Score for this quiz: **49** out of 50

Submitted Feb 25 at 5:21pm

This attempt took 31 minutes.

**Question 1**

**1 / 1 pts**

Which of the following is the most essential fact that allows the IEEE autonegotiation protocol to function?



Cisco meets the IEEE standard for the protocol.

**Correct!**



Wiring pinouts are common for 10BASE-T, 100BASE-T, and 1000BASE-T.

The IEEE autonegotiation protocol only works at a foundational level because the pinouts for the different speed standards are the same.



Any Ethernet device can sense the speed of a connection.



Cisco switch logic can determine speed and duplex for a connection.

**Question 2**

**1 / 1 pts**

If a Cisco Gigabit Ethernet port is connected to a device that does *not* support IEEE autonegotiation, and the interface speed cannot be sensed, what speed is the interface defaulted into?



1 Gbps

**Correct!**



10 Mbps

IEEE autonegotiation enables devices to communicate with each other to find the fast speed agreeable between each. If this feature is disabled, Cisco devices have an additional capability to sense port speed. If this is unsuccessful, the port defaults to the lowest speed the port supports, which is 10 Mbps.



100 Mbps



None; the port is shut down.

**Question 3**

**1 / 1 pts**

Which of the following will disable autonegotiation for an interface on a Cisco switch?



Setting the speed setting for the interface



Setting the duplex setting for the interface

**Correct!**



Setting both the speed and duplex settings for the interface

Autonegotiation is disabled only when both the speed and duplex are manually assigned.



Autonegotiation is disabled by default

**Question 4**

**1 / 1 pts**

Which of the following will occur if the speed setting cannot be sensed in a Cisco switch?



The speed will default to 1 Mbps.

**Correct!**



The speed will default to the lowest setting available.

If the speed cannot be sensed, it will default to the lowest setting, often 10 Mbps.



The speed will default to the highest speed available.



The speed will default to the setting reported from the other end of the interface.

**Question 5**

**1 / 1 pts**

What does it mean when an interface does *not* display configuration settings when using the show running-config and show startup-config commands?

**Correct!**



It means the configuration is running with default settings.

The lack of detail on an interface means it is running with the default configuration.



It means the interface is not active.



It means the interface is configured the same as the previous entry.



It means the interface is configured the same as the following entry.

**Question 6**

**1 / 1 pts**

What Cisco IOS command is used to display the current administrative and operational trunking modes of an interface?



show interfaces trunk



show trunk



show trunk switchport

**Correct!**



show interfaces *interface*switchport

The Cisco IOS show interfaces *interface*switchport command is used to display switchport information about a specific interface, including the administrative and operational trunking modes.

**Question 7**

**1 / 1 pts**

What Cisco IOS command is used to create a VLAN and enter into VLAN configuration mode?



interface vlan *vlan*

**Correct!**



vlan *vlan*

The Cisco IOS command used to create a VLAN and enter into VLAN configuration mode is the vlan *vlan*command. A VLAN also can be created by assigning a switchport into a VLAN that does not yet exist, which will then be automatically created; however, this will not place you into VLAN configuration mode.



vlan *name*



primary vlan *vlan*

**Question 8**

**1 / 1 pts**

Which command disallows the use of trunking mode on a port?



switchport mode trunk disable



switchport mode dynamic desirable

**Correct!**



switchport mode access

The switchport mode access command is used to force a switchport into being an access port, which effectively disables trunking.



switchport mode dynamic auto



switchport mode dynamic disable

**Question 9**

**1 / 1 pts**

Which Cisco IOS command is used on a trunking interface to disable VLAN 20 from being sent across the trunk?



switchport vlan remove 20

**Correct!**



switchport trunk allowed vlan remove 20

The Cisco IOS command switchport trunk allowed vlan provides the capability to add and remove specific VLANs that are not supported over a specific trunk. Operations include allow, all, except, none, and remove.



switchport trunk remove 20



switchport vlan trunk remove 20

**Question 10**

**1 / 1 pts**

When configuring a trunk between two switches, which dynamic trunking mode should be used to always trunk, as long as the trunking connection is initiated from the remote switch?



Dynamic active



Dynamic desirable

**Correct!**



Dynamic auto

When a trunk is configured into dynamic auto mode, it will not initiate a trunking connection but will set one up if initiated from the remote side. The other option is dynamic desirable mode. In this mode, the trunk will always attempt to initiate a trunking connection whenever the trunk becomes active.



Dynamic on

**Question 11**

**1 / 1 pts**

What is the name of the Cisco proprietary tool used to advertise VLANs between switches so that all switches are automatically configured with the same VLAN numbers?



STP



ISL



CDP

**Correct!**



VTP

The VLAN Trunking Protocol (VTP) is used to advertise and configure VLANs between Cisco switches; however, this functionality is not often used in large production networks in favor of better alternatives (for example, Layer 3 functionality between switches).

**Question 12**

**1 / 1 pts**

When configuring a trunk between two switches, which dynamic trunking mode should be used to always initiate a trunking connection?



Dynamic active

**Correct!**



Dynamic desirable

When a trunk is configured into dynamic desirable mode, it will always attempt to initiate a trunking connection whenever the trunk becomes active. The other option is dynamic auto mode. In this mode, the switch will not initiate a trunking connection but will set one up if initiated from the remote switch.



Dynamic auto



Dynamic on

**Question 13**

**1 / 1 pts**

How many bits within the IEEE 802.1Q tag are used to identify the VLAN of the frame?



16



8



48

**Correct!**



12

The IEEE 802.1Q tag is 4 bytes in length. Of these 4 bytes, only 12 bits are used to identify the VLAN ID of the specific frame.

**Question 14**

**1 / 1 pts**

What is the name of the process that is defined by IEEE 802.1Q to relay traffic from multiple VLANs?



VLAN staging



Broadcast forwarding



Switchport mode access

**Correct!**



VLAN tagging

When the IEEE 802.1Q standard is used for trunking, a "tag" is added to the traffic passing over the trunk that enables each frame to be identified into a specific VLAN.

**Question 15**

**1 / 1 pts**

What Cisco IOS command is used to assign a specific access VLAN onto a switchport?



switchport vlan *vlan*



vlan *vlan*

**Correct!**



switchport access vlan *vlan*

The Cisco IOS switchport access vlan *vlan*command is used to assign a specific access VLAN to a switchport.



switchport vlan *vlan*access

**Question 16**

**1 / 1 pts**

\_\_\_\_\_\_\_\_ combines multiple parallel segments of equal speed between the same pair of switches.



LACP



Load balancing



STP

**Correct!**



EtherChannel

EtherChannel (and IEEE 802.3ad, its standardized cousin) provides a method of combining multiple Ethernet connections between a set of switches so they are considered a single virtual interface. This capability is useful when utilizing only Layer 2 connectivity between switches that run STP.

**Question 17**

**1 / 1 pts**

What default STP timer length is used for both the listening and learning states?



5 seconds



20 seconds

**Correct!**



15 seconds

By default, the STP forward delay timer (used for the listening and learning states) is 15 seconds for each state.



2 seconds

**Question 18**

**1 / 1 pts**

The switch that has the lowest STP cost will become the \_\_\_\_\_\_\_\_ switch for a specific segment.



Root

**Correct!**



Designated

The switch with the lowest STP root cost (STP cost) on a specific segment will become the primary forwarder of traffic (the primary path to the segment). This switch is referred to as the designated switch for that specific LAN segment. This label is shown on the switchport that connects to the LAN segment being labeled as the designated port.



Primary



Forwarding

**Question 19**

**1 / 1 pts**

The only switch on a LAN that has all designated interfaces is the \_\_\_\_\_\_\_\_ switch.

**Correct!**



Root

The only switch on a LAN that has all designated interfaces is the root switch, because the root switch will always have the lowest STP cost to itself.



Main



Primary



Forwarding

**Question 20**

**1 / 1 pts**

What is the default IEEE STP port cost for a 100 Mbps Ethernet interface?



10



100



4

**Correct!**



19

The default IEEE STP port cost for a 100 Mbps Ethernet interface is 19.

**Question 21**

**1 / 1 pts**

Diagram

Description automatically generated  
  
Refer to the figure. Based on the STP port costs shown, which of S4's interfaces will become the root port?



2

**Correct!**



3

Even though it would seem to make sense to use the shortest path (1 link), the shortest STP path is through S4's interface 3.



1



None

**Question 22**

**1 / 1 pts**

The STP root switch is the switch with the lowest numeric value for the \_\_\_\_\_\_\_\_.



Cost



Primary ID



Router ID

**Correct!**



Bridge ID

The STP root is elected by looking at the bridge IDs (BID) of all participating switches and selecting the one with the lowest BID. In practice, this ends up being the switch with the lowest STP priority; in a tie, the primary MAC address of the switches is used.

**Question 23**

**1 / 1 pts**

In what STP state does a port drop all received user traffic and not transmit user traffic but still listen for updated BPDUs?



Dropping



Listening

**Correct!**



Blocking

The four main states of IEEE 802.1D STP are blocking, listening, learning, and forwarding. In the blocking state, an interface does nothing with user traffic, including dropping all received traffic; however, it does listen to management BPDU traffic for changes in network topology.



Learning

**Question 24**

**1 / 1 pts**

The \_\_\_\_\_\_\_\_ feature enables a switch to transition a switchport from blocking to forwarding state quickly by bypassing the listening and learning states.

**Correct!**



PortFast

The Cisco PortFast feature can be enabled on access interfaces that connect to segments that will never contain connections to other switches, which connect back to the switched network. The reason is that PortFast bypasses the STP listening and learning states, which STP uses to determine the ports that should be blocked to prevent switching loops.



BPDU Guard



FastPass



Host mode

**Question 25**

**1 / 1 pts**

What is the name of the field in the STP hello BPDU that contains the bridge ID of the switch that the sender of the BPDU believes is the root switch?



Designated bridge ID



STP primary ID

**Correct!**



Root bridge ID

The root bridge ID field in the STP hello BPDU contains the bridge ID for the switch that the sender of the BPDU believes is the root switch. This is not always true because every switch initially assumes it is the root switch until the network converges.



STP core ID

**Question 26**

**1 / 1 pts**

An engineer needs to define the load distribution method as the source IP address. Which command could this engineer use?



port-channel load-balance dst-ip



port-channel load-balance ip-src



port-channel load-balance src-dst-ip

**Correct!**



port-channel load-balance src-ip

The configuration keyword for source IP address is src-ip.

**Question 27**

**1 / 1 pts**

An engineer wants to define the load distribution method as the source MAC address. Which command should the engineer use?

**Correct!**



port-channel load-balance src-mac

The load distribution method is defined with the port-channel load-balance *method* global command. The configuration keyword for source mac address is src-mac.



load-balance port-channel src-mac



port-channel load-balance mac-add



load-balance port-channel mac-add

**Question 28**

**1 / 1 pts**

Which Cisco IOS command would enable a manual EtherChannel on a specific physical interface using group number 10?



channel-group 10 mode auto



channel-group 10 mode manual



channel-group 10 mode active

**Correct!**



channel-group 10 mode on

When an EtherChannel is configured, the mode that is selected dictates the way in which the EtherChannel will operate. When the on mode is used, the EtherChannel is manually configured and does not use PAgP or LACP.

**Question 29**

**1 / 1 pts**

Which command on a Cisco Catalyst switch tells the switch which type of STP to use?

**Correct!**



Spanning-tree mode

The command spanning-tree mode is used on the Cisco Catalyst switches to tell the switches which type of STP to use.



STP mode



Spanning-tree config



STP config

**Question 30**

**1 / 1 pts**

Which of the following sends one set of BPDUs in the network, regardless of the number of VLANs?



RPVST



RPVST+



RSTP10+

**Correct!**



RSTP

RSTP only sends one set of RSTP messages (BPDUs) in the network, regardless of the number of VLANs, while RPVST+ sends one set of messages per VLAN.

**Question 31**

**1 / 1 pts**

You need to subnet a network that has 5 subnets, each with at least 16 hosts. Which subnet mask would you use?



255.255.255.192

**Correct!**



255.255.255.224

The correct answer is 255.255.255.224 because the only mask that would fit the requirements of 5 subnets and 16 hosts is /27, or 225.255.255.224, which provides 8 subnets and 30 hosts per subnet.



255.255.255.240



255.255.255.248

**Question 32**

**1 / 1 pts**

As the network engineer, you are asked to design an IP subnet plan that calls for 100 subnets. The largest subnet needs a minimum of 350 hosts. Management requires that a single mask must be used throughout the Class B network. Which of the following is a public IP network and mask that would meet the requirements?

**Correct!**



177.133.0.0 / 255.255.254.0

The correct answer is 177.133.0.0 / 255.255.254.0 because the only mask that would fit the requirements of 100 subnets and 350 hosts is 255.255.254.0, or /23, which would give you 128 subnets and 510 hosts per subnet.



177.133.0.0 / 255.255.252.0



177.133.0.0 / 255.255.248.0



177.133.0.0 / 255.255.240.0

**Question 33**

**1 / 1 pts**

As the network engineer, you are asked to design an IP subnet plan that calls for 12 subnets. The largest subnet needs a minimum of 12 hosts. Management requires that a single mask must be used throughout the Class C network. Which of the following is a public IP network and mask that would meet the requirements?



216.122.44.0 /25



216.122.44.0 /26



216.122.44.0 /27

**Correct!**



216.122.44.0 /28

The correct answer is 216.122.44.0 /28 because the only mask that would fit the requirements of 12 subnets and 16 hosts is /28, or 255.255.255.240, which would give you 16 subnets and 14 hosts per subnet.

**Question 34**

**1 / 1 pts**

As the network engineer, you are asked to design a plan for an IP subnet that calls for 25 subnets. The largest subnet needs a minimum of 750 hosts. Management requires that a single mask must be used throughout the Class B network. Which of the following lists a private IP network and mask that would meet the requirements?



172.16.0.0 / 255.255.192.0



172.16.0.0 / 255.255.224.0

**Correct!**



177.16.0.0 / 255.255.248.0

The correct answer is 177.16.0.0 / 255.255.248.0 because the only mask that would fit the requirements of 25 subnets and 750 hosts is 225.255.248.0, or /21, which would give you 32 subnets and 2046 hosts per subnet.



172.16.0.0 / 255.255.254.0

**Question 35**

**1 / 1 pts**

You have the network 192.168.10.0/24. How many subnets and hosts are available?



1 subnet with 10 hosts

**Correct!**



1 subnet with 254 hosts

The network 192.168.10.0/24 is not subnetted and provides for a single network with 254 (28 - 2) available host addresses.



192 subnets with 10 hosts



254 subnets with 254 hosts

**Question 36**

**1 / 1 pts**

As the network engineer, you are asked to design an IP subnet plan that calls for 5 subnets. The largest subnet needs 25 hosts. Management requires that a single mask must be used throughout the Class C network. Which of the following is a public IP network and mask that would meet the requirements?



192.177.4.0 / 255.255.255.192

**Correct!**



192.177.4.0 / 255.255.255.224

The correct answer is 192.177.4.0 / 255.255.255.224 because the only mask that would fit the requirements of 5 subnets and 25 hosts is 255.255.255.224, or /27, which would give you 8 subnets and 30 hosts per subnet.



192.177.4.0 / 255.255.255.240



192.177.4.0 / 255.255.255.248

**Question 37**

**1 / 1 pts**

How many subnets and hosts are provided by the network 192.168.254.0/26?



4 networks with 64 hosts

**Correct!**



4 networks with 62 hosts

The network 192.168.254.0/26 provides 2 subnet bits (22 = 4 subnets) and 6 host bits (26 - 2 = 62 hosts).



254 networks with 62 hosts



2 network with 62 hosts

**Question 38**

**1 / 1 pts**

You have a Class B network and need 29 subnets. What is your mask?



/30



/25



/24

**Correct!**



/21

To get at least 29 subnets, you must have at least 5 subnet bits (25 = 32). When you use a Class B network, the subnet bits would start at the 17th bit and go to the 21st bit (16 + 5 bits = 21) for a mask of /21, or 255.255.248.0.

**Question 39**

**1 / 1 pts**

You need to subnet a class C network that has 5 subnets, each with at least 16 hosts. Which classful subnet mask would you use?



255.255.255.192

**Correct!**



255.255.255.224

The 255.255.255.224, or /27 mask, provides 3 subnet bits (23 = 8) and 5 host bits (25 - 2 = 30).



255.255.255.240



255.255.255.248

**Question 40**

**1 / 1 pts**

What valid host range is the IP address 172.16.10.22 255.255.255.240 a part of?



172.16.10.20 through 172.16.10.22



172.16.10.1 through 172.16.10.255



172.16.10.16 through 172.16.10.23



172.16.10.17 through 172.16.10.31

**Correct!**



172.16.10.17 through 172.16.10.30

The IP address 172.16.10.22 is part of the 172.16.10.16/28 network, which includes a host range from 172.16.10.17 through 172.16.10.30.

**Question 41**

**1 / 1 pts**

If you wanted to have 12 subnets with a Class C network ID, which subnet mask would you use?



255.255.255.252



255.255.255.248

**Correct!**



255.255.255.240

The 255.255.255.240 or /28 mask provides for 4 subnet bits and 4 host bits, providing a total of 16 available subnets. The next lowest mask, 255.255.255.224 or /27, will provide 3 subnet bits and 5 host bits, providing only 8 available subnets.



255.255.255.254

**Question 42**

**1 / 1 pts**

Your boss has asked you to tell him how many usable subnets and hosts a Class C network with the IP address and mask of 192.168.10.0/28 can have. How should you respond?



16 subnets and 16 hosts

**Correct!**



16 subnets and 14 hosts

The correct answer is 16 subnets and 14 hosts because after converting the /28 to DDN, you find the value of 16 and, using the formula 2n= S (for subnets), get the number 16. For hosts, the equation is the same, but you must subtract 2 (2n - 2 = H).



30 subnets and 6 hosts



62 subnets and 2 hosts

**Question 43**

**0 / 1 pts**

To test the IP stack on your local host, which IP address would you ping?

**You Answered**



127.0.0.0

The correct answer is 127.0.0.1 because it is the reserved IP loopback address.



1.0.0.127

**Correct Answer**



127.0.0.1



255.0.0.0



255.255.255.255

**Question 44**

**1 / 1 pts**

Given the IP address 200.1.1.130 and the mask 255.255.255.224, what is the subnet number?



200.1.1.32



200.1.1.64



200.1.1.96

**Correct!**



200.1.1.128

The 255.255.255.224 mask provides 3 subnet bits (23 = 8) and 5 host bits (25 - 2 = 30). For the 200.1.1.0 network, the subnet number using this mask would be 200.1.1.0, 200.1.1.32, 200.1.1.64, 200.1.1.96, 200.1.1.128, and so on, up to 255. The IP address 200.1.1.130 is part of the 200.1.1.128 network, which has a range from 200.1.1.129 through 200.1.1.158.

**Question 45**

**1 / 1 pts**

You need to configure a server that is on the subnet 192.168.19.24/29. The router has the first available host address. Which of the following should you assign to the server if it is to be issued the next available address?



192.168.19.0 / 255.255.255.0

**Correct!**



192.168.19.26 / 255.255.255.248

The /29, or 255.255.255.248, subnet mask provides 5 subnet bits (25 = 32) and 3 host bits (23 - 2 = 6). The 192.168.19.24/29 network has a network address of 192.168.19.24 and a broadcast address of 192.168.1.31 with the addresses in between being the available host addresses starting at 192.168.19.25. Because the router is assigned the first address, the second address available is 192.168.19.26/29.



192.168.19.31 / 255.255.255.248



192.168.19.34 / 255.255.255.240

**Question 46**

**1 / 1 pts**

Which of the following would be the correct network classification for a network with a first octet value between 192 and 223?



Class A



Class B

**Correct!**



Class C

Class C networks with a first octet value of 192–223 are for small network unicast.



Class D



Class E

**Question 47**

**1 / 1 pts**

What is the broadcast address of 192.168.192.10/29?



192.168.192.255

**Correct!**



192.168.192.15

The /29, or 255.255.255.248, subnet mask provides 5 subnet bits (25 = 32) and 3 host bits (23 - 2 = 6). The 192.168.192.10 address has a network address of 192.168.192.8 and a broadcast address of 192.168.1.15.



192.168.192.31



192.168.192.7

**Question 48**

**1 / 1 pts**

What is the maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask?



14



15



16

**Correct!**



30

The subnet mask 255.255.255.224, or /27, provides 3 subnet bits (23 = 8) and 5 host bits (25 - 2 = 30).



31

**Question 49**

**1 / 1 pts**

Which of the following would be the correct network classification for large network unicast addresses?

**Correct!**



Class A

Class A networks with a first octet value of 1–126 are for large network unicast.



Class B



Class C



Class D



Class E

**Question 50**

**1 / 1 pts**

Which of the following would be the correct network classification with an equal number of octets in the network part and host part?



Class A

**Correct!**



Class B

Class B networks split the network address in half between the host part and network part.



Class C



Class D



Class E