B

Answer: A D

Question 2

Which statements about IPv6 prefixes are true?

A. FEC0::/10 is used for IPv6 broadcast.
B. FC00::/7 is used in private networks.
C. FE80::/8 is used for link-local unicast.
D. FE80::/10 is used for link-local unicast

E. 2001::1/127 is used for loopback addresses.
F. FF00::/8 is used for IPv6 multicast.

Answer: B D F

Question 3

Which statements about IPv6 and routing protocols are true? (Choose two)

A. EIGRPv3 was developed to support IPv6 routing.
B. OSPFv3 was developed to support IPv6 routing.
C. Loopback addresses are used to form routing adjacencies.
D. EIGRP, OSPF, and BGP are the only routing protocols that support IPv6.
E. Link-local addresses are used to form routing adjacencies.

Answer: B E

Question 4

Which command can you enter to verify that a 128-bit address is live and responding?

A. traceroute
B. telnet
C. ping
D. ping ipv6

Answer: D

Question 5

Which technology supports the stateless assignment of IPv6 addresses?

A. DNS
B. DHCPv6
C. DHCP
D. autoconfiguration

Answer: B

Question 6

Which IPv6 header field is equivalent to the TTL?

A. Hop Limit
B. Flow Label
C. TTD
D. Hop Count
E. Scan Timer

Answer: A

Question 7

Which two statements about the “tunnel mode ipv6ip” command are true? (Choose two)

A. It enables the transmission of IPv6 packets within the configured tunnel.
B. It specifies IPv4 as the encapsulation protocol.
C. It specifies IPv6 as the encapsulation protocol.
D. It specifies IPv6 as the transport protocol.
E. It specifies that the tunnel is a Teredo tunnel.

Answer: A B

Question 8

In which three ways is an IPv6 header simpler than an IPv4 header? (Choose three)

A. Unlike IPv4 headers, IPv6 headers have a fixed length.
B. IPv6 uses an extension header instead of the IPv4 Fragmentation field.
C. IPv6 headers eliminate the IPv4 Checksum field.
D. IPv6 headers use the Fragment Offset field in place of the IPv4 Fragmentation field.
E. IPv6 headers use a smaller Option field size than IPv4 headers.
F. IPv6 headers use a 4-bit TTL field, and IPv4 headers use an 8-bit TTL field.

Answer: A B C

Question 9

Which two features can dynamically assign IPv6 addresses? (Choose two)

A. IPv6 stateless autoconfiguration
B. DHCP
C. NHRP
D. IPv6 stateful autoconfiguration
E. ISATAP tunneling

Answer: A D

IPv6 Questions 2

http://www.9tut.com/ipv6-questions-2

Question 1

Which two statements about IPv6 router advertisement messages are true? (Choose two)

A. They use ICMPv6 type 134.
B. The advertised prefix length must be 64 bits.
C. The advertised prefix length must be 48 bits.
D. They are sourced from the configured IPv6 interface address.
E. Their destination is always the link-local address of the neighboring node.

Answer: A B

Question 2

Which three statements about IPv6 prefixes are true? (Choose three)

A. FF00:/8 is used for IPv6 multicast.
B. FE80::/10 is used for link-local unicast.
C. FC00::/7 is used in private networks.
D. 2001::1/127 is used for loopback addresses.
E. FE80::/8 is used for link-local unicast.
F. FEC0::/10 is used for IPv6 broadcast.

Answer: A B C

Question 3

You enter the “show ipv6 route” command on an OSPF device and the device displays a route. Which conclusion can you draw about the environment?

A. OSPF is distributing IPv6 routes to BGP.
B. The router is designated as an ABR.
C. The router is designated as totally stubby.
D. OSPFv3 is in use.

Answer: D

Question 4

What is one requirement for interfaces to run IPv6?

A. An IPv6 address must be configured on the interface.
B. An IPv4 address must be configured.
C. Stateless autoconfiguration must be enabled after enabling IPv6 on the interface.
D. IPv6 must be enabled with the ipv6 enable command in global configuration mode.

Answer: A

Question 5

Which entity assigns IPv6 addresses to end users?

A. ICANN
B. APNIC
C. RIR
D. ISPs

Answer: D

Question 6

Which command enables IPv6 forwarding on a cisco router?

A. IPv6 host
B. IPv6 unicast-routing
C. IPv6 local
D. IPv6 neighbor

Answer: B

Question 7

What is the correct command for floating static ipv6 route?

A. ipv6 route 2001:DB8::/32 serial 2/0 201
B. ipv6 route 2001:DB8::/32 serial 2/0 1
C. ?
D. ?

Answer: A

Question 8

What are types of IPv6 static routes? (Choose three)

A. Recursive routes
B. Directly connected routes
C. Fully specified routes
D. Advertised routes
E. Virtual links
F. Redistributed routes

Answer: A B C

Question 9

What are three parts of an IPv6 global unicast address? (Choose three)

A. an interface ID that is used to identify the local host on the network.
B. an interface ID that is used to identify the local network for a particular host.
C. a subnet ID that is used to identify networks inside of the local enterprise site
D. a global routing prefix that is used to identify the network portion of the address that has been provided by an ISP
E. a global routing prefix that is used to identify the portion of the network address provided by a local administrator

Answer: A C D

Question 10

Which two statements about unique local IPv6 addresses are true? (Choose two)

A. They are identical to IPv4 private addresses.
B. They are defined by RFC 1884
C. They use the prefix FEC0::/10
D. They use the prefix FC00::/7
E. They can be routed on the IPv6 global internet.

Answer: A D

IPv6 Questions 3

http://www.9tut.com/ipv6-questions-3

Question 1

What is the binary pattern of unique IPv6 unique local address?

A. 00000000
B. 11111100
C. 11111111
D. 11111101

Answer: B

Question 2

Which IPv6 function serves the same purpose as ARP entry verification on an IPv4 network?

A. interface ip address verification
B. MAC address table verification
C. neighbor discovery verification
D. Routing table entry verification

Answer: C

Question 3

Which type of ipv6 unicast IP address is reachable across the Internet?

A. Unique Local
B. Compatible
C. Link local
D. Global

Answer: D

Question 4

Which header field is new on IPv6?

A. Version
B. Hop Limit
C. Flow Label
D. Traffic Class

Answer: C

Question 5

Which type of IP address of IPv6 that also exist in IPv4 but barely used?

A. unicast
B. multicast
C. anycast
D. broadcast

Answer: C

Question 6

What is known as one-to-nearest addressing in IPv6?

A. global unicast
B. anycast
C. multicast
D. unspecified address

Answer: B

Question 7

Which command can you enter to configure an IPv6 floating static route?

A. Router(config)# ipv6 route static resolve default
B. Router(config)# ipv6 route::/0 serial0/1
C. Router(config)# ipv6 route FE80:0202::/32 serial 0/1 201
D. Router(config)# ipv6 route FE80:0202::/32 serial 0/1 1

Answer: C

Question 8

How many bit represents the network ID in IPv6?

A. 32
B. 48

C. 64
D. 128

Answer: C

Question 9

Which statement about IPv6 link-local addresses is true?

A. They must be configured on all IPv6 interface
B. They must be globally unique
C. They must be manually configured
D. They are advertised globally on the network

Answer: A

Question 10

Which tunneling mechanism embeds an IPv4 address within an IPv6 address?

A. Teredo
B. 6to4
C. 4to6
D. GRE
E. ISATAP

Answer: B

IPv6 Questions 4

http://www.9tut.com/ipv6-questions-4

Question 1

Which two statements about IPv6 address fd14:920b:f83d:4079::/64 are true? (Choose two)

A. The subnet ID is 14920bf83d
B. The subnet ID is 4079
C. The global ID is 14920bf83d
D. The address is a link-local address
E. The global ID is 4079
F. The address is a unique local address

Answer: B F

Question 2

Which IPv6 routing protocol uses multicast group FF02::9 to send updates?

A. static
B. RIPng
C. OSPFv3
D. IS-IS for IPv6

Answer: B

Question 3

Which two statements about IPv6 address 2002:ab10:beef::/48 are true? (Choose two)

A. The embedded IPv4 address can be globally routed
B. It is used for an ISATAP tunnel
C. The embedded IPv4 address is an RFC 1918 address
D. The MAC address 20:02:b0:10:be:ef is embedded into the IPv6 address
E. It is used for a 6to4 tunnel

Answer: A E

Question 4

What is the most efficient subnet mask for a point to point IPv6 connection?

A. /127
B. /128
C. /64
D. /48
E. /32

Answer: A

Question 5

Which protocol does IPv6 use to discover other IPv6 nodes on the same segment?

A. CLNS
B. TCPv6
C. NHRP
D. NDP
E. ARP

Answer: D

Question 6

Which address block identifies all link-local addresses?

A. FC00::/7
B. FC00::/8
C. FE80::/10
D. FF00::/8

Answer: C

Question 7

What are three features of the IPv6 protocol? (Choose three)

A. complicated header
B. plug-and-play
C. no broadcasts
D. checksums
E. optional IPsec
F. autoconfiguration

Answer: B C F

Question 8

Which two statements describe characteristics of IPv6 unicast addressing? (Choose two)

A. Global addresses start with 2000::/3
B. Link-local addresses start with FE00:/12
C. Link-local addresses start with FF00::/10
D. There is only one loopback address and it is ::1
E. If a global address is assigned to an interface, then that is the only allowable address for the interface.

Answer: A D

Question 9

What are the two statements about EUI-64 addressing? (Choose two)

A. A locally administrated address has the universal/local bit set to 0
B. A 64-bit interface identifier is derived from the interface MAC address
C. A 96-bit interface identifier is derived from the interface MAC address
D. The address includes the hex digits FFFE after the first 24 bits of the interface MAC address
E. The address includes the hex digits FFFE after the last 24 bits of the interface MAC address

Answer: A D

Question 10

Which protocol does IPv6 use to discover other IPv6 nodes on the same segment?

A. CLNS
B. TCPv6
C. NHRP
D. NDP
E. ARP

Answer: D

Question 11

Which option is a valid IPv6 address?

A. 2001:0000:130F::099a::12a
B. 2002:7654:A1AD:61:81AF:CCC1
C. FEC0:ABCD:WXYZ:0067::2A4
D. 2004:1:25A4:886F::1

Answer: D

Question 12

Which IPv6 address is the all-router multicast group?

A. FF02::1
B. FF02::2

C. FF02::3
D. FF02::4

Answer: B

Security Questions

http://www.9tut.com/security-questions

Question 1

Which condition indicates that service password-encryption is enabled?

A. The local username password is in clear text in the configuration.
B. The enable secret is in clear text in the configuration.
C. The local username password is encrypted in the configuration.
D. The enable secret is encrypted in the configuration.

Answer: C

Question 2

Which command can you enter to configure a local username with an encrypted password and EXEC mode user privileges?

A. Router(config)#username jdone privilege 1 password 7 08314D5D1A48
B. Router(config)#username jdone privilege 1 password 7 PASSWORD1
C. Router(config)#username jdone privilege 15 password 0 08314D5D1A48
D. Router(config)#username jdone privilege 15 password 0 PASSWORD1

Answer: A

Question 3

Which command sets and automatically encrypts the privileged enable mode password?

A. enable password c1sco
B. secret enable c1sco
C. password enable c1sco
D. enable secret c1sco

Answer: D

Question 4

The enable secret command is used to secure access to which CLI mode?

A. user EXEC mode
B. global configuration mode
C. privileged EXEC mode
D. auxiliary setup mode

Answer: C

Question 5

Refer to the exhibit. What is the result of setting the no login command?

```
Router#config t
Router(config)#line vty 0 4
Router(config-line)#password c1sc0
Router(config-line)#no login
```

A. Telnet access is denied.
B. Telnet access requires a new password at the first login.
C. Telnet access requires a new password.
D. no password is required for telnet access.

Answer: D

Question 6

Which protocol authenticates connected devices before allowing them to access the LAN?

A. 802.1d
B. 802.11
C. 802.1w
D. 802.1x

Answer: D

Question 7

What should be part of a comprehensive network security plan?

A. Allow users to develop their own approach to network security
B. Physically secure network equipment from potential access by unauthorized individuals
C. Encourage users to use personal information in their passwords to minimize the likelihood of passwords being forgotten
D. Delay deployment of software patches and updates until their effect on end-user equipment is well known and widely reported
E. Minimize network overhead by deactivating automatic antivirus client updates

Answer: B

Question 8

Which password types are encrypted?

A. SSH
B. Telnet
C. enable secret
D. enable password

Answer: C

Security Questions 2

http://www.9tut.com/security-questions-2

Question 1

How do you maintain security in multiple websites?

A. VPN
B. DMVPN
C. other
D. other

Answer: A

Question 2

Which of the following encrypts the traffic on a leased line?

A. telnet
B. ssh
C. vtp

D. vpn
E. dmvpn

Answer: B

Question 3

Which command is necessary to permit SSH or Telnet access to a Cisco switch that is otherwise configured for these vty line protocols?

A. transport type all
B. transport output all
C. transport preferred all
D. transport input all

Answer: D

Question 4

How to verify SSH connections were secured?

A. ssh -v 1 -l admin IP
B. ssh -v 2 -l admin IP
C. ssh -l admin IP
D. ssh -v 2 admin IP

Answer: B

Question 5

In order to comply with new auditing standards, a security administrator must be able to correlate system security alert logs directly with the employee who triggers the alert. Which of the following should the security administrator implement in order to meet this requirement?

A. Access control lists on file servers
B. Elimination of shared accounts
C. Group-based privileges for accounts
D. Periodic user account access reviews

Answer: D

Question 6

What are two characteristics of SSH? (Choose two)

A. use port 22
B. unsecured
C. encrypted
D. most common remote-access method
E. operate at transport

Answer: A C

Question 7

Refer to the exhibit. Which user-mode password has just been set?

```
R1#config
R1(config)#line vty 0 4
R1(config-line)#password C1scO
R1(config-line)#login
```

A. Telnet
B. Auxiliary
C. SSH
D. Console

Answer: A

Question 8

Which two passwords must be supplied in order to connect by Telnet to a properly secured Cisco switch and make changes to the device configuration? (Choose two)

A. tty password
B. enable secret password
C. vty password
D. aux password
E. console password
F. username password

Answer: B C

Question 9

Which two statements about firewalls are true?

A. They can be used with an intrusion prevention system.
B. They can limit unauthorized user access to protect data.
C. Each wireless access point requires its own firewall
D. They must be placed only at locations where the private network connects to the internet.
E. They can prevent attacks from the internet only.

Answer: A B

Question 10

Which three options are types of Layer 2 network attack? (Choose three)

A. Spoofing attacks
B. VLAN Hopping
C. Botnet attacks
D. DDOS attacks
E. ARP Attacks
F. Brute force attacks

Answer: A B E

Question 11

Which IEEE mechanism is responsible for the authentication of devices when they attempt to connect to a local network?

A. 802.1x
B. 802.11
C. 802.2x
D. 802.3x

Answer: A

Question 12

Which IPsec security protocol should be used when confidentiality is required?

A. AH
B. MD5
C. PSK
D. ESP

Answer: D

Question 13

Which two statements about stateful firewalls in an enterprise network are true? (Choose two)

A. They are more susceptible to DoS attacks than stateless firewalls
B. They can filter HTTP and HTTPS traffic in the inbound direction only
C. They are most effective when placed in front of the router connected to the internet
D. They can track the number of active TCP connections
E. They can use information about previous packets to make decisions about future packets

Answer: D E

Troubleshooting Questions

http://www.9tut.com/troubleshooting-questions

Question 1

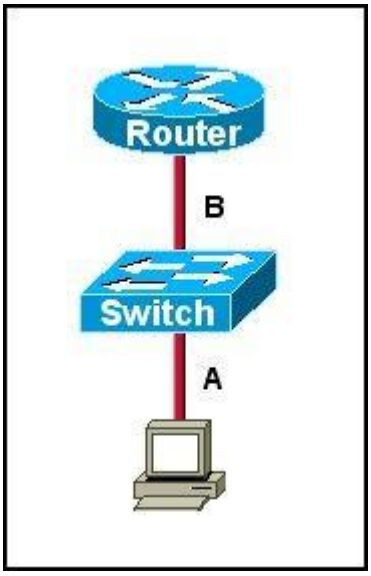
Which interface counter can you use to diagnose a duplex mismatch problem?

A. runts
B. CRC errors
C. no carrier
D. late collisions
E. deferred
F. giants

Answer: D

Question 2

Refer to the exhibit. The two connected ports on the switch are not turning orange or green. What would be the most effective steps to troubleshoot this physical layer problem? (Choose three)



A. Ensure that the Ethernet encapsulations match on the interconnected router and switch ports.
B. Ensure that cables A and B are straight-through cables.
C. Ensure cable A is plugged into a trunk port.
D. Ensure the switch has power.
E. Reboot all of the devices.
F. Reseat all cables.

Answer: B D F

Question 3

What are reasons that duplex mismatches can be difficult to diagnose? (Choose two)

A. The interface displays a connected (up/up) state even when the duplex settings are mismatched.
B. 1-Gbps interfaces are full-duplex by default.
C. Full-duplex interfaces use CSMA/CD logic, so mismatches may be disguised by collisions.
D. The symptoms of a duplex mismatch may be intermittent.
E. Autonegotiation is disabled.

Answer: A D

Question 4

What are two reasons that duplex mismatches can be difficult to diagnose? (Choose two)

A. The interface displays a connected (up/up) state even when the duplex settings are mismatched.
B. The symptoms of a duplex mismatch may be intermittent.
C. Autonegotiation is disabled.

D. Full-duplex interfaces use CSMA/CD logic, so mismatches may be disguised by collisions.
E. 1-Gbps interfaces are full-duplex by default.

Answer: A B

Question 5

What is the best way to verify that a host has a path to other hosts in different networks?

A. Ping the loopback address.
B. Ping the default gateway.
C. Ping the local interface address.
D. Ping the remote network.

Answer: D

Question 6

While you were troubleshooting a connection issue, a ping from one VLAN to another VLAN on the same switch failed. Which command verifies that IP routing is enabled on interfaces and the local VLANs are up?

A. show ip interface brief
B. show ip nat statistics
C. show ip statistics
D. show ip route

Answer: A

Question 7

Describe the best way to troubleshoot and isolate a network problem?

A. Create an action plan
B. Implement an action plan
C. Gather facts
D. Change on variable at a time

Answer: C

Question 8

Refer to exhibit. Which command can you enter to verify link speed and duplex setting on the interface?

```
R1(config)#interface gigabitEthernet0/1
R1(config-if)#ip address 192.168.1.1. 255.255.255.0
R1(config-if)#speed 100
R1(config-if)#duplex full
```

A. router#show ip protocols
B. router#show startup-config
C. router#show line
D. router#show interface gig 0/1

Answer: D

Question 9

When you troubleshoot an IPv4 connectivity issue on a router, which three router configuration checks you must perform?

A. Verify that the router interface IP address is correct.
B. Verify that the DNS is configured correctly.
C. Verify that the router and the host use the same subnet mask.
D. Verify that the router firmware is up-to-date.
E. Verify that a default route is configured.
F. Verify that the route appears in the Routing table

Answer: A C F

Question 10

Which command can be used from a PC to verify the connectivity between hosts that connect through a switch in the same LAN?

A. tracert address
B. ping address
C. arp address
D. traceroute address

Answer: B

Question 11

When troubleshooting client DNS issues, which two tasks must you perform? (Choose two)

A. Ping a public website IP address.
B. Ping the DNS Server.
C. Determine whether a DHCP address has been assigned.
D. Determine whether the hardware address is correct.
E. Determine whether the name servers have been configured

Answer: B E

Question 12

Which two statements about extended traceroute command is true?

A. It can send packets from specified interface or IP address
B. It can use a specified TTL value
C. It can validate the reply data
D. It can use a specified TOS
E. It can repeated automatically to a specified interval

Answer: A B

Question 13

Which symptom most commonly indicates that two connecting interface are configured with a duplex mismatch?

A. an interface with up/down state
B. an interface with down/down state
C. late collisions on the interface
D. the spanning tree process shutting down

Answer: C

Question 14

When is the most appropriate time to escalate an issue that you troubleshooting?

A. When you lack the proper to resolve the issue
B. When a more urgent issue that requires your intervention is detected
C. When you have gathered all information about an issue
D. When you have been unable to resolve the issue after 30 min

Answer: A

DHCP Questions

http://www.9tut.com/dhcp-questions

Question 1

Which command can you enter to display duplicate IP addresses that the DHCP server assigns?

A. show ip dhcp conflict 10.0.2.12
B. show ip dhcp database 10.0.2.12
C. show ip dhcp server statistics
D. show ip dhcp binding 10.0.2.12

Answer: A

Question 2

What is the default lease time for a DHCP binding?

A. 24 hours
B. 12 hours
C. 48 hours
D. 36 hours

Answer: A

Question 3

Which statement is correct regarding the operation of DHCP?

A. A DHCP client uses a ping to detect address conflicts.
B. A DHCP server uses a gratuitous ARP to detect DHCP clients.
C. A DHCP client uses a gratuitous ARP to detect a DHCP server.
D. If an address conflict is detected, the address is removed from the pool and an administrator must resolve the conflict.
E. If an address conflict is detected, the address is removed from the pool for an amount of time configurable by the administrator.
F. If an address conflict is detected, the address is removed from the pool and will not be reused until the server is rebooted.

Answer: D

Question 4

Which command is used to build DHCP pool?

A. ip dhcp pool DHCP
B. ip dhcp conflict
C. ip dhcp-server pool DHCP
D. ip dhcp-client pool DHCP

Answer: A

Question 5

What is the two benefits of DHCP snooping? (Choose two)

A. static reservation
B. DHCP reservation
C. prevent DHCP rouge server
D. prevent untrusted host and servers to connect

Answer: C D

Question 6

What command can you enter in config mode to create DHCP pool?

A. ip dhcp pool DHCP_pool
B. ip dhcp exclude -add
C. ip dhcp conflict logging
D. service dhcp

Answer: A

Question 7

Where information about untrusted hosts are stored?

A. CAM table
B. Trunk table
C. MAC table
D. binding database

Answer: D

Question 8

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

A. show ip dhcp database
B. show ip dhcp pool
C. show ip dhcp binding
D. show ip dhcp server statistic

Answer: C

Question 9

Which command can you enter to troubleshoot the failure of address assignment?

A. show ip dhcp database
B. show ip dhcp pool
C. show ip dhcp import
D. show ip dhcp server statistics

Answer: B

Question 10

Requirement to configure DHCP binding (Choose two)

A. DHCP pool
B. IP address
C. Hardware address
D. other option

Answer: B C

DHCP Questions 2

http://www.9tut.com/dhcp-questions-2

Question 1

How to see DHCP conflict?

A. show ip dhcp pool
B. show dhcp database
C. show ip dhcp conflict

Answer: C

Question 2

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 3

How does a DHCP server dynamically assign IP addresses to hosts?

A. Addresses are permanently assigned so that the host uses the same address at all times.
B. Addresses are assigned for a fixed period of time.
C. Addresses are leased to hosts. A host will usually keep the same address by periodically contacting the DHCP server to renew the lease.
D. Addresses are allocated after a negotiation between the server and the host to determine the length of the agreement.

Answer: C

Question 4

Which statement about DHCP snooping is true?

A. It blocks traffic from DHCP servers on untrusted interfaces.
B. It can be configured on switches and routers.
C. It allows packets from untrusted ports if their source MAC address is found in the binding table.
D. It uses DHCPDiscover packets to identify DHCP servers.

Answer: A

Question 5

Refer to the exhibit.

```
ip dhcp pool test
  network 192.168.10.0/27
  domain name cisco.com
  dns-server 172.16.1.1 172.16.2.1
  netbios-name-server 172.16.1.10 172.16.2.10
```

After you apply the given configuration to a router, the DHCP clients behind the device cannot communicate with hosts outside of their subnet. Which action is most likely to correct the problem?

A. Configure the DNS server on the same subnet as the clients
B. Activate the dhcp pool
C. Correct the subnet mask
D. Configure the default gateway

Answer: D

Question 6

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

Question 7

While troubleshooting a DHCP client that is behaving erratically, you discover that the client has been assigned the same IP address as a printer that is a static IP address. Which option is the best way to resolve the problem?

A. Configure a static route to the client
B. Assign the client the same IP address as the router
C. Move the client to another IP subnet
D. Move the printer to another IP subnet
E. Reserve the printer IP address

Answer: E

AAA Questions

https://www.9tut.com/aaa-questions

Question 1

Which two descriptions of TACACS+ are true? (Choose two)

A. It encrypts only the password.
B. It uses UDP as its transport protocol.
C. It separates authentication authorization, and accounting functions.
D. It can authorize specific router commands.
E. It combines authentication and authorization

Answer: C D

Question 2

Which command is used to enable CHAP authentication with PAP as the fallback method on a serial interface?

A. (config-if)# authentication ppp chap fallback ppp
B. (config-if)# authentication ppp chap pap
C. (config-if)# ppp authentication chap pap
D. (config-if)# ppp authentication chap fallback ppp

Answer: C

Question 3

Which three features are represented by the letter A in AAA? (Choose three)

A. authorization
B. accountability
C. authentication
D. authority
E. accessibility
F. accounting

Answer: A C F

Syslog Questions

http://www.9tut.com/syslog-questions

Question 1

Which logging command can enable administrators to correlate syslog messages with millisecond precision?

A. logging buffered 4
B. logging host 10.2.0.21
C. logging console
D. service timestamps log datetime msec
E. logging monitor

Answer: D

Question 2

If you configure syslog messages without specifying the logging trap level, which log messages will the router send?

A. informational messages only
B. warning and error conditions only
C. normal but significant conditions only
D. error conditions only
E. all levels except debugging

Answer: E

Question 3

If you are configuring syslog messages specifying ‘logging trap warning’, which log messages will the router send?

A. 0-4
B. 0-5
C. 0-2
D. 0-6
E. 0-1

Answer: A

Question 4

If you configure syslog messages without specifying the logging trap level, which log messages will the router send?

A. 0-4
B. 0-5
C. 0-2
D. 0-6
E. 0-1

Answer: D

Question 5

Two statements about syslog logging?

A. Syslog logging is disabled by default
B. Messages are stored in the internal memory of device
C. Messages can be erased when device reboots
D. Messages are stored external to the device
E. ?
F. ?

Answer: B C

Question 6

Refer to the exhibit. What is the cause of the Syslog output messages?

```
*Mar 01, 00:40:10.3111: %SYS-5-CONFIG_I: Configured from console by console
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to administratively down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
$DUAL-5-NBRCHANGE: IP-EIGRP 1: Neighbor 10.10.11.2 (FastEthernet0/1) is down: interface down
```

A. The EIGRP neighbor on Fa0/1 went down due to a failed link.
B. The EIGRP neighbor connected to Fa0/1 is participating in a different EIGRP process, causing the adjacency to go down.
C. A shut command was executed on interface Fa0/1, causing the EIGRP adjacency to go down.
D. Interface Fa0/1 has become error disabled, causing the EIGRP adjacency to go down.

Answer: C

Question 7

What command instructs the device to timestamp Syslog debug messages in milliseconds?

A. service timestamps log datetime localtime
B. service timestamps debug datetime msec
C. service timestamps debug datetime localtime
D. service timestamps log datetime msec

Answer: B

Question 8

A network administrator enters the following command on a router: logging trap 3. What are three message types that will be sent to the Syslog server? (Choose three)

A. informational
B. emergency
C. warning
D. critical
E. debug
F. error

Answer: B D F

SNMP Questions

http://www.9tut.com/snmp-questions

Question 1

Which version of SNMP first allowed user-based access?

A. SNMPv3 with RBAC
B. SNMPv3
C. SNMPv1
D. SNMPv2

Answer: B

Question 2

What is the first step you perform to configure an SNMPv3 user?

A. Configure server traps.
B. Configure the server group.

C. Configure the server host.
D. Configure the remote engine ID.

Answer: B

Question 3

Which statement about SNMPv2 is true?

A. Its privacy algorithms use MD5 encryption by default.
B. It requires passwords to be encrypyed.
C. Its authentication and privacy algorithms are enabled without default values.
D. It requires passwords at least eight characters in length.

Answer: C

Question 4

Which command can you enter on a switch to determine the current SNMP security model?

A. snmp-server contact
B. show snmp pending
C. show snmp group
D. show snmp engineID

Answer: C

Question 5

Which command do use we use to see SNMP version?

A. show snmp pending
B. show snmp engineID
C. snmp-server manager

Answer: A

Question 6

Which three statements about the features of SNMPv2 and SNMPv3 are true? (Choose three)

A. SNMPv3 enhanced SNMPv2 security features
B. SNMPv3 added the Inform protocol message to SNMP
C. SNMPv2 added the Inform protocol message to SNMP
D. SNMPv3 added the GetBulk protocol messages to SNMP
E. SNMPv2 added the GetBulk protocol message to SNMP
F. SNMPv2 added the GetNext protocol message to SNMP

Answer: A C E

Question 7

Which feature can you use to restrict SNMP queries to a specific OID tree?

A. server group
B. a community
C. a view record
D. an access group

Answer: C

NTP Questions

http://www.9tut.com/ntp-questions

Question 1

Which NTP command configures the local device as an NTP reference clock source?

A. ntp peer
B. ntp broadcast
C. ntp master
D. ntp server

Answer: C

Question 2

What command is used to configure a switch as authoritative NTP server?

A. ntp master 3
B. ntp peer IP
C. ntp server IP
D. ntp source IP

Answer: A

Question 3

Which value indicates the distance from the NTP authoritative time source?

A. priority
B. location
C. layer
D. stratum

Answer: D

Question 4

Which NTP type designates a router without an external reference clock as an authoritative time source?

A. server
B. peer
C. master
D. client

Answer: C

Question 5

Which command can you enter to configure the switch as an authoritative NTP server with a site id: 13999902?

A. Switch(config)#ntp master 3
B. Switch(config)#ntp peer 193.168.2.2
C. Switch(config)#ntp server 193.168.2.2
D. Switch(config)#ntp source 193.168.2.2

Answer: A

Question 6

Which two command can you enter to display the current time sources statistics on devices? (Choose two)

A. show ntp associations
B. show clock details
C. show clock
D. show how time
E. show ntp status

Answer: A E

Question 7

Which three commands are required to enable NTP authentication on a Cisco router? (Choose three)

A. ntp peer
B. ntp max-associations
C. ntp authenticate
D. ntp trusted-key
E. ntp authentication-key
F. ntp refclock

Answer: C D E

Question 8

Which command can you enter to verify that a router is synced with a configured time source?

A. show ntp authenticate
B. ntp associations
C. ntp server time
D. ntp authenticate
E. show ntp associations

Answer: E

SDN Solution

http://www.9tut.com/sdn-solution

Question 1

Which component of the Cisco SDN solution serves as the centralized management system?

A. Cisco OpenDaylight
B. Cisco ACI
C. Cisco APIC
D. Cisco IWAN

Answer: C

Question 2

Which two statements about northbound and southbound APIs are true? (Choose two)

A. Only southbound APIs allow program control of the network.
B. Only northbound APIs allow program control of the network.
C. Only southbound API interfaces use a Service Abstraction Layer.
D. Only northbound API interfaces use a Service Abstraction Layer.
E. Both northbound and southbound API interfaces use a Service Abstraction Layer.
F. Both northbound and southbound APIs allow program control of the network.

Answer: B C

Question 3

Which two options are primary responsibilities of the APIC-EM controller? (Choose two.)

A. It automates network actions between different device types.
B. It provides robust asset management.
C. It tracks license usage and Cisco IOS versions.
D. It automates network actions between legacy equipment.
E. It makes network functions programmable.

Answer: A E

Question 4

Which utility can you use to identify redundant or shadow rules?

A. The ACL trace tool in Cisco APIC-EM.
B. The ACL analysis tool in Cisco APIC-EM.
C. The Cisco APIC-EM automation scheduler.
D. The Cisco IWAN application.

Answer: B

Question 5

Which utility can you use to identify the cause of a traffic-flow blockage between the two devices in a network?

A. ACL path analysis tool in APIC-EM
B. iWAN application
C. ACL analysis tool in APIC-EM
D. APIC-EM automation scheduler

Answer: A

Question 6

In APIC-EM what is the icon if there is an ACL on the device blocking the traffic on the path?

A. 
B. 
C. 
D. 

Answer: C

Wireless Questions

http://www.9tut.com/wireless-questions

Question 1

Which device allows users to connect to the network using a single or double radio?

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

Answer: A

Question 2

Which two statements about wireless LAN controllers are true? (Choose two)

A. They can simplify the management and deployment of wireless LANs.
B. They rely on external firewalls for WLAN security.
C. They are best suited to smaller wireless networks.
D. They must be configured through a GUI over HTTP or HTTPS.
E. They can manage mobility policies at a systemwide level.

Answer: A E

Question 3

Which WAN topology is most appropriate for a centrally located server farm with several satellite branches?

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

Answer: B

Question 4

What are three broadband wireless technologies? (Choose three)

A. WiMax
B. satellite Internet
C. municipal Wi-Fi
D. site-to-site VPN
E. DSLAM
F. CMTS

Answer: A B C

Question 5

What are three characteristics of satellite Internet connections? (Choose three)

A. Their upload speed is about 10 percent of their download speed.
B. They are frequently used by rural users without access to other high-speed connections.
C. They are usually at least 10 times faster than analog modem connections.
D. They are usually faster than cable and DSL connections.

E. They require a WiMax tower within 30 miles of the user location.
F. They use radio waves to communicate with cellular phone towers.

Answer: A B C

Question 6

Which Cisco platform can verify ACLs?

A. Cisco Prime Infrastructure
B. Cisco Wireless LAN Controller
C. Cisco APIC-EM
D. Cisco IOS-XE

Answer: C

Question 7

What happens when an 802.11a node broadcasts within the range of an 802.11g access point?

A. The access point transmits, but the node is unable to receive.
B. A connection occurs.
C. Both the node and the access point are unable to transmit.
D. The node transmits, but the access point is unable to receive.

Answer: D

Question 8

Which two statements about access points are true? (Choose two)

A. They can provide access within enterprises and to the public.
B. In most cases, they are physically connected to other network devices to provide network connectivity.
C. They can protect a network from internal and external threats.
D. Most access points provide Wi-Fi and Bluetooth connectivity.
E. They must be hardwired to a modem.

Answer: B D

Question 9

After you deploy a new WLAN controller on your network,which two additional tasks should you consider? (Choose two)

A. deploy load balancers
B. configure additional vlans
C. configure multiple VRRP groups
D. deploy POE switches
E. configure additional security policies

Answer: A E

Miscellaneous Questions

http://www.9tut.com/miscellaneous-questions

Question 1

What is the authoritative source for an address lookup?

A. a recursive DNS search
B. the operating system cache
C. the ISP local cache
D. the browser cache

Answer: A

Question 2

Which feature builds a FIB and an adjacency table to expedite packet forwarding?

A. cut through
B. fast switching
C. process switching
D. Cisco Express Forwarding

Answer: D

Question 3

Which two statements about late collisions are true? (Choose two)

A. They may indicate a duplex mismatch.
B. By definition, they occur after the 512th bit of the frame has been transmitted.

C. They indicate received frames that did not pass the FCS match.
D. They are frames that exceed 1518 bytes.
E. They occur when CRC errors and interference occur on the cable.

Answer: A B

Question 4

What feature uses a random time to re-sent a frame?

A. CSMA/CA
B. ?
C. ?
D. CSMA/CD

Answer: D

Question 5

Which command can you enter to verify echo request and echo reply?

A. ping
B. traceroute
C. tracert
D. telnet

Answer: A

Question 6

Two features of the extended ping command? (Choose two)

A. It can send a specific number of packet
B. It can send packet from specified interface of IP address
C. It can resolve the destination host name
D. It can ping multiple host at the same time

Answer: A B

Question 7

What utility is used for shadowed rules?

A. Create an action plan
B. Implement an action plan
C. Gather facts
D. ?

Answer: B

Question 8

In which two situations should you use out-of-band management?

A. when a network device fails to forward packets
B. when you require ROMMON access
C. when management applications need concurrent access to the device
D. when you require administrator access from multiple locations
E. when the control plane fails to respond

Answer: A B

Question 9

Which command shows your active Telnet connections?

A. show sessions
B. show cdp neighbors
C. show users
D. show queue

Answer: A

Question 10

Which symptom can cause duplex mismatch problem?

A. no earner
B. collisions on interface
C. giants
D. CRC errors

Answer: B

Question 11

What feature you should use to analyse and monitor your traffic for troubleshooting?

A. RSPAN
B. SPAN
C. Netflow
D. SNMP

Answer: C

Drag and Drop

http://www.9tut.com/drag-and-drop

Question 1

The left describes the types of cables, while the right describes the purposes of the cables. Drag the items on the left to the proper locations. (Not all items can be used.)

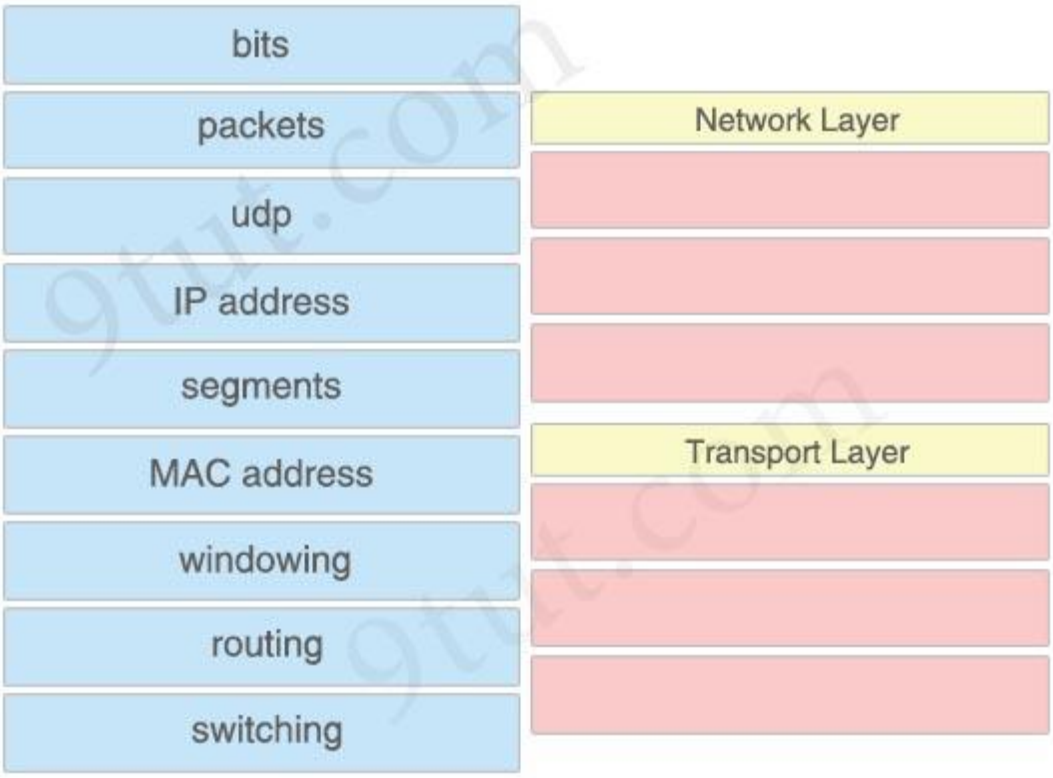


Answer:

+ switch access port to router: straight-through
+ switch to switch: crossover
+ PC COM to switch Console port: rollover

Question 2

Match the items on the left with appropriate OSI layer on the right. (Not all options are used.)



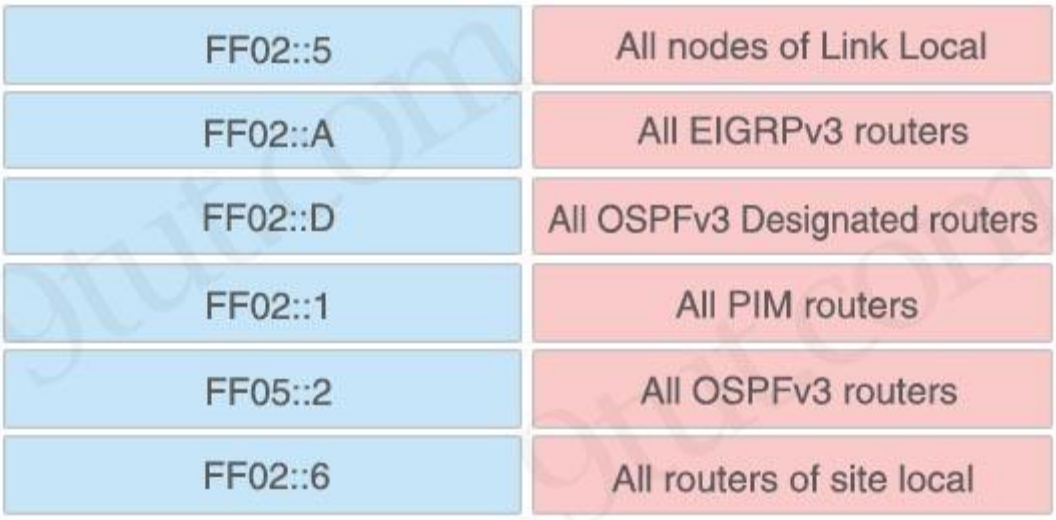
Answer:

Network Layer:
+ packets
+ IP address
+ routing

Transport Layer:
+ udp
+ segments
+ windowing

Question 3

Drag and drop the correct address space on the left to the IPv6 multicast feature or protocol on the right.

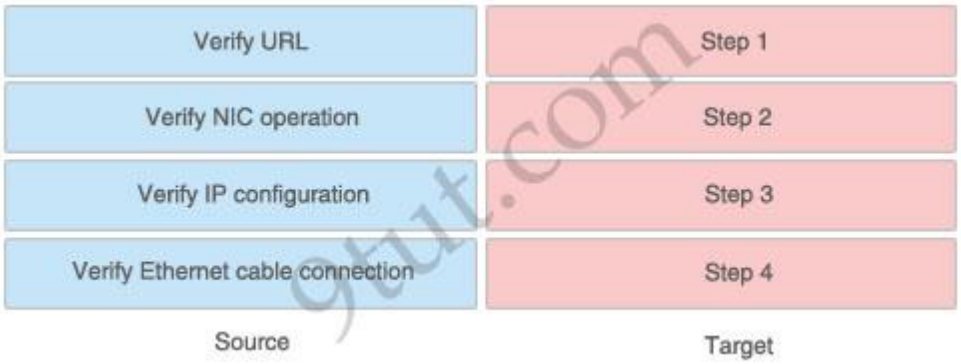


Answer:

+ All nodes of Link Local: FF02::1
+ All EIGRPv3 routers: FF02::A
+ All OSPFv3 Designated routers: FF02::6
+ All PIM routers: FF02::D
+ All OSPFv3 routers: FF02::5
+ All routers of site local: FF05::2

Question 4

A user is unable to connect to the Internet. Based on the layered approach to troubleshooting and beginning with the lowest layer. Follow the guide and drag the contents to relevant modules.

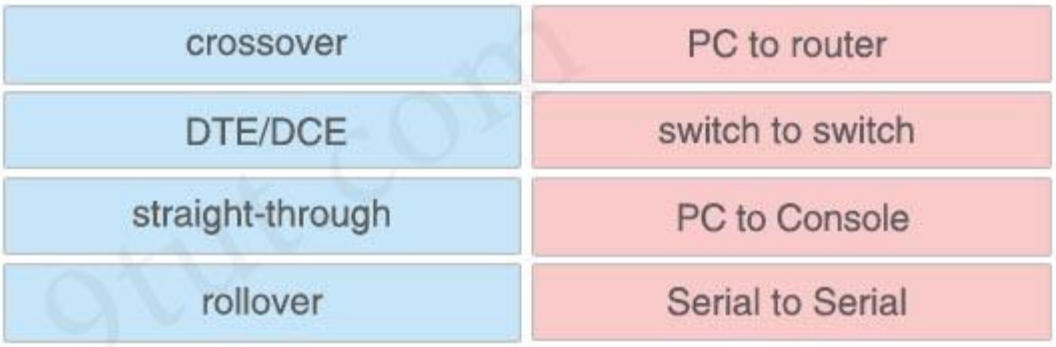


Answer:

1) Verify Ethernet cable connection: Step 1
2) Verify NIC operation: Step 2
3) Verify IP configuration: Step 3
4) Verify URL: Step 4

Question 5

The left describes the types of cables, while the right describes the purposes of the cables. Drag the items on the right to the proper locations

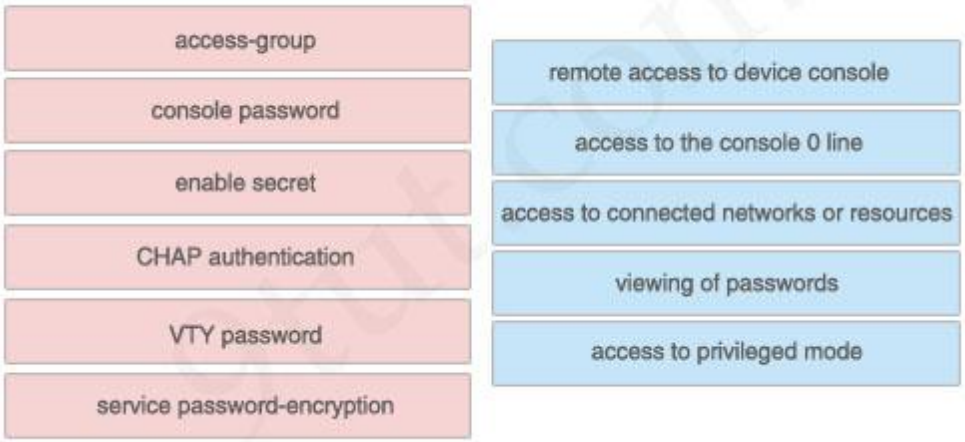


Answer:

crossover: switch to switch
DTE/DCE: Serial to Serial
straight-through: PC to router
rollover: PC to Console

Question 6

Drag the security features on the left to the specific security risks they help protect against on the right. (Not all options are used)



Answer:

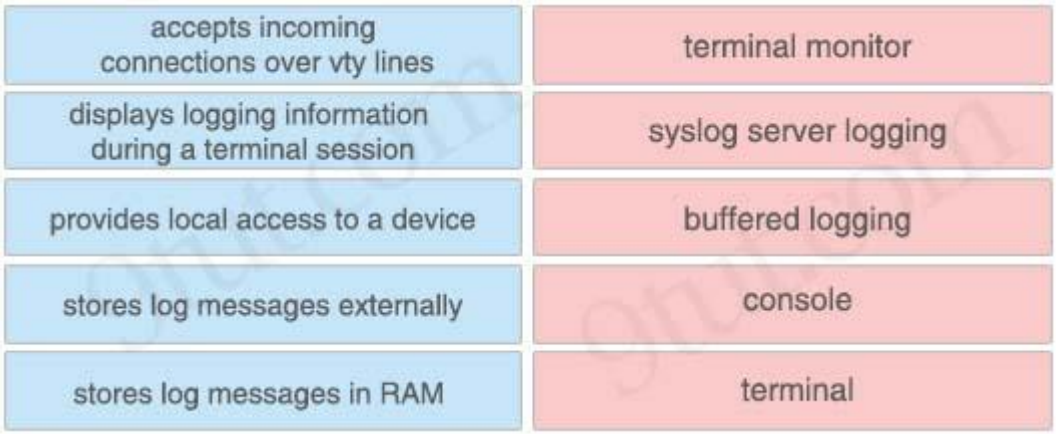
1) VTY password: remote access to device console
2) console password: access to the console 0 line
3) access-group: access to connected networks or resources

4) service password-encryption: viewing of passwords
5) enable secret: access to privileged mode

The unselected left-box – CHAP – is used to verify the identity of the peer by means of a three-way handshake.

Question 7

Drag drop about logging types

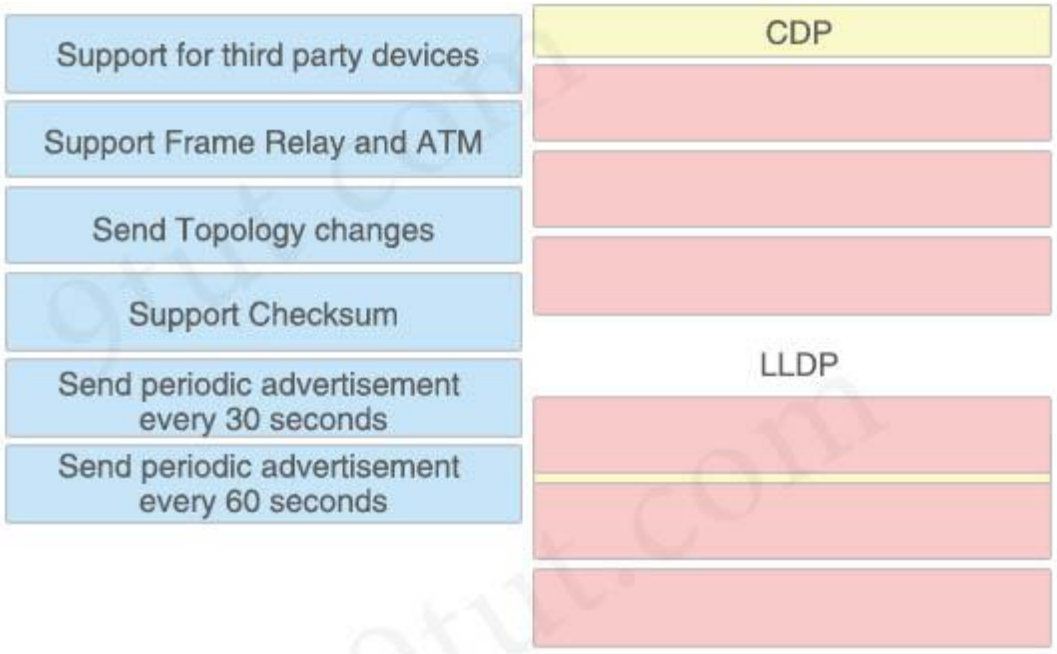


Answer:

+ accepts incoming connections over vty lines: terminal
+ displays logging information during a terminal session: terminal monitor
+ provides local access to a device: console
+ stores log messages externally: syslog server logging
+ stores log messages in RAM: buffered logging

Question 8

Drag drop about the difference between CDP and LLDP.



Answer:

CDP

+ Support Frame relay and ATM
+ Support Checksum
+ Send periodic advertisement every 60 seconds

LLDP

+ Support for third party devices
+ Send Topology changes
+ ? (maybe Send periodic advertisement every 30 seconds)

Question 9

Drag drop about logging types



Answer:

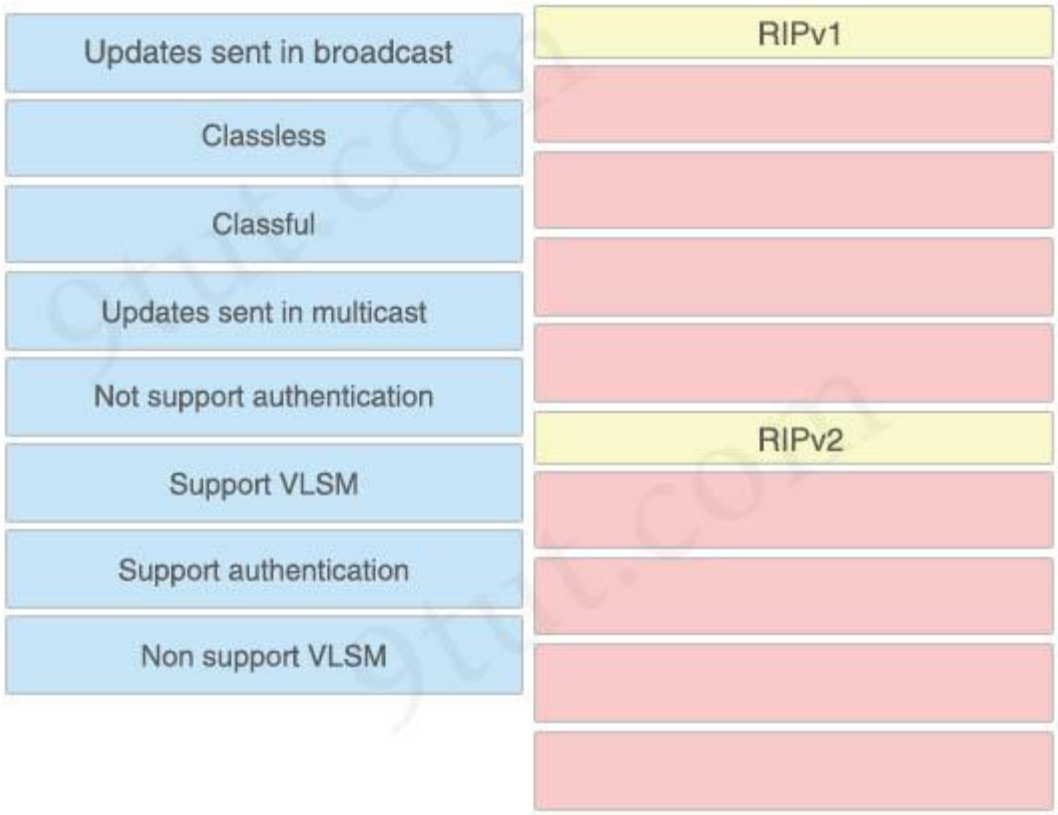
+ accepts incoming connections over vty lines: terminal
+ displays logging information during a terminal session: terminal monitor
+ provides local access to a device: console
+ stores log messages externally: syslog server logging
+ stores log messages in RAM: buffered logging

Drag and Drop 2

http://www.9tut.com/drag-and-drop-2

Question 1

Drag drop about RIPv1 vs RIPv2



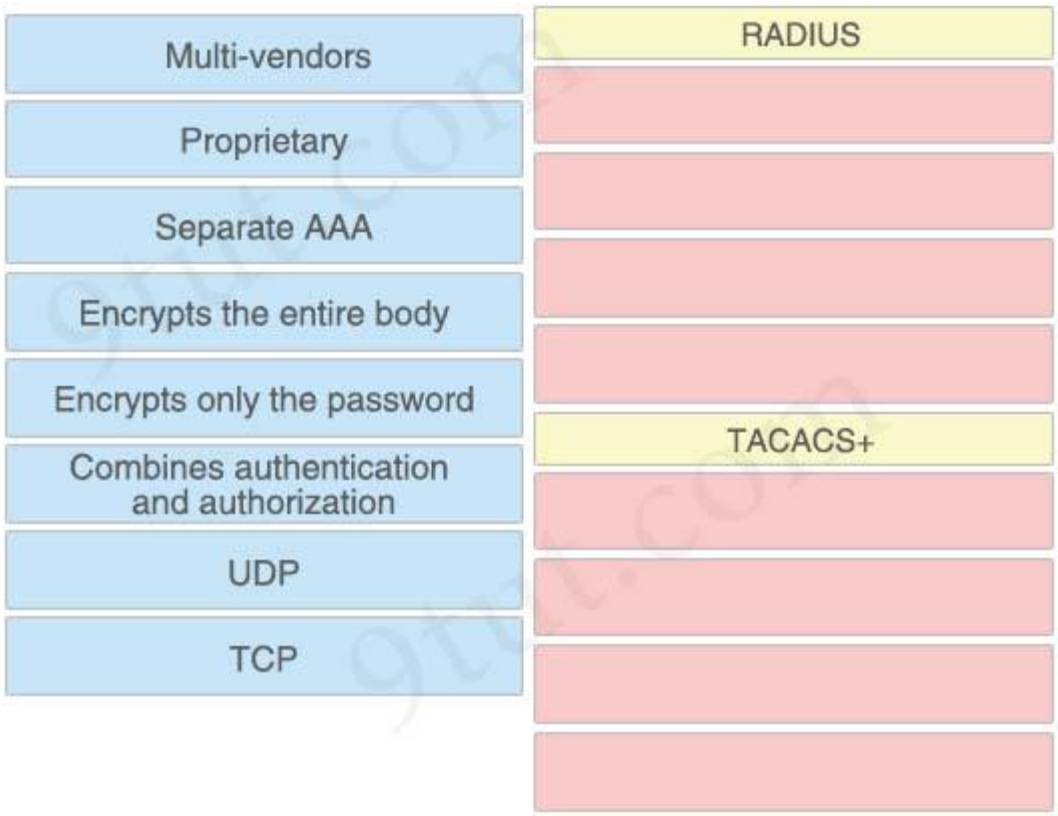
Answer:

RIPv1:
+ Classful
+ Updates sent in broadcast
+ Not support authentication
+ Non support VLSM

RIPv2:
+ Classless
+ Support VLSM
+ Updates sent in multicast
+ Support authentication

Question 2

Drag drop about RADIUS & TACACS+



Answer:

RADIUS:
+ Multi-vendors
+ UDP
+ Combines authentication and authorization
+ Encrypts only the password

TACACS+:
+ Proprietary
+ Separate AAA
+ Encrypts the entire body
+ TCP

Question 3

Drag drop about SDN

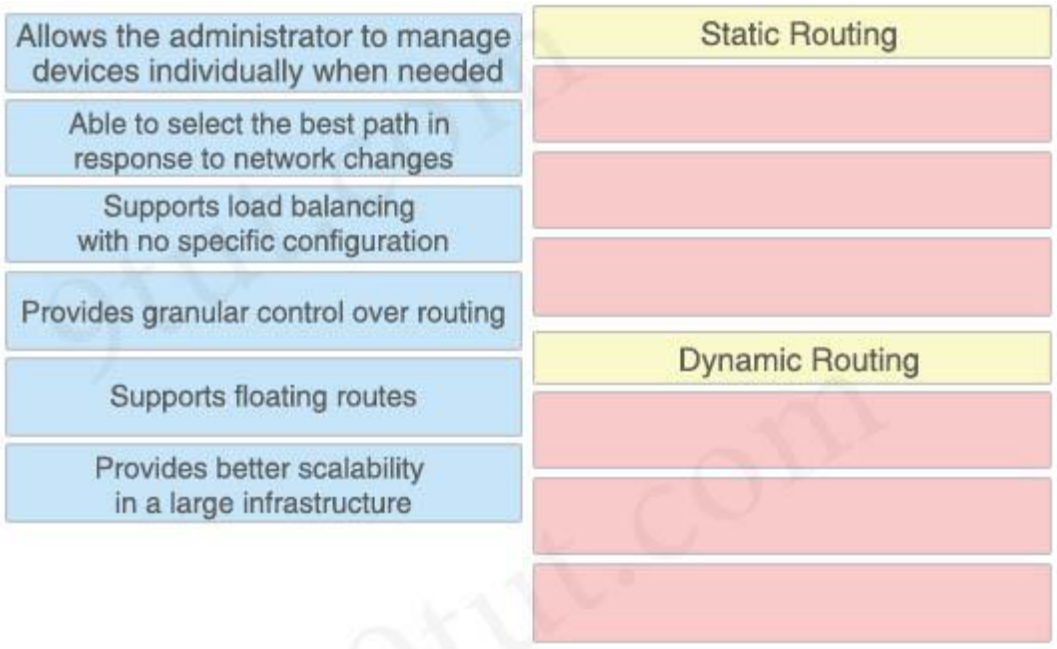


Answer:

+ HTTPS: call to the APIC-EM API from a library
+ JSON: data-structure format that passes parameters for API calls
+ OpenFlow: southbound API
+ RBAC: token-based security mechanism
+ REST: northbound API

Question 4

Drag drop about Static routing vs Dynamic routing



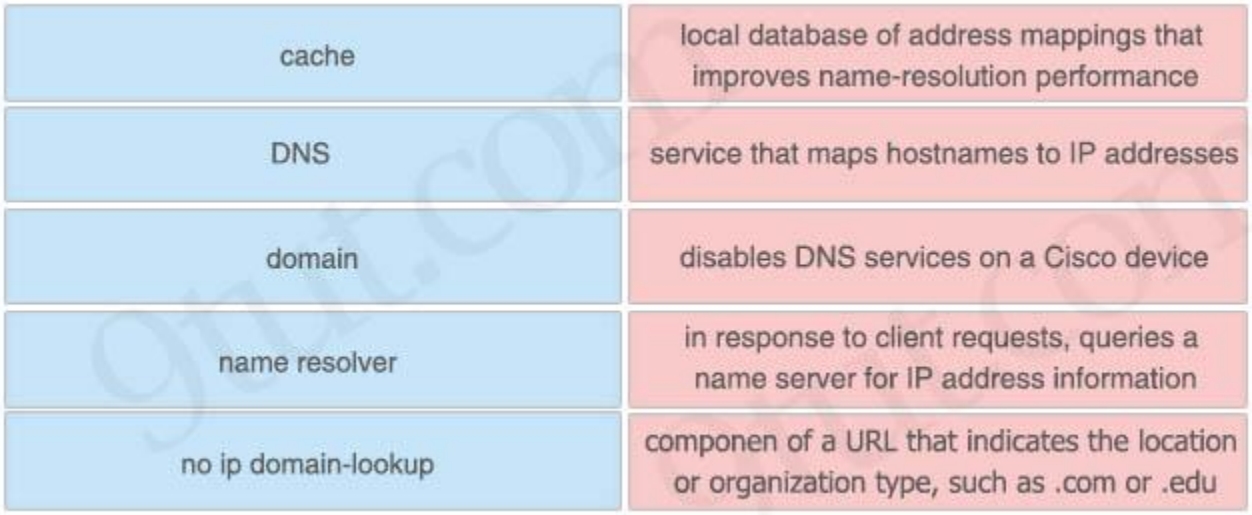
Answer:

Static Routing:
+ Allows the administrator to manage devices individually when needed
+ Supports floating routes
+ Provides granular control over routing

Dynamic Routing:
+ Able to select the best path in response to network changes
+ Supports load balancing with no specific configuration
+ Provides better scalability in a large infrastructure

Question 5

Drag drop about DNS services

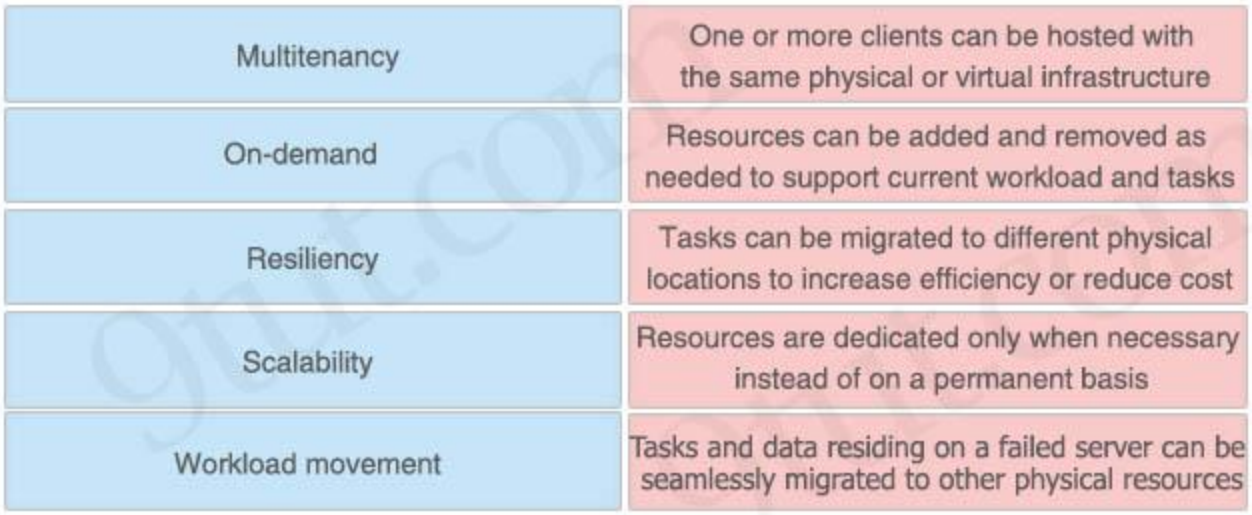


Answer:

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

Question 6

Drag drop about characteristics of a cloud environment.

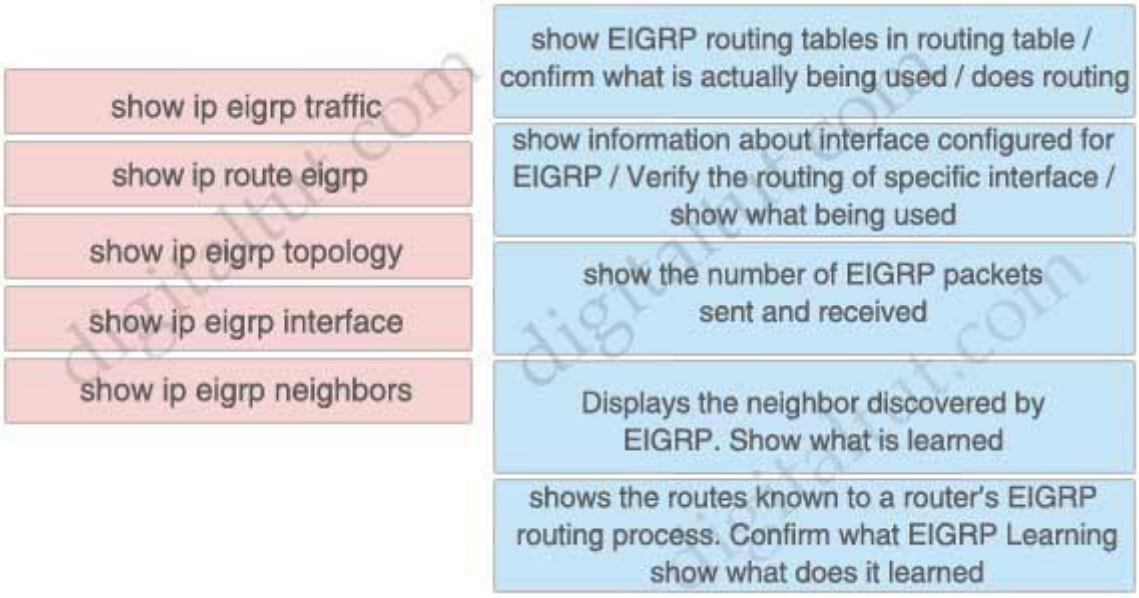


Answer:

+ Multitenancy: One or more clients can be hosted with the same physical or virtual infrastructure
+ Scalability: Resources can be added and removed as needed to support current workload and tasks
+ Workload movement: Tasks can be migrated to different physical locations to increase efficiency or reduce cost
+ On-demand: Resources are dedicated only when necessary instead of on a permanent basis
+ Resiliency: Tasks and data residing on a failed server can be seamlessly migrated to other physical resources

Question 7

Drag the “show” commands on the left to their proper locations on the right



Answer:

+ **show ip route eigrp**: show EIGRP routing tables in routing table / confirm what is actually being used / does routing
+ **show ip eigrp interface**: show information about interface configured for EIGRP / Verify the routing of specific interface /
show what being used
+ **show ip eigrp traffic**: show the number of EIGRP packets sent and received
+ **show ip eigrp neighbors**: Displays the neighbor discovered by EIGRP. Show what is learned
+ **show ip eigrp topology**: shows the routes known to a router's EIGRP routing process. Confirm what EIGRP learning. Show what does it learned

Question 8

Drag and drop the steps to configure EIGRP IPv6 into the appropriate order.

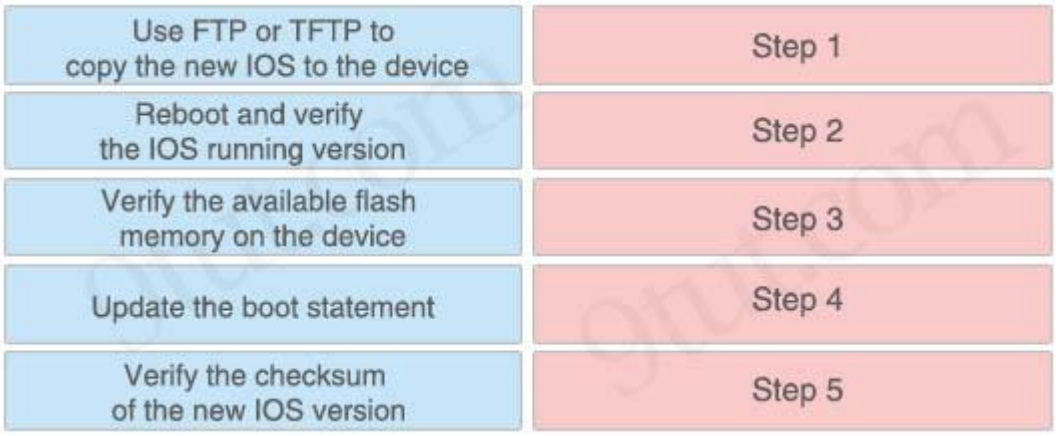


Answer:

Step 1: enable
Step 2: configure terminal
Step 3: ipv6 router eigrp as-number
Step 4: router id
Step 5: ipv6 eigrp as-number (under interface mode)

Question 9

Drag and drop the steps in the process of upgrading the IOS on a Cisco router.

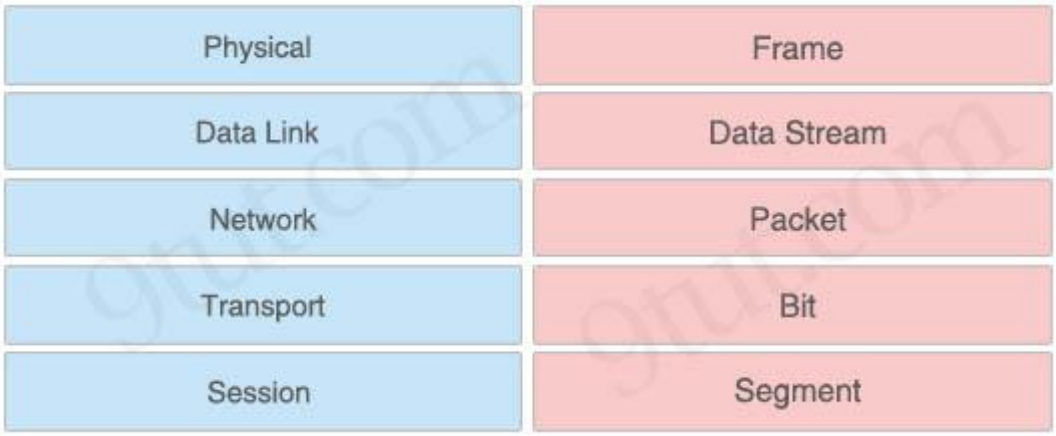


Answer:

Step 1: Verify the available flash memory on the device
Step 2: Use FTP or TFTP to copy the new IOS to the device
Step 3: Verify the checksum of the new IOS version
Step 4: Update the boot statement
Step 5: Reboot and verify the IOS running version

Question 10

Drag and drop about data unit for OSI model to the correspondent places.



Answer:

Physical: Bit
Data Link: Frame
Network: Packet
Transport: Segments
Session: Data Stream

Drag and Drop 3

http://www.9tut.com/drag-and-drop-3

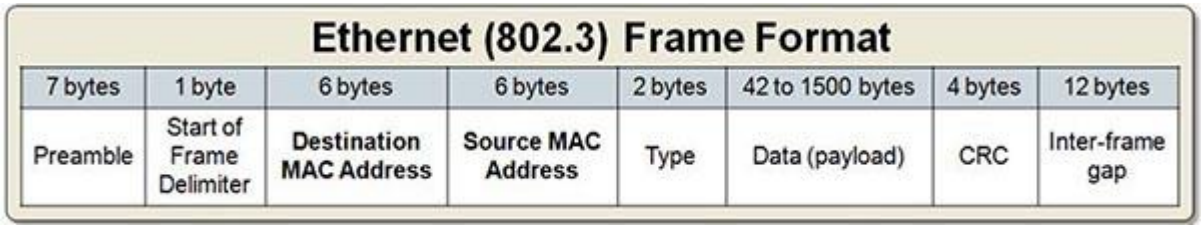
Question 1

Drag and drop the items on the left to the correct sequence of an Ethernet frame.

Destination Address	1
Type	2
Preamble	3
SFD (Start of Frame Delimiter)	4
Source Address	5
FCS	6
Data	7

Answer:

1: Preamble
2: SFD (Start of Frame Delimiter)
3: Destination Address
4: Source Address
5: Type
6: Data
7: FCS



Question 2

Drag drop about STP port roles.

alternate	path to the root bridge that excludes the root port
designated	elect port for an individual LAN segment
disable	port that is excluded from the spanning-tree process
root	elected port for the spanning tree topology as a whole

Answer:

+ alternate: path to the root bridge that excludes the root port
+ designated: elect port for an individual LAN segment
+ disable: port that is excluded from the spanning-tree process
+ root: elected port for the spanning tree topology as a whole

Question 3

Drag drop about DNS related commands.

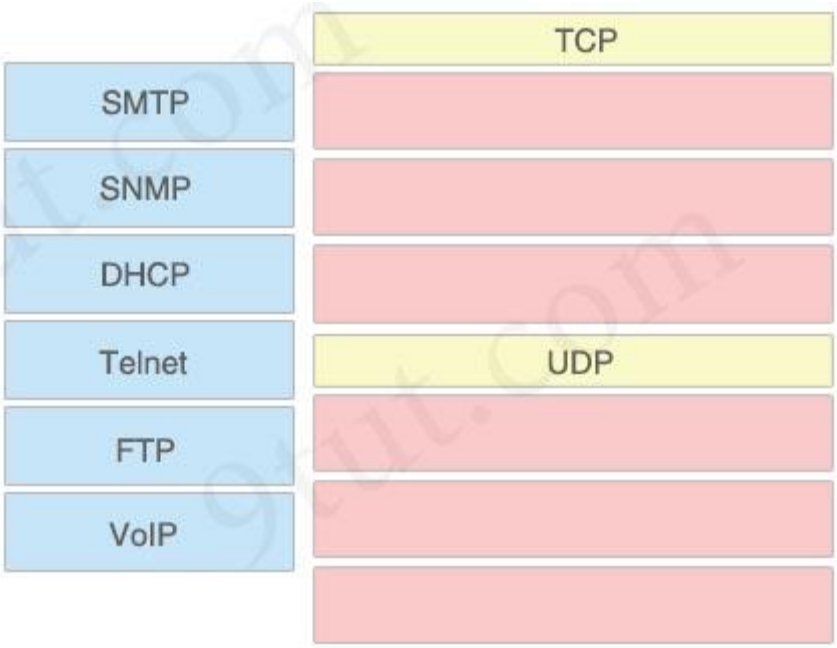
ip dns-server	enable dns lookup
ip domain list	specifies the default domain to append to unqualified host name
ip domain lookup	enable the DNS server on the device
ip domain name	statically map on ip address to host name
ip host	specifies a sequence of domain names
ip name-server	identified a DNS server to provide lookup service

Answer:

+ ip dns-server: identified a DNS server to provide lookup service
+ ip domain list: specifies a sequence of domain names.
+ ip domain lookup: enable dns lookup
+ ip domain name: specifies the default domain to append to unqualified host name.
+ ip host: statically map on ip address to host name
+ ip name-server: enable the DNS server on the device

Question 4

Drag drop about TCP and UDP. Classify which protocols run TCP or UDP.



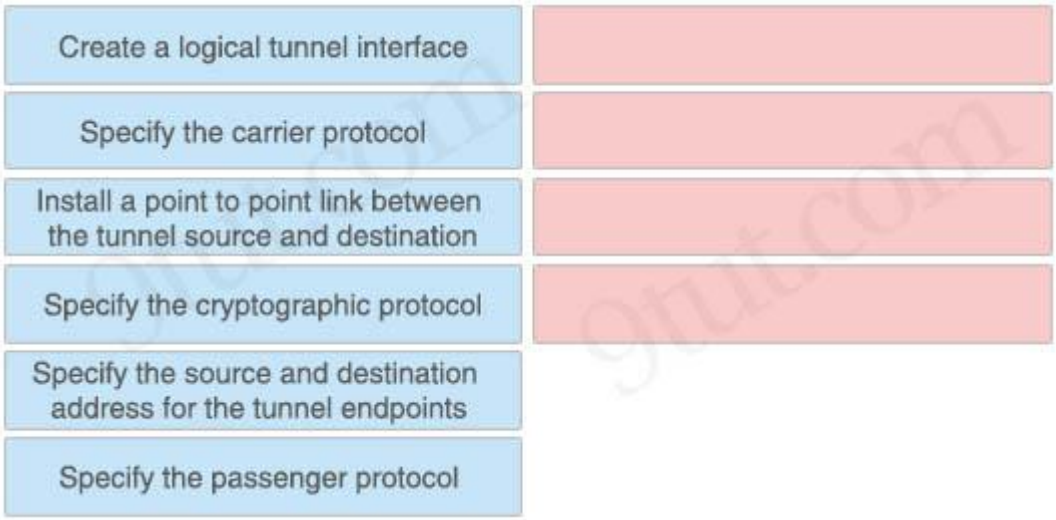
Answer:

TCP:
+ SMTP
+ Telnet
+ FTP

UDP:
+ SNMP
+ DHCP
+ VoIP

Question 5

Arrange in the order of creation of GRE tunnel



Answer:

Step 1: Create a logical tunnel interface

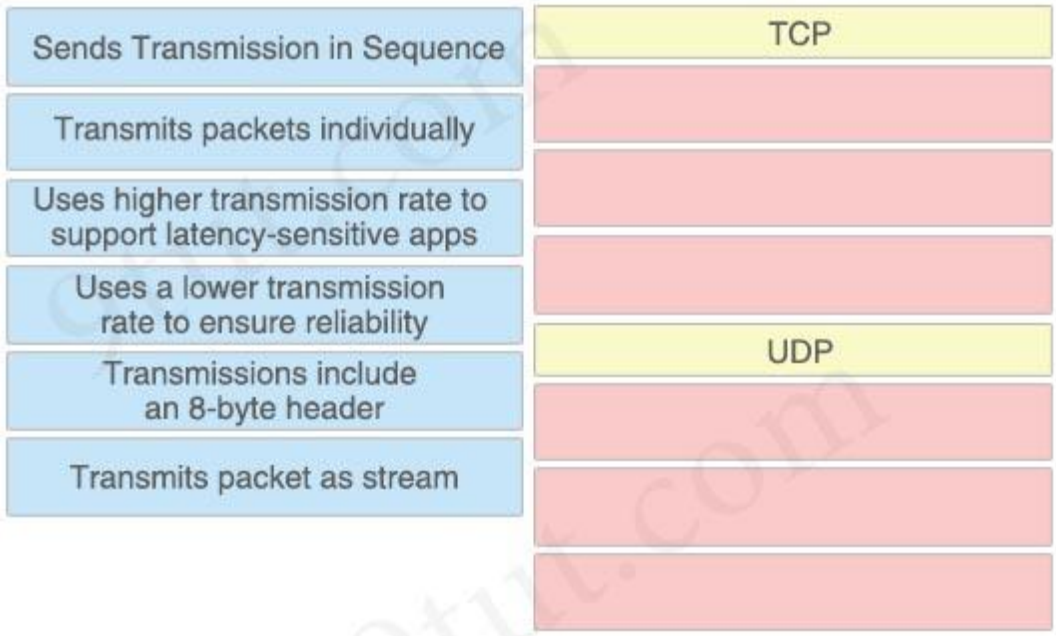
Step 2: Specify the carrier protocol

Step 3: Specify passenger protocol (IPv4 or IPv6)

Step 4: Specify the source and destination address for the tunnel endpoints

Question 6

Drag and Drop Question on TCP and UDP.



Answer:

TCP:
+ Sends Transmission in Sequence
+ Uses a lower transmission rate to ensure reliability
+ Transmits packets individually

UDP:
+ Transmits packet as stream
+ Uses higher transmission rate to support latency-sensitive apps
+ Transmissions include an 8-byte header

Question 7

Drag and Drop on MAC addresses.

Dynamic MAC address	associates a learned MAC address with its connected interface
MAC ACL	adding a previously unknown MAC into the address table
MAC address table	MAC that is learned by the switch through normal traffic
MAC learning	feature that determines whether incoming traffic will be allowed
MAC aging	MAC address that remains in the MAC address table after reboot
Static MAC	removing an inactive MAC after a specified time

Answer:

+ Dynamic MAC address: MAC that is learned by the switch through normal traffic
+ MAC ACL: feature that determines whether incoming traffic will be allowed
+ MAC address table: associates a learned MAC address with its connected interface
+ MAC learning: adding a previously unknown MAC into the address table
+ MAC aging: removing an inactive MAC after a specified time
+ Static MAC: MAC address that remains in the MAC address table after reboot

Question 8

Drag and drop the PPPoE packet type on the left to the corresponding description on the right.

PADI	A packet that is sent from the PPPoE client with the destination_addr set to the chosen access concentrator. The packet contains a session request from the client
PADO	A packet that is sent with the destination_addr set to the broadcast address. The packet indicates the type of service requested.
PADR	A packet that is sent as confirmation to the client. The packet contains the unique PPPoE session ID
PADS	A packet that is sent with the destination_addr set to the unicast address of the PPPoE client. The packet contains an offer for the client
PADT	A packet that is sent to terminate the PPPoE session

Answer:

+ **PADI** – A packet that is sent with the destination_addr set to the broadcast address. The packet indicates the type of service requested.
+ **PADO** – A packet that is sent with the destination_addr set to the unicast address of the PPPoE client. The packet contains an offer for the client
+ **PADR** – A packet that is sent from the PPPoE client with the destination_addr set to the chosen access concentrator. The packet contains a session request from the client
+ **PADS** – A packet that is sent as confirmation to the client. The packet contains the unique PPPoE session ID
+ **PADT** – A packet that is sent to terminate the PPPoE session.

Question 9

Drag and drop the PPPoE message types from the left into the sequence in which PPPoE messages are sent on the right.

PADR	1
PADS	2
PADI	3
PADO	4

Answer:

1. PADI
2. PADO
3. PADR
4. PADS

Question 10

Drag and Drop on Wireless LAN Controller

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:

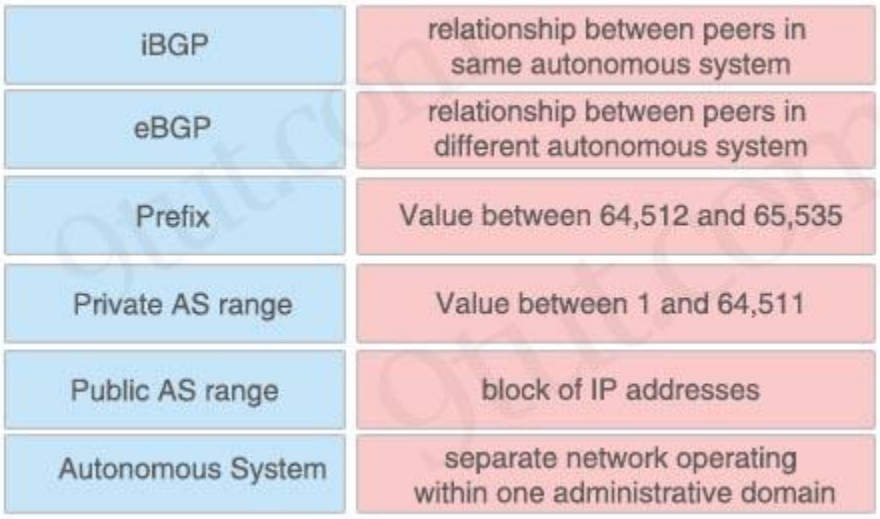
+ **Dynamic RF Feature**: Access points auto adjust signal strength
+ **Easy Deployment Process**: Controller provides centralized management of users and VLANs
+ **Optimized user performance**: Controller uses loadbalancing to maximize throughput
+ **Easy upgrade process**: Controller image auto deployed to access Points

Drag and Drop 4

http://www.9tut.com/drag-and-drop-4

Question 1

Drag drop about BGP



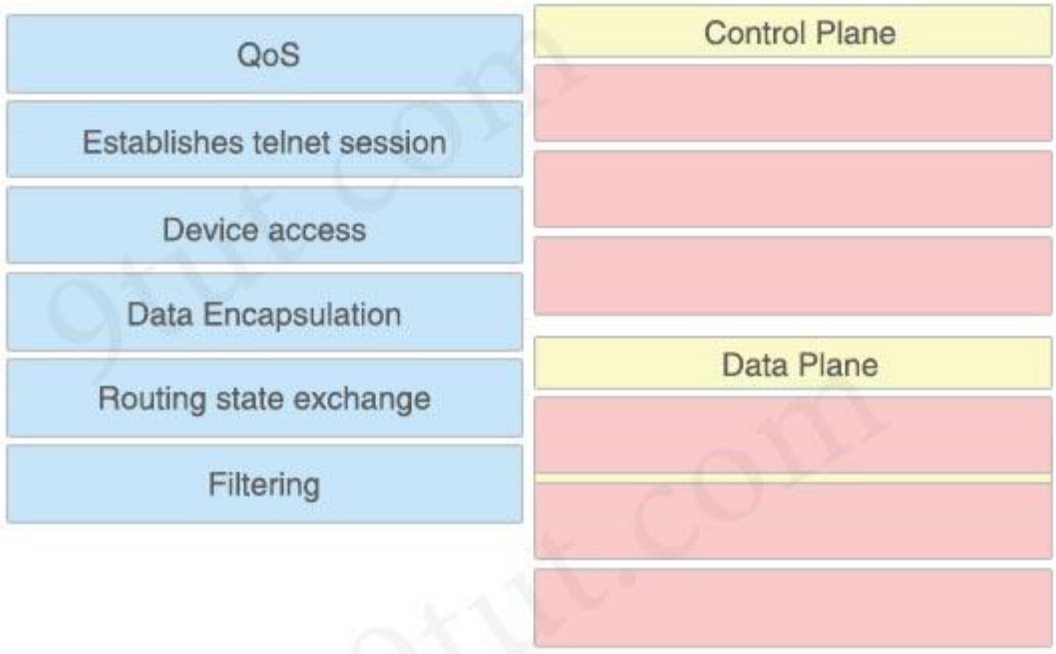
Answer:

iBGP <-> relationship between peers in same autonomous system
eBGP <-> relationship between peers in different autonomous system
Prefix <-> block of IP addresses
Private AS range <-> Value between 64,512 and 65,535
Public AS range <-> Value between 1 and 64,511
Autonomous System <-> separate network operating within one administrative domain

Question 2

Drag the options below unto the planes they operate

Control Plane and Data Plane

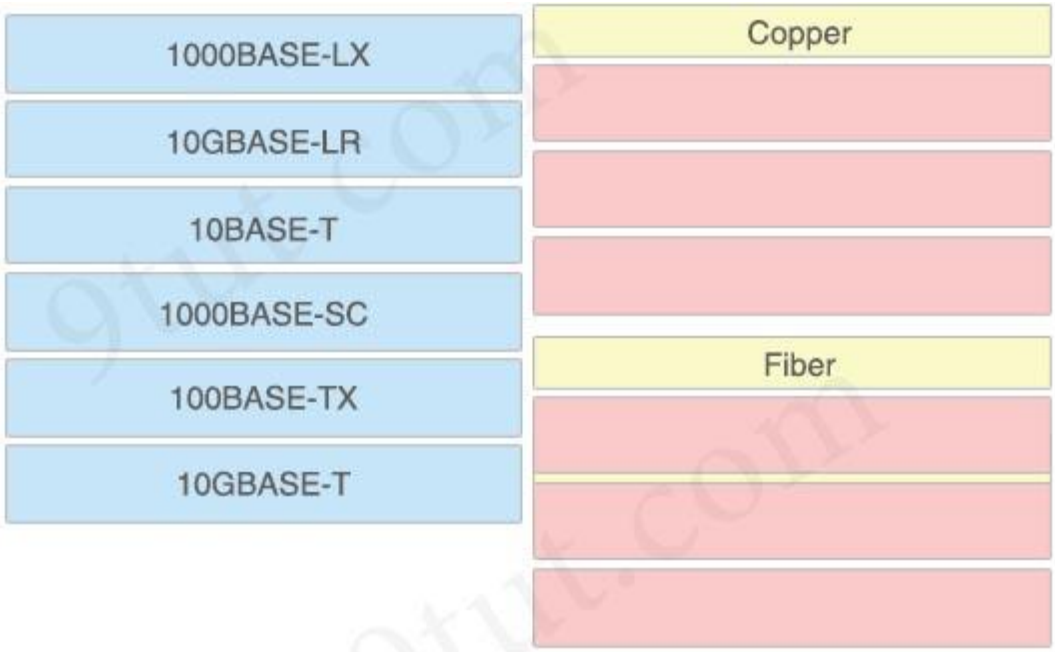


Control Plane:
3. Routing state exchange
4. Establishes telnet session
5. Device access

Data Plane:
1. QoS
2. Filtering
6. Data Encapsulation

Question 3

Drag drop about Cable types.



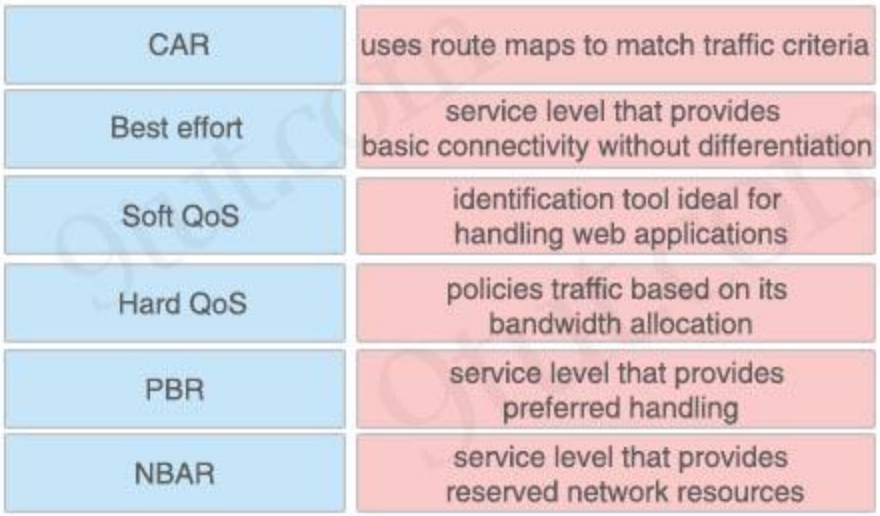
Answer:

Copper:
+ 10BASE-T
+ 100BASE-TX
+ 10GBASE-T

Fiber:
+ 10GBASE-LR
+ 1000BASE-LX
+ 1000BASE-SC

Question 4

Drag drop about QoS.



Answer:

+ **CAR**: policies traffic based on its bandwidth allocation
+ **Best effort**: service level that provides basic connectivity without differentiation
+ **Soft QoS**: service level that provides preferred handling
+ **Hard QoS**: service level that provides reserved network resources
+ **PBR**: uses route maps to match traffic criteria
+ **NBAR**: identification tool ideal for handling web applications

Note:

+ Committed Access Rate (CAR)
+ Network-based application recognition (NBAR)
+ Policy-based routing (PBR)
+ Soft QoS: also known as Differentiated Services (Diffserv), which ensures resources for applications based on available bandwidth
+ Hard QoS: Differentiated Service (DiffServ) is an appropriate example for this type of QoS service

Question 5

Drag and drop the DHCP client states from the left into the standard order in which the client passes through them on the right.

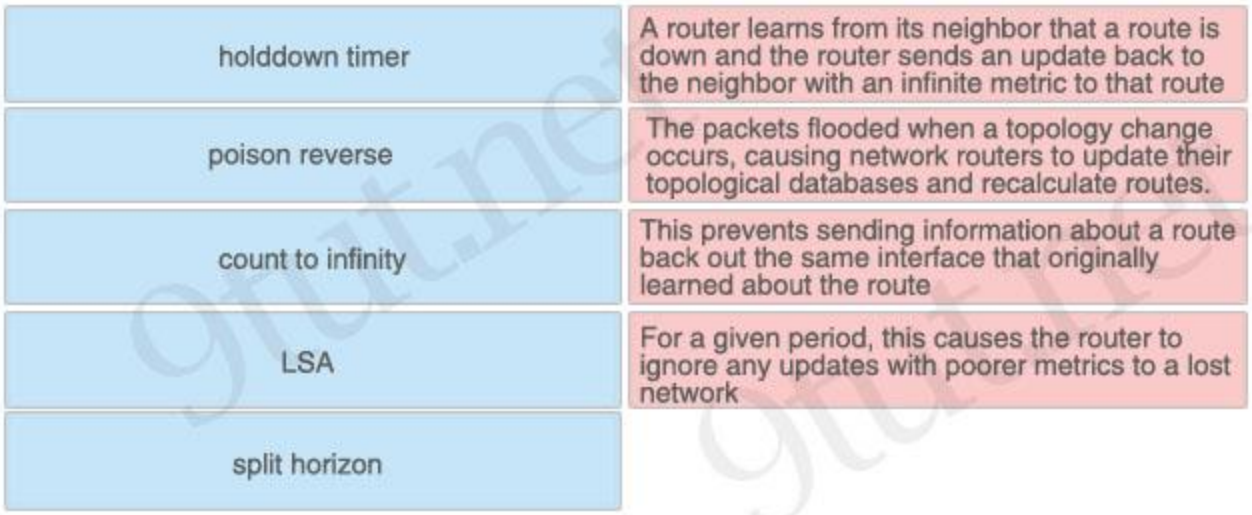
binding	first
initializing	second
rebinding	third
renewing	fourth
requesting	fifth
selecting	sixth

Answer:

initializing – first
selecting – second
requesting – third
binding – fourth
renewing – fifth
rebinding – sixth

Question 6

Drag the term on the left to its definition on the right (not all options are used)

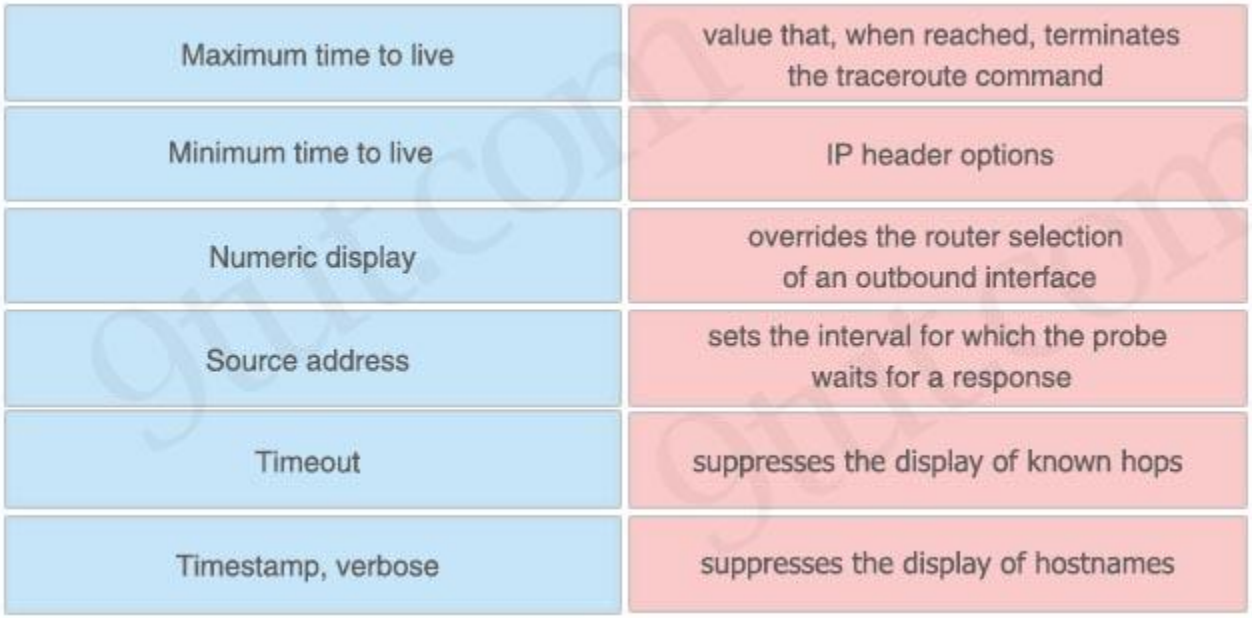


Answer:

+ **poison reverse**: A router learns from its neighbor that a route is down and the router sends an update back to the neighbor with an infinite metric to that route
+ **LSA**: The packets flooded when a topology change occurs, causing network routers to update their topological databases and recalculate routes
+ **split horizon**: This prevents sending information about a route back out the same interface that originally learned about the route
+ **holddown timer**: For a given period, this causes the router to ignore any updates with poorer metrics to a lost network

Question 7

Drag and drop the extended traceroute options from the left onto the correct description on the right.

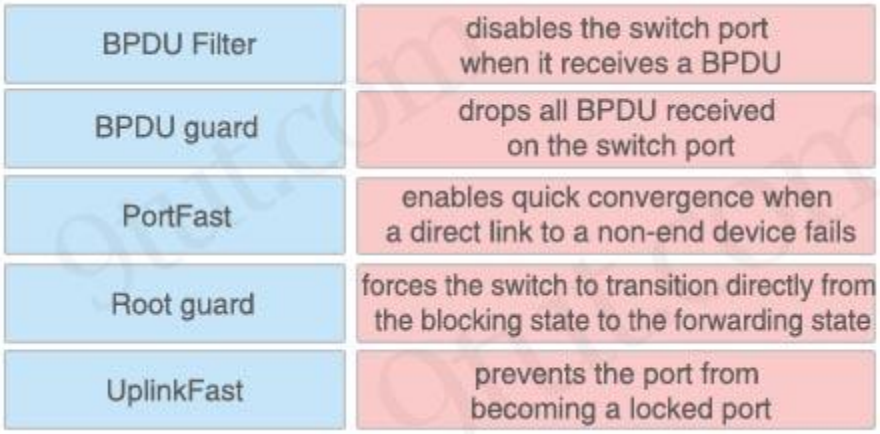


Answer:

+ Maximum time to live: value that, when reached, terminates the traceroute command
+ Minimum time to live: suppresses the display of known hops
+ Numeric display: suppresses the display of hostnames
+ Source address: overrides the router selection of an outbound interface
+ Timeout: sets the interval for which the probe waits for a response
+ Timestamp, verbose: IP header options

Question 8

Drag and drop the items on the right to the correspondent definitions on the left.



Answer:

+ BPDU Filter: drops all BPDU received on the switch port
+ BPDU guard: disables the switch port when it receives a BPDU
+ PortFast: forces the switch to transition directly from the blocking state to the forwarding state
+ Root guard: prevents the port from becoming a locked port
+ UplinkFast: enables quick convergence when a direct link to a non-end device fails

Question 9

Drag and drop the values in a routing table from the left onto the correct meanings on the right

Administrative distance	code that indicates the method by which the router learned the route
Destination network	value used by the router to determine the preferred route
Metric	indicator of the trustworthiness of the route
Next hop	network to which the router forwards packets on the associated route
Route source	remote network address

Answer:

+ Administrative distance: indicator of the trustworthiness of the route
+ Destination network: remote network address
+ Metric: value used by the router to determine the preferred route
+ Next hop: network to which the router forwards packets on the associated route
+ Route source: code that indicates the method by which the router learned the route

Question 10

Drag and drop the CSMA components from the left onto the correct descriptions on the right

1-persistent	Access mode used for Ethernet network
CSMA/CA	Access mode used for Wi-fi networks
CSMA/CD	Access mode used in the controlled area network
O-peristent	Rules that define the system response when a collision occurs on an Ethernet network
P-persistent	Rules that define the system response when a collision occurs on a Wi-fi network

Answer:

+ 1-persistent: Access mode used for Ethernet network
+ CSMA/CA: Rules that define the system response when a collision occurs on a Wi-fi network
+ CSMA/CD: Rules that define the system response when a collision occurs on an Ethernet network
+ O-peristent: Access mode used in the controlled area network
+ P-persistent: Access mode used for Wi-fi networks

Explanation

1-persistent CSMA is an aggressive transmission algorithm. When the transmitting node is ready to transmit, it senses the transmission medium for idle or busy. If idle, then it transmits immediately. If busy, then it senses the transmission medium continuously until it becomes idle, then transmits the message (a frame) unconditionally (i.e. with probability=1). In case of a collision, the sender waits for a random period of time and attempts the same procedure again. **1-persistent CSMA is used in CSMA/CD systems including Ethernet**.

Non persistent CSMA is a non aggressive transmission algorithm. When the transmitting node is ready to transmit data, it senses the transmission medium for idle or busy. If idle, then it transmits immediately. If busy, then it waits for a random period of time (during which it does not sense the transmission medium) before repeating the whole logic cycle (which started with sensing the transmission medium for idle or busy) again. This approach reduces collision, results in overall higher medium throughput but with a penalty of longer initial delay compared to 1–persistent.

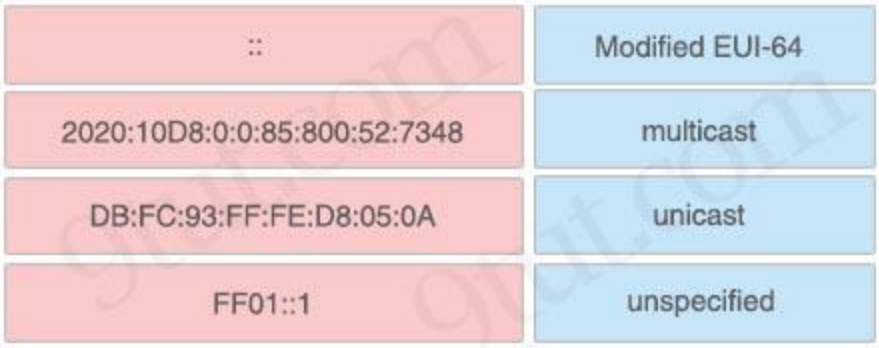
P-persistent is an approach between 1-persistent and non-persistent CSMA access modes. [1]When the transmitting node is ready to transmit data, it senses the transmission medium for idle or busy. If idle, then it transmits immediately. If busy, then it senses the transmission medium continuously until it becomes idle, then transmits with probability p. If the node does not transmit (the probability of this event is 1-p), it waits until the next available time slot. If the transmission medium is not busy, it transmits again with the same probability p. This probabilistic hold-off repeats until the frame is finally transmitted or when the medium is found to become busy again (i.e. some other node has already started transmitting). In the latter case the node repeats the whole logic cycle (which started with sensing the transmission medium for idle or busy) again. **p-persistent CSMA is used in CSMA/CA systems including Wi-Fi** and other packet radio systems.

O-persistent
Each node is assigned a transmission order by a supervisory node. When the transmission medium goes idle, nodes wait for their time slot in accordance with their assigned transmission order. The node assigned to transmit first transmits immediately. The node assigned to transmit second waits one time slot (but by that time the first node has already started transmitting). Nodes monitor the medium for transmissions from other nodes and update their assigned order with each detected transmission (i.e. they move one position closer to the front of the queue).[2] O-persistent CSMA is used by CobraNet, LonWorks and the **controller area network**.

Reference: https://en.wikipedia.org/wiki/Carrier-sense_multiple_access

Question 11

Drag and drop the IPv6 addresses from the left onto the correct types on the right

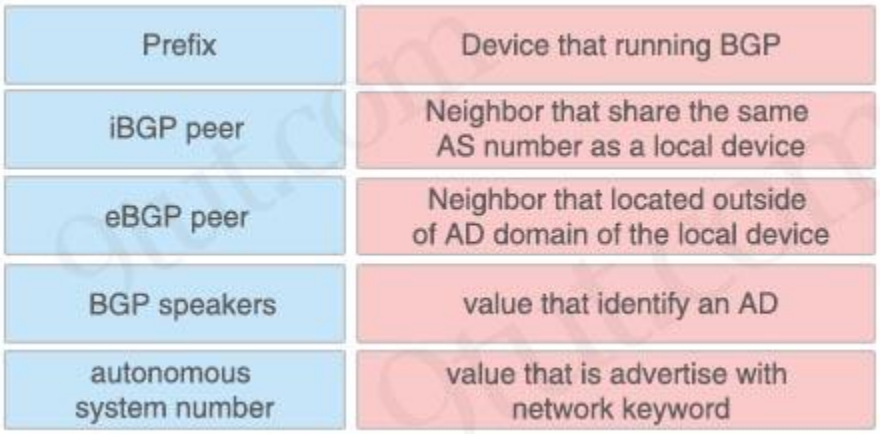


Answer:

+ **Modified EUI-64**: DB:FC:93:FF:FE:D8:05:0A
+ **multicast**: FF01::1
+ **unicast**: 2020:10D8:0:0:85:800:52:7348
+ **unspecified**: ::

Question 12

Drag and drop the BGP components from the left onto the correct descriptions on the right.



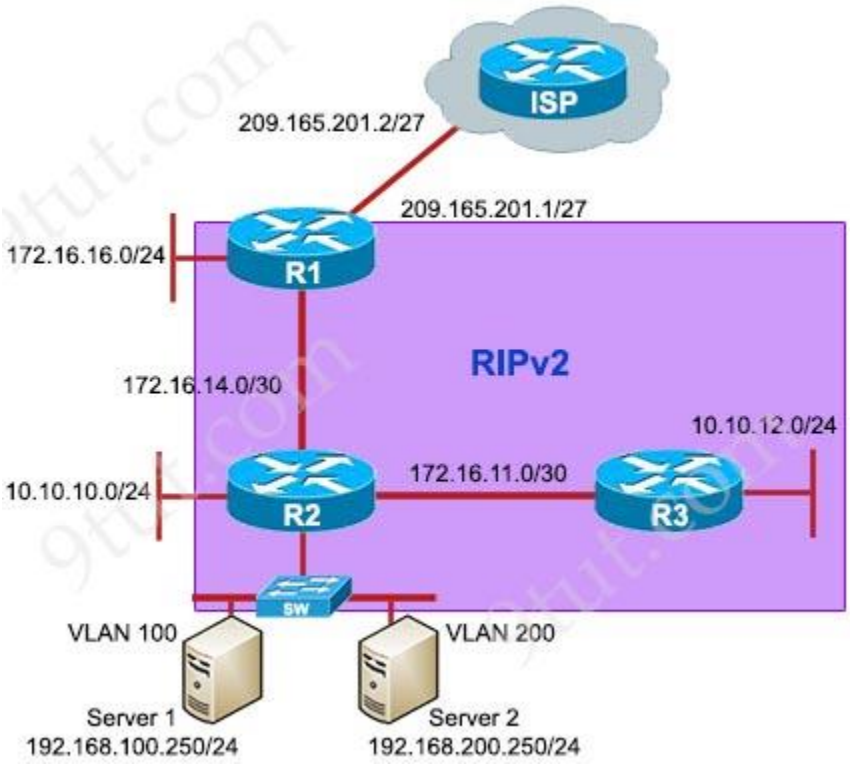
Answer:

+ Device that running BGP: **BGP speakers**
+ Neighbor that share the same AS number as a local device: **iBGP peer**
+ Neighbor that located outside of AD domain of the local device: **eBGP peer**
+ Value that identify an AD: **Autonomous system number**
+ Value that is advertise with network keyword: **Prefix**

RIPv2 Troubleshooting Sim

http://www.9tut.com/ripv2-troubleshooting-sim

Refer to the topology below and answer the questions using “show” commands.



Question 1

Server1 and Server2 are unable to communicate with the rest of the network. Your initial check with system administrators shows that IP address settings are correctly configured on the server side. What could be an issue?

A. The VLAN encapsulation is misconfigured on the router subinterfaces.
B. The Router is missing subinterface configuration.
C. The Trunk is not configured on the L2SW1 switch.
D. The IP address is misconfigured on the primary router interface.

Answer: A

Question 2

Users in the main office complain that they are unable to reach internet sites. You observe that internet traffic that is destined towards ISP router is not forwarded correctly on Router R1. What could be an issue?

Ping to Internet server shows the following results from R1:

```
R1#ping 209.165.200.225
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 209.165.200.225, timeout is 2 seconds:
…..
Success rate is 0 percent (0/5)
```

A. The next hop router address for the default route is incorrectly configured.
B. Default route pointing to ISP router is not configured on Router R1.
C. Default route pointing to ISP router is configured with AD of 225.
D. Router R1 configured as DHCP client is not receiving default route via DHCP from ISP router.

Answer: B

Question 3

Examine R2 configuration, the traffic that is destined to R3 LAN network sourced from Router R2 is forwarded to R1 instead R3. What could be an issue?

```
R2#traceroute 10.10.12.1 source 10.10.10.1
Type escape sequence to abort.
Tracing the route to 10.10.12.1
VRF info: (vrf in name/id, vrf out name/id)
1 172.16.14.1 0 msec 1 msec 0 msec
2 172.16.14.1 !H !H *

R2#
```

A. RIPv2 enabled on R3, but R3 LAN network that is not advertised into RIPv2 domain.
B. RIPv2 routing updates are suppressed between R2 and R3 using passive interface feature.
C. RIPv2 not enabled on R3.
D. No issue that is identified; this behavior is normal since default route propagated into RIPv2 domain by Router R1.

Answer: C

Question 4

What is the correct statement below after examining the R1 routing table?

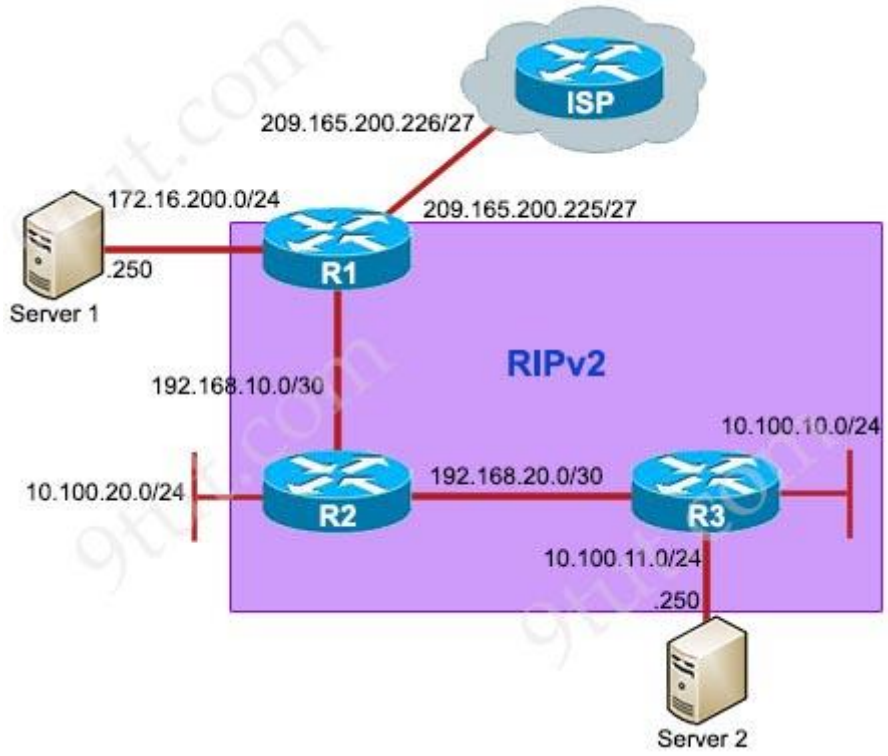
A. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses static route instead RIPv2 because the static route AD that is configured is less than the AD of RIPv2
B. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses RIPv2 instead of static route because the static route AD that is configured is higher than the AD of RIPv2
C. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses static route instead of RIPv2 but the traffic is forwarded to the ISP instead of the internal network
D. Traffic that is destined to 10.10.10.0/24 from R1 LAN network uses RIPv2 instead of static route because the static route AD that is configured is 255

Answer: B

DHCP Sim

http://www.9tut.com/dhcp-sim

Refer to the topology below and answer the questions.



Question 1

Examine the DHCP configuration between R2 and R3, R2 is configured as the DHCP server and R3 as the client. What is the reason R3 is not receiving the IP address via DHCP?

A. On R3, DHCP is not enabled on the interface that is connected to R2.
B. On R3, the interface that is connected to R2 is in shutdown condition.
C. On R2, the interface that is connected to R3 is in shutdown condition.
D. On R2, the network statement in the DHCP pool configuration is incorrectly configured.

Answer: A

Question 2

R1 router clock is synchronized with ISP router. R2 is supposed to receive NTP updates from R1. But you observe that R2 clock is not synchronized with R1. What is the reason R2 is not receiving NTP updates from R1?

A. R1 router Ethernet interface that is connected to R2 is placed in shutdown condition.
B. R2 router Ethernet interface that is connected to R1 is placed in shutdown condition.

C. The NTP server command not configured on R2 router.
D. The IP address that is used in the NTP configuration on R2 router is incorrect.

Answer: D

Question 3

Why applications that are installed on PC's in R2 LAN network 10.100.20.0/24 are unable to communicate with Server1?

A. A standard ACL statement that is configured on R1 is blocking the traffic sourced from R2 LAN network.
B. A standard ACL statement that is configured on R1 is blocking the traffic sourced from Server1 network.
C. A standard ACL statement that is configured on R2 is blocking the traffic sourced from Server1 network.
D. A standard ACL statement that is configured on R2 is blocking the traffic sourced from R2 LAN network.

Answer: C

Question 4

Users complain that they are unable to reach internet sites. You are troubleshooting internet connectivity problem at main office. Which statement correctly identifies the problem on Router R1?

A. NAT configurations on the interfaces are incorrectly configured.
B. NAT translation statement incorrectly configured.
C. Interesting traffic for NAT ACL is incorrectly configured.
D. Only static NAT translation configured from the server, missing Dynamic NAT or Dynamic NAT overloading for internal networks.

Answer: A

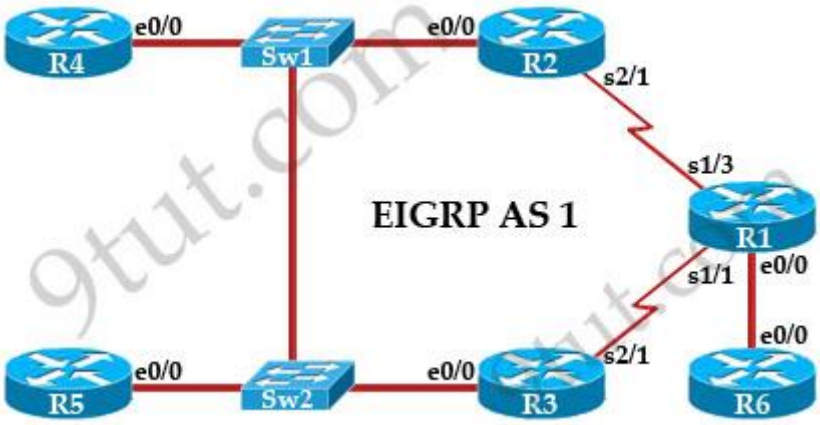
EIGRP Troubleshooting Sim

http://www.9tut.com/eigrp-troubleshooting-sim

Question

Refer to the topology. Your company has connected the routers R1, R2 and R3 with serial links. R2 and R3 are connected to the switches SW1 and SW2, respectively. SW1 and SW2 are also connected to the routers R4 and R5.

The EIGRP routing protocol is configured. You are required to troubleshoot and resolve the EIGRP issues between the various routers. Use the appropriate show commands to troubleshoot the issues.



Question 1

The loopback interfaces on R4 with the IP addresses of 10.4.4.4/32, 10.4.4.5/32 and 10.4.4.6/32 are not appearing in the routing table of R5. Why are the interfaces missing?

A. The interfaces are shutdown, so they are not being advertised.
B. R4 has been incorrectly configured to be in another AS, so it does not peer with R5.
C. Automatic summarization is enabled, so only the 10.0.0.0 network is displayed.
D. The loopback addresses haven't been advertised, and the network command is missing on R4.

Answer: D

Question 2

Which path does traffic take from R1 to R5?

A. The traffic goes through R2.
B. The traffic goes through R3.
C. The traffic is equally load-balanced over R2 and R3.
D. The traffic is unequally load-balanced over R2 and R3.

Answer: C

Question 3

Router R6 does not form an EIGRP neighbor relationship correctly with router R1. What is the cause for this misconfiguration?

A. The K values mismatch.
B. The AS does not match.
C. The network command is missing.
D. The passive-interface command is enabled.

Answer: A

Question 4

Study the following output taken on R1:

```
R1#ping 10.5.5.55 source 10.1.1.1
Sending 5, 100-byte ICMP Echos to 10.5.5.55, timeout is 2 seconds:
Packet sent with a source address of 10.1.1.1
. . . . .
Success rate is 0 percent (0/5)
```

Why are the pings failing?

A. The network statement is missing on R5.
B. The loopback interface is shut down on R5.
C. The network statement is missing on R1.
D. The IP address that is configured on the Lo1 interface on R5 is incorrect.

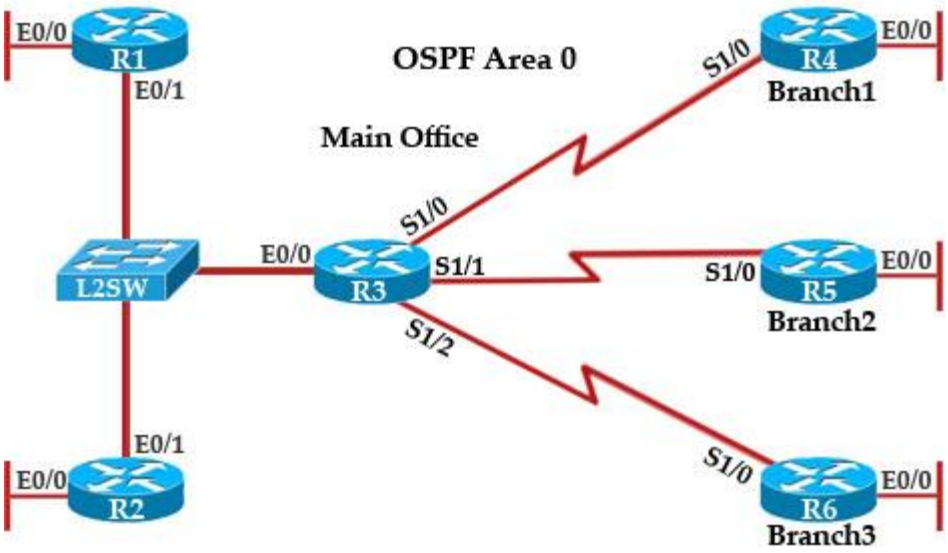
Answer: A

OSPF Neighbor Sim

http://www.9tut.com/ospf-neighbor-sim

Question

Refer to the topology. Your company has decided to connect the main office with three other remote branch offices using point-to-point serial links. You are required to troubleshoot and resolve OSPF neighbor adjacency issues between the main office and the routers located in the remote branch offices.



Question 1

An OSPF neighbor adjacency is not formed between R3 in the main office and R4 in the Branch1 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a Layer 2 issue; an encapsulation mismatch on serial links.
C. There is an OSPF hello and dead interval mismatch.
D. The R3 router ID is configured on R4.

Answer: A

Question 2

An OSPF neighbor adjacency is not formed between R3 in the main office and R5 in the Branch2 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a PPP authentication issue; a password mismatch.
C. There is an OSPF hello and dead interval mismatch.
D. There is a missing network command in the OSPF process on R5.

Answer: C

Question 3

R1 does not form an OSPF neighbor adjacency with R2. Which option would fix the issue?

A. R1 ethernet0/1 is shutdown. Configure no shutdown command.
B. R1 ethernet0/1 configured with a non-default OSPF hello interval of 25; configure no ip ospf

hello-interval 25
C. R2 ethernet0/1 and R3 ethernet0/0 are configured with a non-default OSPF hello interval of 25; configure no ip ospf hello-interval 25
D. Enable OSPF for R1 ethernet0/1; configure ip ospf 1 area 0 command under ethernet0/1

Answer: B

Question 4

An OSPF neighbor adjacency is not formed between R3 in the main office and R6 in the Branch3 office. What is causing the problem?

A. There is an area ID mismatch.
B. There is a PPP authentication issue; the username is not configured on R3 and R6.
C. There is an OSPF hello and dead interval mismatch.
D. The R3 router ID is configured on R6.

Answer: D

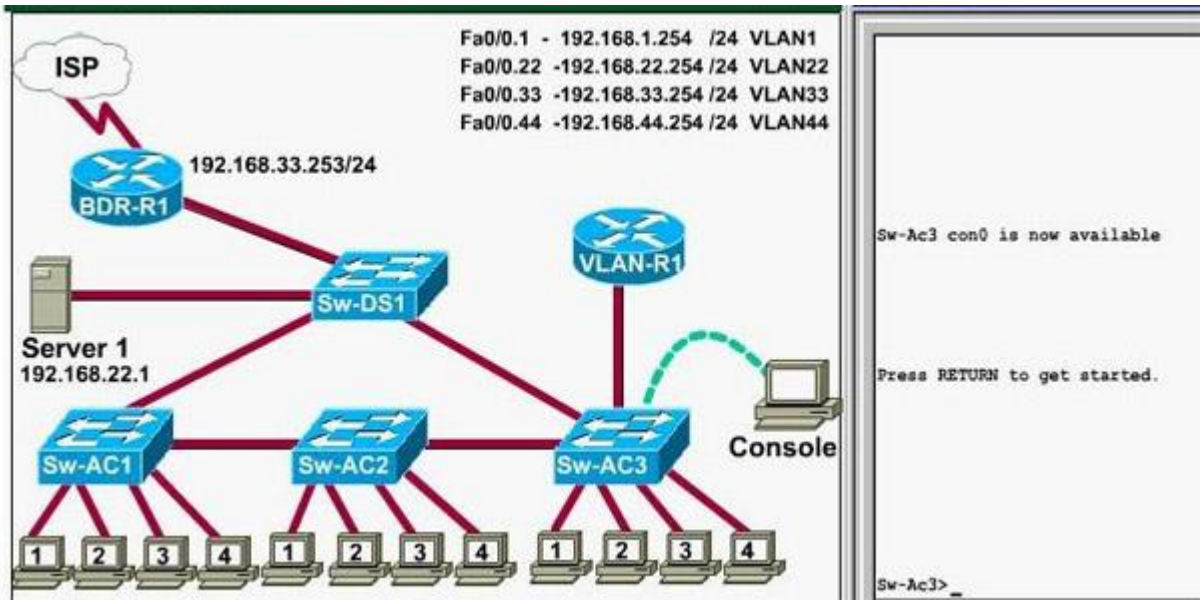
CCNA VTP SIM Question

http://www.9tut.com/80-ccna-vtp-sim-question

Question

This task requires you to use the CLI of Sw-AC3 to answer five multiple-choice questions. This does not require any configuration.

To answer the multiple-choice questions, click on the numbered boxes in the right panel.



There are five multiple-choice questions with this task. Be sure to answer all five questions before leaving this item.

Notice: All the images in this VTP LAB are used for demonstration only, you will see slightly different images in the real CCNA exam. You can download this sim to practice here (but notice that this sim is not perfect, only for practicing purpose):
http://www.9tut.com/download/9tut.com_CCNA_vtp_sim.pka

Note: In this VTP sim, you have to answer 5 questions. After answering the first question, click on the number boxes to move to other questions. If you click "Next" at the first question, you will lose points for 4 remaining questions.

Question 1

What interface did Sw-AC3 associate with source MAC address 0010.5a0c.ffba ?

a) Fa0/1

b) Fa0/3

c) Fa0/6

d) Fa0/8

e) Fa0/9

f) Fa0/12

Answer: Fa 0/8

Question 2

What ports on Sw-AC3 are operating has trunks (choose three)?

a) Fa0/1

b) Fa0/3

c) Fa0/4

d) Fa0/6

e) Fa0/9

f) Fa0/12

Answer: Fa0/3, Fa0/9 and Fa0/12

Question 3

What kind of router is VLAN-R1?

a) 1720

b) 1841

c) 2611

d) 2620

Answer: 2620

Question 4

Which switch is the root bridge for VLAN 1?

Answer: Sw-DS1

Question 5

What address should be configured as the default-gateway for the host connected to interface fa 0/4 of SW-Ac3?

Answer: 192.168.44.254

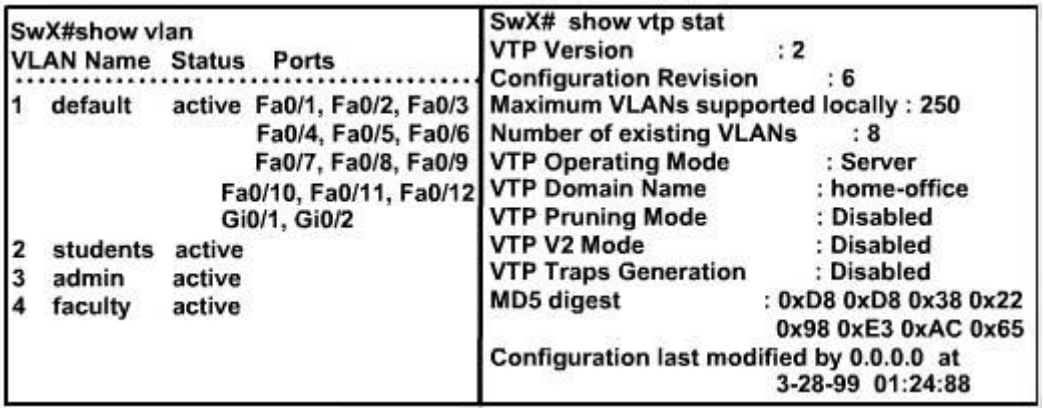
Question 6

From which switch did Sw-Ac3 receive VLAN information ?

Answer: Sw-AC2

Question 7

Refer to the exibit, SwX was taken out of the production network for maintenance. It will be reconnected to the Fa 0/16 port of Sw-Ac3. What happens to the network when it is reconnected and a trunk exists between the two switches?



A – All VLANs except the default VLAN will be removed from all switches

B – All existing switches will have the students, admin, faculty, Servers, Management, Production, and no-where VLANs

C – The VLANs Servers, Management, Production and no-where will replace the VLANs on SwX

D – The VLANs Servers, Management, Production and no-where will be removed from existing switches

Answer: D

Question 8

Out of which ports will a frame be forwarded that has source mac-address 0010.5a0c.fd86 and destination mac-address 000a.8a47.e612? (Choose three)

A – Fa0/8

B – Fa0/3

C – Fa0/1

D – Fa0/12

Answer: B C D

Question 9

If one of the host connected to Sw-AC3 wants to send something for the ip 190.0.2.5 (or any ip that is not on the same subnet) what will be the destination MAC address?

CCNA Access List Sim 2

http://www.9tut.com/78-ccna-access-list-sim-2

Question

Security is being added to the Corp1 router. The user on host C should be able to use a web browser to access financial information from the Finance Web Server. No other hosts from the LAN nor the Core should be able to use a web browser to access this server. Since there are multiple resources for the corporation at this location including other resources on the Finance Web Server, all other traffic should be allowed.

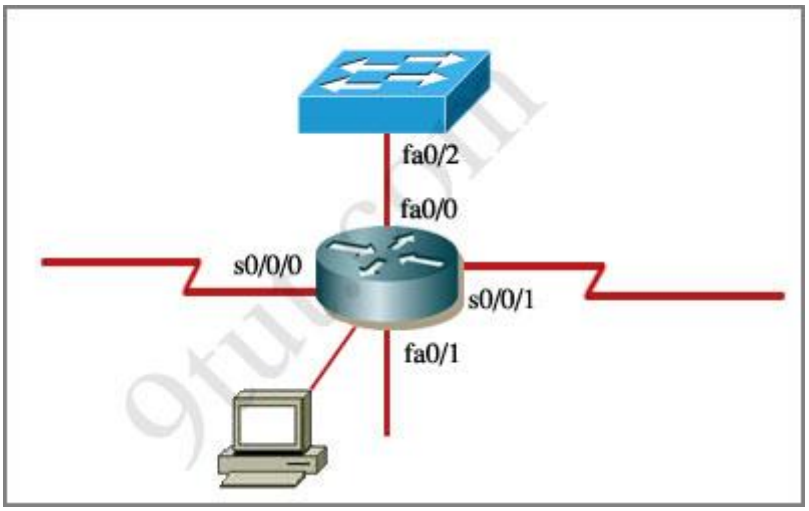
The task is to create and apply a numbered access-list with no more than three statements that will allow ONLY host C web access to the Finance Web Server. No other hosts will have web access to the Finance Web Server. All other traffic is permitted.
Access to the router CLI can be gained by clicking on the appropriate host.

All passwords have been temporarily set to “cisco”.
The Core connection uses an IP address of 198.18.196.65
The computers in the Hosts LAN have been assigned addresses of 192.168.33.1 – 192.168.33.254
Host A 192.168.33.1
Host B 192.168.33.2
Host C 192.168.33.3
Host D 192.168.33.4
The servers in the Server LAN have been assigned addresses of 172.22.242.17 – 172.22.242.30
The Finance Web Server is assigned an IP address of 172.22.242.23.
The Public Web Server is assigned an IP address of 172.22.242.17

CCNA Access List Sim

http://www.9tut.com/70-ccna-access-list-sim

Question



An administrator is trying to ping and telnet from Switch to Router with the results shown below:

Switch>
Switch> ping 10.4.4.3

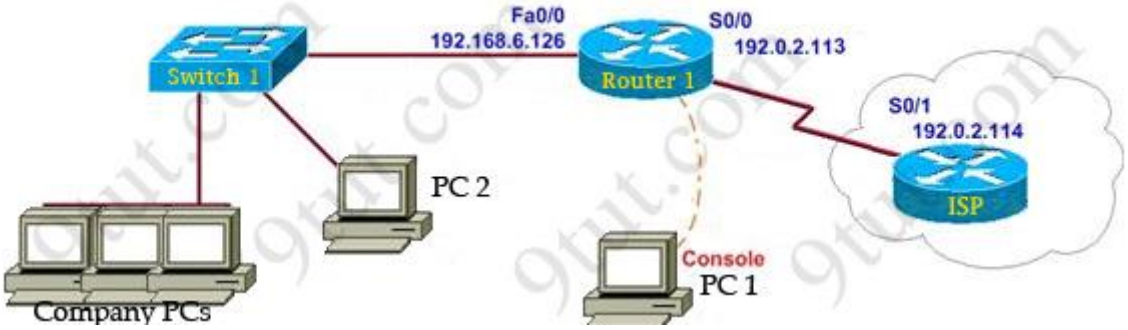
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.4.4.3,timeout is 2 seconds:
.U.U.U
Success rate is 0 percent (0/5)
Switch>
Switch> telnet 10.4.4.3
Trying 10.4.4.3 …
% Destination unreachable; gateway or host down
Switch>

Click the console connected to Router and issue the appropriate commands to answer the questions.

CCNA NAT SIM Question 2

http://www.9tut.com/57-ccna-nat-sim-question-2

Question



CCNA EIGRP LAB Question

http://www.9tut.com/64-ccna-eigrp-lab-question

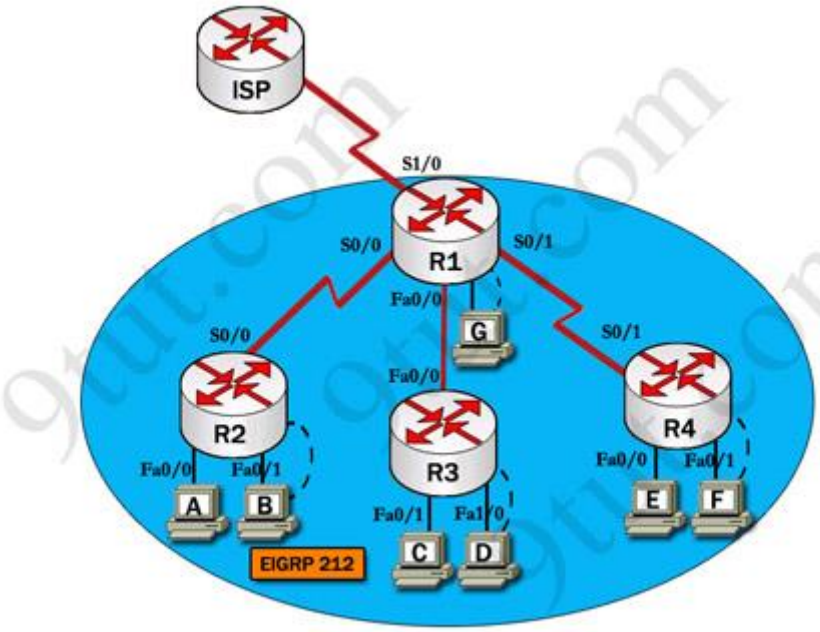
Question

After adding R3 router, no routing updates are being exchanged between R3 and the new location. All other inter connectivity and Internet access for the existing locations of the company are working properly.

The task is to identify the fault(s) and correct the router configuration to provide full connectivity between the routers.

Access to the router CLI can be gained by clicking on the appropriate host. All passwords on all routers are cisco.

IP addresses are listed in the chart below.



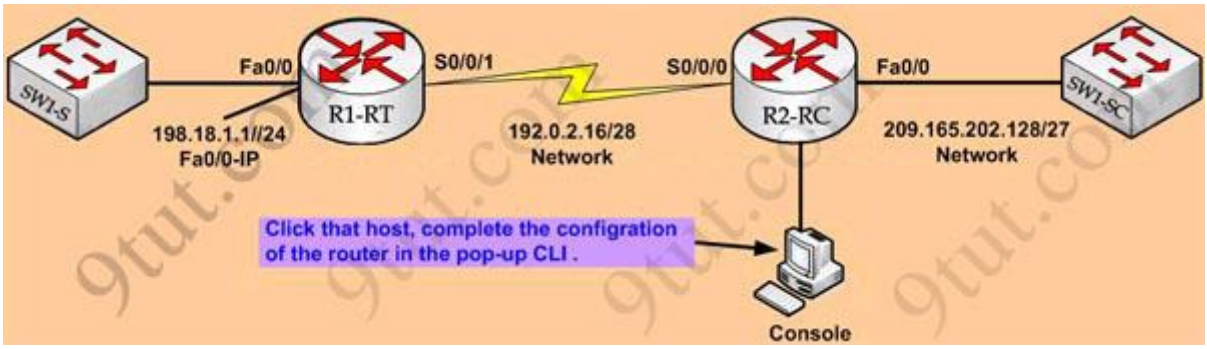
R1 **Fa0/0:** 192.168.77.33 **S1/0:** 198.0.18.6 **S0/1:** 192.168.60.25 **S0/0:** 192.168.36.13	**R2** **Fa0/0:** 192.168.60.97 **Fa0/1:** 192.168.60.113 **S0/0:** 192.168.36.14
R3 **Fa0/0:** 192.168.77.34 **Fa0/1:** 192.168.60.65 **Fa1/0:** 192.168.60.81	**R4** **Fa0/0:** 192.168.60.129 **Fa0/1:** 192.168.60.145 **S0/1:** 192.168.60.26

CCNA Configuration SIM Question

http://www.9tut.com/59-ccna-configuration-sim-question

Question

To configure the router (R2-RC) click on the console host icon that is connected to a router by a serial console cable (shown in the diagram as a dashed black line)



CCNA Training Company recently installed a new router in their office. Complete the network installation by performing the initial router configurations and configuring RIPV2 routing using the router command line interface (CLI) on the R2-RC.

Name of the router is **R2-RC**
Enable-secret password is **cisco1**
The password to access user EXEC mode using the console is **cisco2**
The password to allow telnet access to the router is **cisco3**
IPV4 addresses must be configured as follows:
Ethernet network **209.165.202.128/27** – router has last assignable host address in subnet
Serial network is **192.0.2.16/28** – router has last assignable host address in the subnet. Interfaces should be enabled.
Router protocol is **RIP V2**

Attention :
In practical examinations, please note the following, the actual information will prevail.
1. Name of the router is xxx
2. Enable-secret password is xxx
3. Password to access user EXEC mode using the console is xxx
4. The password to allow telnet access to the router is xxx
5. IP information

CCNA NAT SIM Question 1

http://www.9tut.com/52-ccna-nat-sim-question

Question

A network associate is configuring a router for the CCNA Training company to provide internet access. The ISP has provided the company six public IP addresses of 198.18.184.105 198.18.184.110. The company has 14 hosts that need to access the internet simultaneously. The hosts in the CCNA Training company LAN have been assigned private space addresses in the range of 192.168.100.17 – 192.168.100.30.

The task is to complete the NAT configuration using all IP addresses assigned by the ISP to provide Internet access for the hosts in the Weaver LAN. Functionality can be tested by clicking on the host provided for testing.

Configuration information
router name – Weaver
inside global addresses – 198.18.184.105 198.18.184.110/29
inside local addresses – 192.168.100.17 – 192.168.100.30/28
number of inside hosts – 14

The following have already been configured on the router：

– The basic router configuration

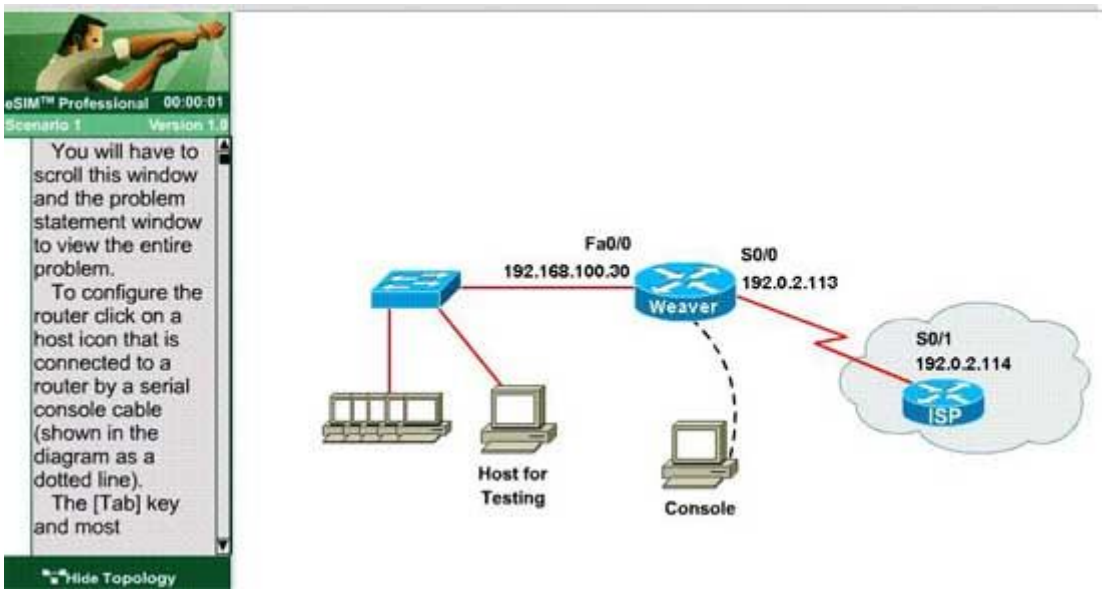
– The appropriate interfaces have been configured for NAT inside and NAT outside

– The appropriate static routes have also been configured (since the company will be a stub network, no routing protocol will be required.)

– All passwords have been temporarily set to “cisco”

The task is to complete the NAT configuration using all IP addresses assigned by the ISP to provide Internet access for the hosts in the Weaver LAN. Functionality can be tested by clicking on the host provided for testing.

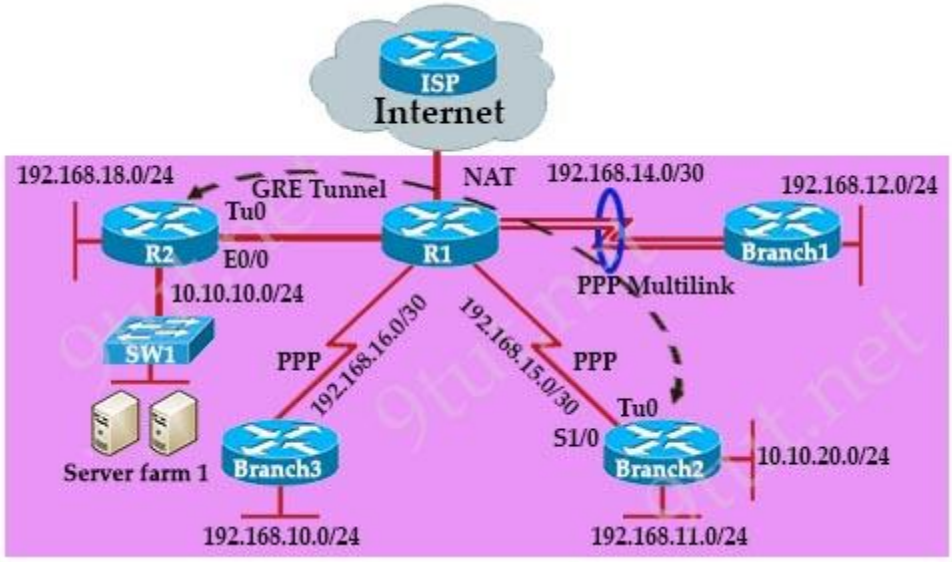
Configuration information
router name - Weaver
inside global addresses-198.18.184.105 198.18.184.110/29
inside local addresses - 192.168.100.17 - 192.168.100.30/28
number of inside hosts - 14



GRE Multilink Sim

http://www.9tut.com/gre-multilink-sim

Refer to the topology below and answer the following questions.



Question 1

Why is the Branch2 network 10.10.20.0/24 unable to communicate with the Server farm 1 network 10.10.10.0/24 over the GRE tunnel?

A. The GRE tunnel destination is not configured on the R2 router.
B. The GRE tunnel destination is not configured on the Branch2 router.
C. The static route points to the tunnel0 interface that is misconfigured on the Branch2 router.
D. The static route points to the tunnel0 interface that is misconfigured on the R2 router.

Answer: C

Question 2

Why has the Branch3 router lost connectivity with R1? Use only show commands to troubleshoot because usage of the debug command is restricted on the Branch3 and R1 routers?

A. A PPP chap hostname mismatch is noticed between Branch3 and R1.
B. A PPP chap password mismatch is noticed between Branch3 and R1.
C. PPP encapsulation is not configured on Branch3.
D. The PPP chap hostname and PPP chap password commands are missing on the Branch3 router.

Answer: A

Question 3

Which statement about the router configurations is correct?

A. PPP PAP is authentication configured between Branch2 and R1.
B. Tunnel keepalives are not configured for the tunnel0 interface on Branch2 and R2.
C. The Branch2 LAN network 192.168.11.0/24 is not advertised into the EIGRP network.
D. The Branch3 LAN network 192.168.10.0/24 is not advertised into the EIGRP network.
E. PPP CHAP is authentication configured between Branch1 and R1.

Answer: D

Question 4

Why did Branch1 router lose WAN connectivity with R1 router?

A. The IP address is misconfigured on PPP multilink interface on the Branch1 router.
B. The PPP multilink group is misconfigured on the Branch1 serial interfaces.
C. The PPP multilink group is misconfigured on the R1 serial interfaces.
D. The Branch1 serial interfaces are placed in a shutdown condition.

Answer: A

IPv6 OSPF Sim

http://www.9tut.com/ipv6-ospf-sim

Question

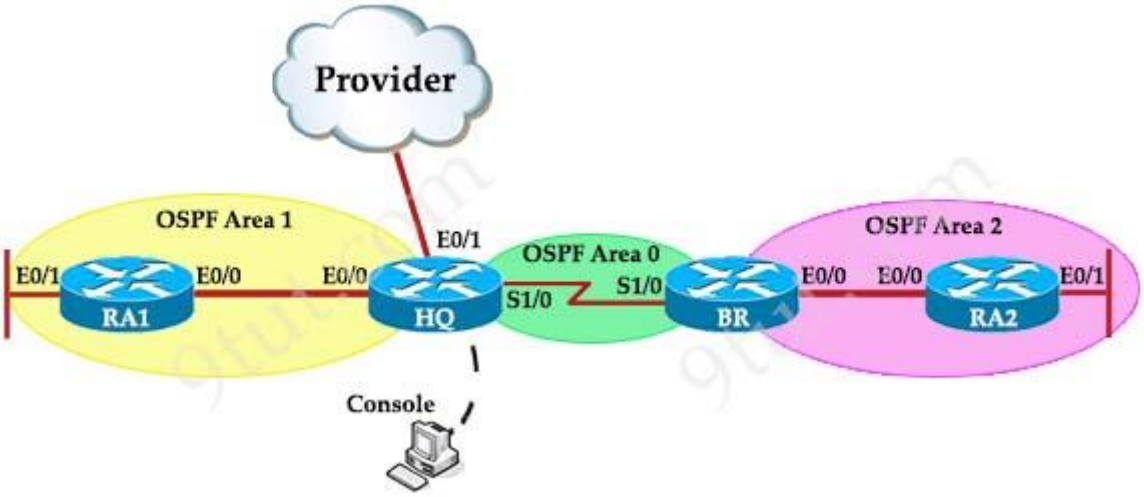
All routers are running IPv6 OSPF with process ID 100. The loopback0 IPv4 address is the OSPF router ID of each router.

On HQ router, a provider link is provided and you have to configure an IPv6 default route on HQ and make sure this route is advertised in IPv6 OSPF process. Also troubleshoot why HQ is not forming IPv6 OSPF neighbor with BR.

Requirements:

1. Configure IPv6 default route on HQ router with default gateway of 2001:DB8:B:B1B2::1
2. Verify by pinging provider test IPv6 address 2001:DB8:0:1111::1 after configuring default route on HQ
3. Make sure that the default route is advertised in IPv6 OSPF router HQ. This default route should be advertised only when HQ has a default route in its routing table
4. Router HQ is not forming IPv6 OSPF neighbor with BR. Troubleshoot and solve the problem

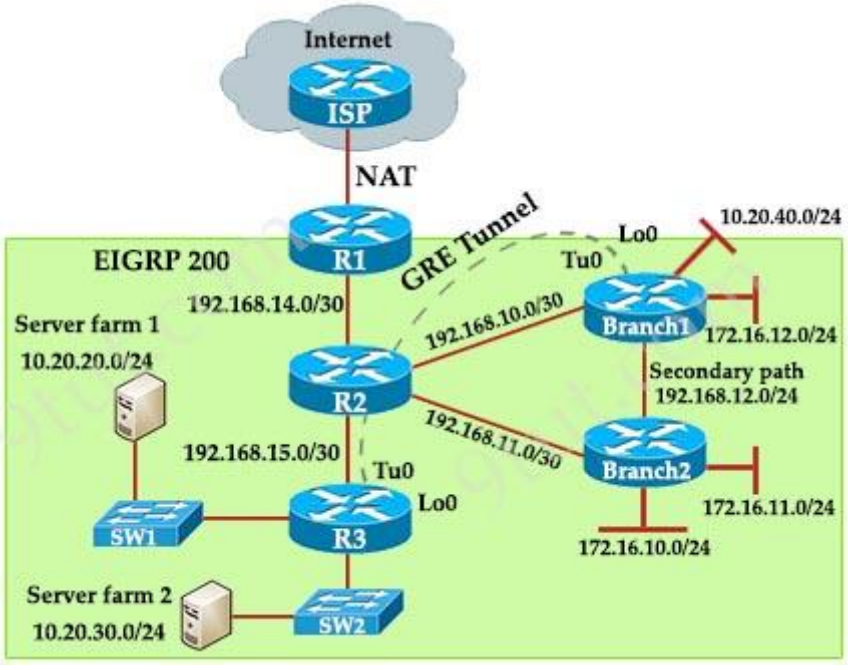
Special Note: To gain the maximum number of points, you must complete the necessary configurations and fix IPv6 OSPF neighbor issue with router BR IPv6 OSPFv3 must be configured without using address families. Do not change the IPv6 OSPF process ID.



EIGRP GRE Troubleshooting Sim

http://www.9tut.com/eigrp-gre-troubleshooting-sim

Refer to the topology below. Your company asks you to identify the issues in Phase 1 EIGRP implementation. You have console access on R1, R2, R3 Branch1 and Branch2 routers. Only use show commands to troubleshoot the issues.



Question 1

Examine the R1 routing table. None of the internal routes other than locally connected appear in the routing table. Which cause of the issue is true?

A. EIGRP neighbor relationship was not formed due to AS mismatch between routers R1 and R2
B. EIGRP neighbor relationship was not formed due to K values mismatch between routers R1 and

R2
C. EIGRP packets were blocked by the inbound ACL on R1
D. IP address was misconfigured between the R1 and R2 interface

Answer: D

Question 2

The traffic from Branch2 to the main office is using the secondary path instead of the primary path connected to R2. Which cause of the issue is true?

A. The network 192.168.11.0/30 was not advertised into EIGRP on Branch2
B. The IP address was misconfigured between the Branch2 and R2 interfaces
C. EIGRP packets were blocked by the inbound ACL on Branch2
D. The primary path has more link delay configured than secondary path which causes EIGRP to choose the secondary path

Answer: C

Question 3

The GRE tunnel between R3 and Branch1 is down. Which cause of the issue is true?

A. The tunnel source loopback0 interface is not advertised into EIGRP in Branch1
B. The tunnel source loopback0 interface is not advertised into EIGRP in R3
C. The EIGRP neighbor relationship was not formed due to EIGRP packets blocked by inbound ACL on R3
D. The EIGRP neighbor relationship was not formed due to the IP address being misconfigured between the R2 and R3 interfaces.

Answer: C

Question 4

You are verifying the EIGRP configurations in the topology. Which statement is true?

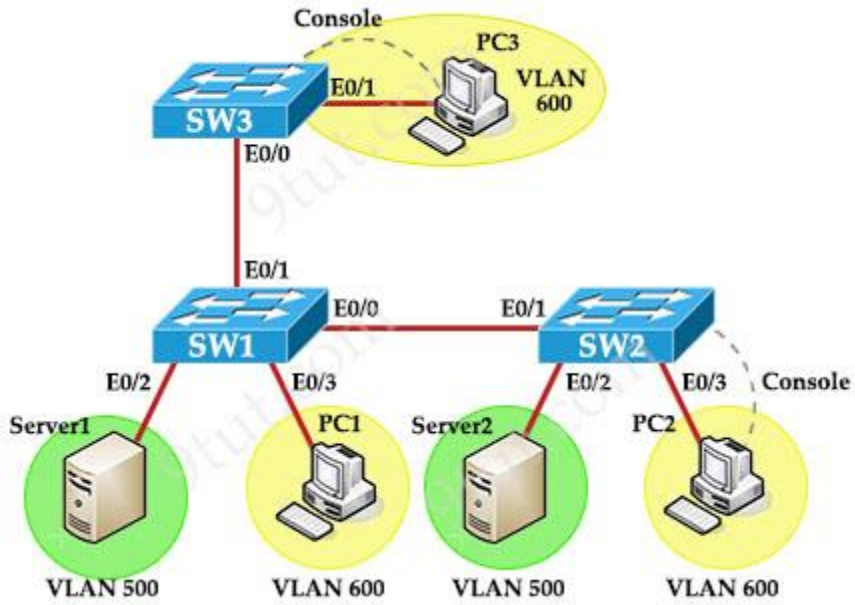
A. Branch2 LAN network 172.16.11.0/24 is not advertised into the EIGRP network
B. Branch2 LAN network 172.16.10.0/24 is not advertised into the EIGRP network
C. R3 server farm2 network 10.20.30.0/24 is not advertised into the EIGRP network
D. Branch1 LAN network 172.16.12.0/24 is not advertised into the EIGRP network

Answer: D

VLAN Troubleshooting Sim

http://www.9tut.com/vlan-troubleshooting-sim

Refer to the exhibit.



Your colleague has built a Layer 2 network in your client locations. You must verify the configuration and fix any issues identified as per customer requirements.
Customer requirements:
+ Verify if switch ports are assigned correct VLANs as shown in topology. Identify and fix any misconfiguration found in three switches
+ Verify if trunk links are operational between switches and the IEEE 802.1Q trunk encapsulation method is used. Identify and fix any misconfiguration found in trunk configuration
+ Make sure ports connected between switches are set as trunk ports

We are not sure about the details but here are the faults in this sim:

– Native VLAN mismatch between SW1 & SW3
– Switchport mode mismatch: one in access mode while the other end in trunk mode -> need to change from access to trunk mode
– One port in VLAN 500 while other port in VLAN 600

Recommended commands to solve this sim: show int trunk, show vlan, show run.

You can download and practice this sim with Packet Tracer at:
http://www.9tut.com/download/9tut.com_CCNA_VLAN_Troubleshooting_Sim.zip

Commands to fix the issues:

SW1, SW2:
interface e0/2

switchport mode access
switchport access vlan 500
interface e0/3
switchport mode access
switchport access vlan 600

SW3:
interface e0/0 (or interface e0/1 of SW1)
switchport trunk encapsulation dot1q
switchport mode trunk
switchport trunk native vlan … (must match the native VLAN on the other end, use "show int trunk" command on SW1 to check SW1 native VLAN)