Score for this quiz: **42** out of 50

Submitted Apr 22 at 8:03pm

This attempt took 29 minutes.

**Question 1**

**1 / 1 pts**

What Cisco IOS command is used to enable the use of IPv4 routing on a Cisco device?



ip routing

The Cisco IOS command ip routing is used to enable IPv4 routing on a Cisco device. On routers, it is enabled by default and thus does not display in the running-config. For switches, IP routing is disabled by default, so when it is enabled, it will be displayed in the running-config.



ip unicast-routing



ip routing enable



ip enable routing

**Question 2**

**1 / 1 pts**

Which interface status code type is generally used to display the Layer 2 status of an interface?



Line status



Interface status



Protocol status

On Cisco devices, two different types of interface status codes are used: line status (Layer 1) and protocol status (Layer 2).



MAC status

**Question 3**

**1 / 1 pts**

Which of the following is the correct next step in physically installing a router after the LAN cables are connected to LAN ports when using an external CSU/DSU?



Connect the router's serial interface to the CSU/DSU and the CSU/DSU line from the telco.

When an external CSU/DSU is used, the router's serial interface should be connected to the CSU/DSU and the CSU/DSU line from the telco in sequence after the LAN cables are connected.



Connect the router's serial interface to the line from telco.



Connect the router's console port to a PC to configure the router.



Connect a power cable from a power outlet to the power port on the router.

**Question 4**

**1 / 1 pts**

If an interface shows a status of Up/Down, what is the most likely cause of the problem to be investigated?



Physical line status



IP configuration



TCP/UDP configuration



Layer 2 configuration

The interface status Up/Down means that the interface's line state is up but its protocol state is down. Because the protocol state status code displays a status based on Layer 2, this should be the first place to look to correct the problem.

**Question 5**

**1 / 1 pts**

Which of the following does *not* apply to both Cisco switches and routers?



The device supports User and Enable modes.



The device allows configuration of the console, Telnet, and enabling secret passwords.



The device uses a VLAN to configure IP addresses.

Only a switch uses a VLAN to configure IP addresses. The rest of the items described are common to both switches and routers.



The device allows configuration of the hostname and interface description.

**Question 6**

**1 / 1 pts**

What name is used to refer to the piece of equipment that connects a router (serial interface) to a leased line provider?



CSU/DSU

The Channel Service Unit/Data Service Unit (CSU/DSU) is used to connect a router's serial interface to a leased line provider. In most modern equipment, the CSU/DSU is internal to the router on the line card.



Ethernet switch



Frame Relay switch



RTS/CTS

**Question 7**

**1 / 1 pts**

The CSU/DSU converts the Layer \_\_\_\_\_\_\_\_ standards between the telco and the serial interface.



2



3



1

The CSU/DSU is responsible for converting between the Layer 1 standards used by the telco to the Layer 1 standards used by the serial interface.



4

**Question 8**

**1 / 1 pts**

What Cisco IOS command is used to display the status information of the interfaces on a Cisco device, including IP address and mask information, in the briefest format possible?



show ip interface



show protocols

The Cisco IOS show protocols command can be used to display status information and IP address and mask information for the interfaces on a Cisco device. The show ip interface brief command shows similar information in a brief format but does not include mask information.



show ip interface brief



show interfaces

**Question 9**

**1 / 1 pts**

What type of route adds the host to the routing table of a Cisco device when the ip address command is issued on an interface with a state of up/up?



Local route

Two different routes are added to the routing table of a Cisco device when the ip address command is issued to an interface with a state of up/up. The connected route adds a route that includes the whole subnet for the configured address; the local route adds a host route that is specific to the single address configured (/32).



Connected route



Static route



Interface route

**IncorrectQuestion 10**

**0 / 1 pts**

Which of the following is the first step a LAN-based host takes when a destination is *not* local?



Find the destination host's MAC address.

The host must determine the MAC address of the default gateway before encapsulating the packet. The other options describe the steps for local destinations.



Encapsulate the IP packet in a data-link frame for the destination host.



Find the default gateway's MAC address.



Encapsulate the IP packet in a data-link frame for the default gateway.

**Question 11**

**1 / 1 pts**

As the network engineer, you are configuring the Fast Ethernet interface. You have issued the following command to the fa0/0 interface: ip address 200.16.24.1 255.255.255.0. Which of the following must be TRUE before the router can add this information to its routing table? (Select all that apply.)



The interface status codes for the interface must be in the Up and Up condition.

For a connected route to be inserted into the IPv4 routing table, the interface where the ip address command was issued must be in a fully operational state (up/up). The configuration of an interface with the shutdown command would prevent it from having this status.



The interface must be administratively turned off.



The interface must have the no shutdown command issued.

For a connected route to be inserted into the IPv4 routing table, the interface where the ip address command was issued must be in a fully operational state (up/up). The configuration of an interface with the shutdown command would prevent it from having this status.



The router must be able to communicate with its neighbor first.

**Question 12**

**1 / 1 pts**

What type of route adds the subnet to the routing table of a Cisco device when the ip address command is issued on an interface with a state of up/up?



Local route



Connected route

Two different routes are added to the routing table of a Cisco device when the ip address command is issued to an interface with a state of up/up. The connected route adds a route that includes the whole subnet for the configured address; the local route adds a host route that is specific to the single address configured (/32).



Static route



Interface route

**Question 13**

**1 / 1 pts**

When configuring a trunk between a router and a switch, which command must be configured on the switch to ensure that the trunk comes up?



switchport mode dynamic desirable



switchport mode dynamic auto



switchport mode access



switchport mode trunk

Routers do not support the Dynamic Trunking Protocol and, because of this, do not support dynamic trunking (dynamic desirable or auto). The only way to bring up a trunk between a router and a switch is by using the switchport mode trunk command.

**Question 14**

**1 / 1 pts**

What is the process of removing the Layer 2 header and trailer information to reveal the Layer 3 packet?



De-encapsulation

As each layer of header and footer is added to the data that is eventually transmitted at the physical layer, it is encapsulated with successive headers and footers. The removal of these headers and footers at each level is referred to as de-encapsulation.



Encapsulation



Encryption



Decryption

**IncorrectQuestion 15**

**0 / 1 pts**

Which conditions must be met for a router to process a frame? (Select all that apply.)



The frame isn't marked Discard Eligible.



The frame source address is the same as the local address (Layer 2).

Two conditions must be met for any device to process a frame (including routers): The frame must be free of errors (per any check mechanism; that is, FCS), and it must have a destination address (Layer 2) that matches the interface from which it was received.



The frame has no errors.

Two conditions must be met for any device to process a frame (including routers): The frame must be free of errors (per any check mechanism; that is, FCS), and it must have a destination address (Layer 2) that matches the interface from which it was received.



The frame destination address is the same as the local address (Layer 2).

**Question 16**

**1 / 1 pts**

Which Cisco IOS command is used to make memory space available for IPv4 routes on a 2960 series of switches?



sdm prefer lanbase-routing

The sdm prefer lanbase-routing command configures the Switching Database Manager (SDM) on a 2960 series switch to allocate memory space for IPv4 routes; the ip routing command can then be used (after reboot) to enable IPv4 routing.



sdm prefer ipv4-routing



ip routing



routing enable

**Question 17**

**1 / 1 pts**

Which Cisco IOS command is used to create a new SVI on a switch?



interface vlan *vlan-id*

The interface vlan *vlan-id*command is used to create/configure an SVI on a switch.



vlan *vlan-id*



switchport access vlan *vlan-id*



interface svi *vlan-id*

**Question 18**

**1 / 1 pts**

For a VLAN SVI to be in the up/up state, which option is *not* required?



The VLAN must be defined locally.



The VLAN must have an entry in the MAC address table.

There are a few requirements to ensure that a VLAN SVI will move into the up/up state; they include the VLAN must be configured and operational on the local switch, an access link or trunk must be configured into the VLAN or transporting traffic for the VLAN and not blocked or pruned, and the VLAN SVI interface must be enabled.



An access link or trunk must be configured and optional in the VLAN (not blocked or pruned).



The VLAN SVI must be enabled.

**Question 19**

**1 / 1 pts**

Which Cisco IOS command can be used to display the ROAS configuration on a router?



show roas



show vlan



show vlans

The show vlans command spells out which router trunk interfaces use which VLANS and which one is associated with the native VLAN.



show interfaces vlan

**Question 20**

**1 / 1 pts**

Which Cisco IOS command is used to enable a router subinterface with 802.1Q and associate it with a specific VLAN?



vlan *vlan-id*



encapsulation dot1q *vlan-id*

When configuring ROAS on a router, subinterfaces are used to separate out the traffic into different VLANs. To associate each of these subinterfaces with a specific VLAN, use the encapsulation dot1q *vlan-id*.



encapsulation vlan *vlan-id*



dot1q *vlan-id*

**Question 21**

**1 / 1 pts**

Which of the LAN routing options shown is *not* typically used?



Using a layer 3 switch using routed ports



Using a layer 3 switch using SVIs



Using a router configured with a VLAN trunk



Using a router with a physical interface associated with each individual VLAN

Four different methods are used to perform LAN routing: using a physical router interface per VLAN (almost never implemented), using a VLAN trunk (for example, 802.1Q), using a layer 3 switch and SVIs, and using a layer 3 switch using routed ports.

**Question 22**

**1 / 1 pts**

Which Cisco IOS command can be used on a switch to verify that an interface has been configured as a routed port by indicating that it is "routed"?



show interfaces



show interface *interface*switchport



show ip route



show interface status

The show interface status command will show that an interface has been configured as routed by displaying "routed" as its VLAN.

**Question 23**

**1 / 1 pts**

Which protocol does the ping command use to test connectivity?



ICMP

The ping command uses the Internet Control Message Protocol (ICMP) to test connectivity.



IPv6



TCP/IP



UPP

**Question 24**

**1 / 1 pts**

By default, how long does the Cisco IOS ping command wait for a reply before the command considers the message to be a failure (or timeout)?



5 seconds



2 seconds

By default, the Cisco IOS ping command will wait 2 seconds for a reply to an echo message before considering the message to be a failure.



1 seconds



10 seconds

**Question 25**

**1 / 1 pts**

Which of the following troubleshooting tools uses the TTL Exceeded messages to identify routers?



Ping



Telnet



SSH



Tracert

The tracert command sends messages with low TTL (Time to Live) values to make the routers send back a TTL extended message. These messages allow tracert to identify the routers.

**Question 26**

**1 / 1 pts**

An engineer has initiated the ping command from Cisco IOS. The command showed an output of five exclamation points (!!!!!). What does this tell the engineer?



Some of the messages received a reply, but others timed out.



None of the messages received a reply.



The syntax of the command was entered incorrectly.



All five echo messages received a reply.

When a Cisco IOS ping command displays an output of five exclamation points (!!!!!), this shows that all five of the echo messages that were sent received a reply.

**Question 27**

**1 / 1 pts**

Which command sends a packet that states "if you receive this packet, and it's addressed to you, please reply back"?



Nmap



Ping

The ping command sends a packet that states "if you receive this packet, and it's addressed to you, please reply back." This command is used to test connectivity.



Telnet



Tracert

**Question 28**

**1 / 1 pts**

An engineer initiated a Cisco IOS ping and received an output of two exclamation points, one period, followed by another two exclamation points (!!.!!). What does this output tell the engineer?



None of the echo messages received a reply.



The third echo message is the only one to receive a reply.



The third echo message timed out, but all the others received a reply.

In the Cisco IOS, a period represents a timed-out ping request and exclamation point represents a successful reply. Because the third character is a period, this means that the third echo message timed out while the others were successful.



All five of the echo messages received a reply.

**IncorrectQuestion 29**

**0 / 1 pts**

Review the following output of the ping command. What does this output tell us about 192.168.100.4?  
  
Text

Description automatically generated



The host is not reachable from this device.



The host is online, but not accessible from this device.



All packets successfully reached the host.



Some packets were able to reach the host, while others were dropped.

When a ping command returns with "Request timed out," that means that the host is not reachable from the device where the ping was initiated. No other information is known.

**Question 30**

**1 / 1 pts**

When a pair of OSPF neighbors has reached the \_\_\_\_\_\_\_\_ state, they can exchange their LSDB with each other.



Loading



Down



Init



2-way

When a device initially sees a neighbor, the OSPF state will transition to Init; when it sees its own RID in an updated LSDB packet, the OSPF state will transition to 2-way.

**Question 31**

**1 / 1 pts**

Which Cisco IOS command is used to display the current OSPF neighbors and their RIDs?



show ip ospf neighbor

The show ip ospf neighbor Cisco IOS command is used to display the current OSPF (v2-IPv4) neighbors of the local device.



show ospf neighbors



show interface ospf neighbors



show ip interface ospf neighbors

**Question 32**

**1 / 1 pts**

What is the administrative distance of OSPF routes?



90



110

The administrative distance of OSPF is 110, EIGRP is 90, RIP is 120, and IS-IS is 115.



120



115

**Question 33**

**1 / 1 pts**

A(n) \_\_\_\_\_\_\_\_ is a routing protocol that was designed and intended for use inside a single autonomous system.



IGP

An Interior Gateway Protocol (IGP) is a routing protocol that was designed and intended for use inside a single autonomous system.



EGP



BGP



IXR

**Question 34**

**1 / 1 pts**

What type of OSPF packet is used to list the LSAs that are known by a device?



DD

The exchange of known LSAs between two OSPF devices (if not neighbors yet) or neighbors is done with an OSPF Database Description (DD) packet.



LSU



LSR



LSA

**Question 35**

**1 / 1 pts**

Which components are used as part of EIGRP's default metric? (Select all that apply.)



Hop Count



Link Reliability



Bandwidth

By default, EIGRP uses a composite metric based on the minimum path bandwidth and the cumulative delays.



Delay

By default, EIGRP uses a composite metric based on the minimum path bandwidth and the cumulative delays.

**Question 36**

**1 / 1 pts**

Which routing protocols are *not* considered Distance Vector?



RIP



OSPF

RIP, IGRP, and EIGRP are all considered distance vector protocols (or advanced distance vector), while OSPF is a link state protocol.



EIGRP



IGRP

**Question 37**

**1 / 1 pts**

Which single OSPF network statement will correctly include all the interfaces on a device whose IP addresses only begin with a 10.10.8, 10.10.9, 10.10.10, or 10.10.11?



network 10.10.8.0 0.0.7.255 area 0



network 10.10.0.0 0.0.0.255 area 0



network 10.10.8.0 0.0.3.255 area 0

The concept of a wildcard mask often confuses those new to Cisco networking and should be practiced until it is clear how it works. For this example, 10.10.8.0 0.0.3.255 will include all interfaces on a device with IP addresses that begin with 10.10.8, 10.10.9, 10.10.10, and 10.10.11. The 0.0.3.255 address works out to a subnet mask of 255.255.252.0, so the subnet 10.10.8.0 255.255.252.0 would include these same address ranges. All you have to do is invert the subnet mask: 255.255.252.0 = 11111111 11111111 11111100 00000000 inverted = 00000000 00000000 000000111111111 = 0.0.3.255.



network 10.10.0.0 0.0.7.255 area 0

**Question 38**

**1 / 1 pts**

Which Cisco IOS command can be used to display whether an interface is configured as passive?



show ip ospf interface passive



show ip ospf interface brief



show ip ospf interface

The show ip ospf interface command can be used to display whether an interface is configured as passive. The show ip ospf interface brief command does not display this information.



show ip ospf passive

**Question 39**

**1 / 1 pts**

By default, what is the maximum number of equal-cost OSPF routes that will be inserted into the routing table?



4

By default, four different equal-cost OSPF routes will be inserted into the routing table. To change this default, use the maximum-paths command.



6



1



2

**Question 40**

**1 / 1 pts**

When viewing the Cisco IOS routing table with the show ip route command, what code is used to denote OSPF routes that are *not* within the local area?



E2



IA

The code IA (Interarea) is added to all those OSPF routes that are sourced by an area that is not local.



E1



E

**IncorrectQuestion 41**

**0 / 1 pts**

Which Cisco IOS command lists a group of messages for each IPv4 routing protocol running on a router?



show ip routing

The show ip protocols command is used to list a group of messages for each IPv4 routing protocol running on a router.



show ip protocols



show ip configuration



show ip route configuration

**Question 42**

**1 / 1 pts**

Which Cisco IOS command is used to prevent a configured OSPF interface from forming a neighborship with any potential neighbors?



passive-interface *interface*

The passive-interface command, when configured in OSPF router configuration mode, will disable a device from attempting to form a neighborship with any potential neighbor; but it doesn't prevent the IP network configured on the interface from being advertised.



ip ospf *process-id*passive



ip ospf *process-id*no-advertise



advertise *interface*disable

**IncorrectQuestion 43**

**0 / 1 pts**

Refer to the figure. Assuming what is shown is the extent of the OSPF configuration on a device, what is the RID of the local OSPF process?  
  
Table

Description automatically generated with medium confidence



10.10.10.1



172.16.1.2



172.16.1.1

Follow these rules to determine an OSPF router ID (RID):  
1. Use the RID specified in the router-id router configuration mode command.  
2. Use the highest numerically numbered loopback interface IP address.  
3. Use the highest numerically numbered *normal*interface IP address.



172.16.0.1

**Question 44**

**1 / 1 pts**

Routers often have a default MTU size of \_\_\_\_\_\_\_\_.



68



1356



1500

Routers often have a default MTU size of 1500, but this value can also be defined.



576

**Question 45**

**1 / 1 pts**

Which of the following is TRUE regarding the OSPF point-to-point network type? (Select all that apply.)



DR/BDR should be implemented when using the point-to-point network type.



There is no benefit to using DR/BDR when using the point-to-point network type.

Because there are at most two routers on the link, there is no benefit to configuring DR/BDR, and in some cases, it can actually add a little extra convergence time. The point-to-point network type exists for serial links and other point-to-point links, which do not support the ability to add a third router to the link.



The point-to-point network type exists for links that support 3 or more routers on the link (such as Ethernet).



The point-to-point network type exists for links that do not support the ability to add a third router to the link (such as serial links).

Because there are at most two routers on the link, there is no benefit to configuring DR/BDR, and in some cases, it can actually add a little extra convergence time. The point-to-point network type exists for serial links and other point-to-point links, which do not support the ability to add a third router to the link.

**IncorrectQuestion 46**

**0 / 1 pts**

Review the output from the show ip ospf interface brief command shown below. According to this output, how many routers is MyRouter full adjacent over its Gi0/1 interface?  
  
MyRouter# show ip ospf interface brief  
  




1

The first of the two numbers listed under the "Nbrs F/C" heading represents the number of fully adjacent neighbor, which is listed as 0 in this scenario.



24



0



5

**Question 47**

**1 / 1 pts**

Which value would you want to configure first, in order to influence DR/BDR election?



OSPF router ID



OSPF cost



OSPF network type



OSPF interface priority

The OSPF interface priority has values ranging from 0-255. The router with the highest OSPF interface priority wins; therefore, if you wanted to influence the election, you'd want to configure the router of your choosing with a higher OSPF interface priority.

**IncorrectQuestion 48**

**0 / 1 pts**

Which of the following statements regarding DR/BDR election is FALSE?



If the DR fails, the BDR becomes the DR, and a new BDR is elected.



If the DR fails, the BDR becomes the DR. However, if the original DR is brought back online, it resumes its role as DR.



When a better router enters the subnet, no preemption of the existing DR and BDR occurs.



OSPF DR/BDR election rules will not result in a specific router always being the DR, and another always being the BDR.

If the original DR router fails, other routers will become DR and BDR, and the best router will not be DR again until the current DR and BDR fail.

**IncorrectQuestion 49**

**0 / 1 pts**

If an engineer were configuring an older type of interface (i.e. not Ethernet) and would like to configure the interface to use the broadcast network type, which of the following interface subcommands would that engineer need to use?



config ospf ip network broadcast

In order to configure an older interface to use the broadcast network type, the Cisco IOS interface subcommand ip ospf network broadcast would be used.



ip ospf network broadcast



ip ospf network type broadcast



config ip ospf type network broadcast

**Question 50**

**1 / 1 pts**

An engineer is troubleshooting an OSPF neighbor relationship. He wants to ensure that hello and dead timers match, as a mismatch could prevent the routers from becoming neighbors. Which is the best Cisco IOS command to check the hello and dead timers?



show ip ospf



show ip ospf interface

The best command to check the hello and dead timers is show ip ospf interface.



show ip ospf interface brief



show interface brief

Quiz Score: **42** out of 50

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