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QUESTION NO 1
Selecting VTP version 2 instead of VTP version 1 is preferable because VTP version 2 _____

A. Supports Token Ring VLANs.
B. Saves VLAN Configuration memory.
C. Reduces broadcast traffic carried on trunk lines.
D. Reduces the amount of configuration necessary.
E. Allows active redundant links when used with spanning tree.

Answer: A.
Explanation: VTP version 1 is the default VTP in a management domain. You might need to implement VTP version 2 if you need some of the specific features that VTP version 2 offers that VTP version 1 does not offer. The most common feature that is needed is Token Ring VLAN support. Other support features include: unrecognized Type-Length- Value (TLV) support, version dependent transparent mode, consistency checks, token ring environment and version number propagation.

QUESTION NO 2
What does VLAN trunking protocol (VTP) do?

A. Propagates global VLAN information.
B. Sets trunk priority levels of adjacent switches.
C. Ensures that there is a trunk or VLAN 1 operating.
D. Adjusts VLAN interswitch links to reduce parallel load sharing.
E. Maps the non contiguous switch fabric across the global VLAN.

Answer: A.
Explanation: VTP is a Layer 2 messaging protocol that maintains VLAN configuration consistency by managing the addition, deletion, and renaming of VLANs on a network-wide basis.

QUESTION NO 3
An Ethernet Media trunk line is to be configured to operate in ISL mode between two Cisco Switches, each having identical modules, software revisions and VLAN configuration information. Which two are not required for the trunk to operate in ISL mode correctly? (Choose two)

A. Identical speed at each end of the link
B. Identical duplex at each end of the link
C. Identical native VLAN parameter at each end of the link

D. Identical Trunk negotiation parameter at each end of the link
E. Identical Trunk encapsulation parameter at each end of the link
F. Compatible Trunking mode shared by the ports connecting the links at either end.

Answer: C and D
Explanation: There are a number of factors that are required for a VLAN trunk to operate in ISL mode correctly.
C: You can choose any VLAN number that feels good because they are only locally significant to the router. However, we usually like to choose the VLAN number for ease of administration.
D: The Trunk negation parameter does not have to be identical.

Incorrect Answers
Speed, duplex, and trunk encapsulation have to be identical. The trunk modes have to be compatible.

QUESTION NO 4
You are configuring a VLAN trunk for fast Ethernet. Which trunking mode makes the port willing to convert the link into a trunk link?

A. Auto
B. Negotiate
C. Designate
D. Nonegotiate

Answer: A.
Explanation: Fast Ethernet has a number of trunking modes. The auto trunking mode makes the port willing to convert the link to a trunk line.

QUESTION NO 5
You have configured a Catalyst switch to operate in a VTP mode. On your switch you cannot create, change or delete VLANs.
Which VTP mode is your switch in?

A. Host
B. Native
C. Client
D. Server

Answer: C.
Explanation: In the client VTP mode VTP client behave the same way as VTP servers, but cannot create, change, or delete VLANs on a VTP client.

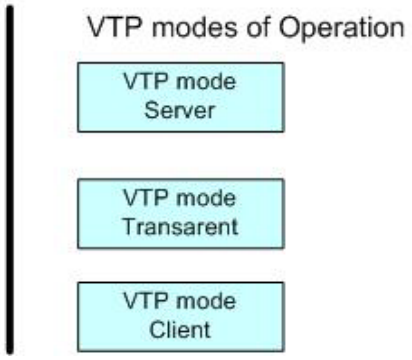
QUESTION NO 6
You have several VLAN trunks in your Auto and off modes. You are entering a new port. Which mode must you want the port to be in permanent trunking mode? (Choose two)

A. On
B. Off
C. Auto
D. Desirable
E. No negotiate

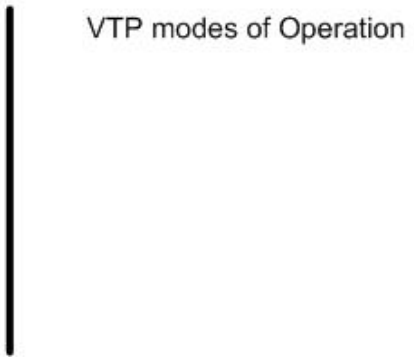
Answer: A and E.
Explanation: Both on and the no negotiate modes will put a port into permanent trunking mode. With no negotiate mode the neighboring port must be manually configured.

QUESTION NO 7
Given the VTP mode table, place the VTP mode in the correct location at the top of the table.

VTP modes of Operation			
Can they update other VTP capable devices or by default	NO	YES	YES
Do they care about VTP advertisements	NO	YES	YES
Can you preserve the global VLANs on reboot	Sometimes	YES	NO



Answer:



VTP modes of Operation	VTP mode Transarent	VTP mode Server	VTP mode Client
Can they update other VTP capable devices or by default	NO	YES	YES
Do they care about VTP advertisements	NO	YES	YES
Can you preserve the global VLANs on reboot	Sometimes	YES	NO

Explanation: VTP server mode is the most comprehensive VTP mode. Client mode is a close second with the only difference is that VTP clients cannot create, change, or delete VLANs on a VTP client, and Transparent mode does not participate in VTP.

QUESTION NO 8
You are configuring a VLAN on fast Ethernet. Which two trunking modes make the port able to convert the link to trunk link? (Choose two)

A. Off
B. Auto
C. Desirable
D. Negotiate
E. Nonegotiate

Answer: B and C.
Explanation: Both Desirable and Auto modes to convert links to trunk link. Desirable mode does this conversion actively and auto the port is willing to convert.

QUESTION NO 9
An Ethernet media trunk link is configured and is operating between two Cisco switches. Each switch has identical module, software revisions and VLAN configuration information. Spanning-Tree Protocol is disabled on all VLANs. Problems have been identified regarding frames leaking between two VLANs. What is the most likely cause of this problem?

A. The duplex mode is different at each switch.
B. The link is using IEEE 802.1Q protocol in point to point mode.

C. The link is using 802.10 trunk protocol, with the SAID parameters incorrectly set.
D. The link is using ISL protocol and the native VLAN information is different at each end of the link.
E. The link is using IEEE 802.1Q protocol and the native VLAN information is different at the each end of the link.

Answer: E
Explanation: The most likely reasons for frames leaking between two VLANs is that the link is using IEEE 802.1Q protocol and the native VLAN information is different at the each end of the link.

QUESTION NO 10
You need to enter a switch into and existing VTP domain without altering the configurations of the systems currently on the domain. Which two conditions ensure that the new switch will not change the existing VTP Domain configuration? (Choose two)

A. The switch must be in client mode.
B. The trunk links must not be configured for ISL
C. The VTP domain must not have a password assigned to it.
D. The clear config all command must be executed on the switch and be rebooted.

Answer: A and D.
Explanation: Whenever you enter a switch into an existing VTP and do not it to effect the configuration of systems on the domain, this switch should have the clear config all command executed and then rebooted. Finally the switch should be put into the client mode.

QUESTION NO 11
An Ethernet media trunk link is to be configured between two Cisco switches each having identical module, software revisions and VLAN configuration information. Which two are required for the trunk to operate? (Choose two)

A. The link is 100MB/s or slower.
B. The link uses IEEE 802.1Q trunk protocol.
C. The link must be point to point if it is ISL.
D. The link must have different trunk encapsulation at each end.
E. The link may use IEEE802.1Q trunk protocol, providing the SAID parameter is correct set.

Answer: B and C.

Explanation:
B: The IEEE 802.1Q trunk protocol can be used.
C: ISL operates in a **point**-to-**point** environment

For a trunk to operate it require a protocol, such as IEEE 802.1Q, and SAID parameters must be set properly.

Incorrect Answers
A: There is no speed 100Mb/s speed limit.
D: This is incorrect.
E: Cisco implements VLANs over FDDI medium using 802.10 encapsulation. This encapsulation adds a tag (SAID) to the frames. SAID is not used by the IEEE 802.1Q protocol.

QUESTION NO 12
Which statement best describes a trunk link?

A. The trunk link belongs to a specific VLAN.
B. A trunk link only supports a native VLAN for a given port.
C. Trunk links use 802.10 to identify VLAN over an Ethernet backbone.
D. Trunk links are used to connect multiple devices on a single subnet to a switch port.
E. The native VLAN of the trunk link is the VLAN that the trunk uses if that link fails for any reason.

Answer: E.
Explanation: A trunk link can have a native VLAN. The trunk's native VLAN is the VLAN that the trunk uses if the trunk link fails for any reason.

QUESTION NO 13
You are troubleshooting problems on the Catalyst 5000 trunk and you notice that there is a disagreement about the VLAN configured to use the trunk. What can you do?

A. Remove all the VLANs set for the trunk.
B. Reload the active VLAN configuration settings.
C. First clear the affected port and then bring it back up.
D. Explicitly set or clear the trunk for the VLAN to be on.
E. Set or clear VLANs on both sides of the link so values do not match.

Answer: D.

Explanation: To ensure that there is agreement in the VLAN configuration you should explicitly set or clear the trunk for the VLAN to be on.

QUESTION NO 14
When checking that the switch and router are consistently configured for VLANs, Cisco engineers typically recommend that VLAN ID 1 _____

A. Has a maximum transmission unit of 4352.
B. Be configured for concurrent routing and bridging.
C. Be used for management and troubleshooting only.
D. Uses and ID that is identical to the default SAID value.
E. Spans a network diameter of no more than eight devices.

Answer: C
Explanation: It is recommended that VLAN 1 be reserved for administrative purposes: management and troubleshooting.

QUESTION NO 15
By default, the Catalyst switch software sends error messages to the console terminal. Enter the command you would use to check for error messages if they are redirected to another destination.

Answer: show logging
Explanation: The show logging command can be used to display the system message log configuration.

QUESTION NO 16
What does it mean when LEDs flash during the Catalyst 5000 power up-sequence?

A. One or more modules is not correctly inserted in to its slot.
B. The power-up sequence is underway and not yet completed.
C. One or more fan, power supply, or supervisor clock is disabled.
D. The network management autodiscovery process is under way.
E. The traffic testing process of an interface loopback has not yet completed.

Answer: B.

Explanation: When LEDs flash during power up it indicates that power up is underway and not yet completed.

QUESTION NO 17
For an indicator of an active link state on a Catalyst port, you should look at the _____

A. Port's link Led on the Switching Module.
B. Port Link OK LED on the Link Integrity Module.
C. Status LED on the network Management Module.
D. Solid green LED on the port's Route Switch Module.
E. Switch link load LED on the Supervisor Engine Module.

Answer: A.
Explanation: The quickest way to confirm if a Catalyst port is active or not is to look at the Port's link LED.

QUESTION NO 18
What command must you use to enable CGMP on router interface?

A. Ip cgmp
B. Pip cgmp
C. Ip pip cgmp
D. Interface cgmp

Answer: A.
Explanation: To enable CGMP, enter the ip cgmp command in the interface command mode.

QUESTION NO 19
In order for the CGMP to operate correctly on a switch, the switch must have a network connection to a _____

A. Switch running IGMP
B. Router running CGMP
C. Switch running CGMP
D. Switch that has VLAN configured

Answer: B.
Explanation: In order for CGMP to operate correctly on a switch, the switch must have a network connection to a router running CGMP. A CGMP-capable IP multicast router detects all ICMP packets and informs the switch when specific hosts join or leave IP multicast groups.

QUESTION NO 20
Which command is used to disable CGMP on a set command based switch?

A. Disable cgmp
B. Set cgmp off
C. Shutdown cgmp
D. Set cgmp disable

Answer: D.
Explanation: To disable CGMP on a switch, enter the set cgmp disable command.

QUESTION NO 21
You are preparing to install a UTP cable connection. You should have no more than _____

A. Five meters from the switch to the patch panel.
B. Ninety meters from the punch down block to the switch.
C. Ten meters from the punch down block to the desktop connection.
D. Fifty-five meters from the patch panel to the office punch down block.

Answer: A.
Explanation: Most cable installers recommend that the 100-meter rule be followed when installing UTP cable connections. The 100-meter rule is broken further down. One of these distances is five meters from the switch to the patch panel.

QUESTION NO 22
To configure the fast Ethernet connection between your access switch and primary distribution switch, which two steps are highly recommended? (Choose two)

A. Set the port speed on your access switch.
B. Assign an IP address to your access switch.

C. Set the port speed on your primary distribution switch.
D. Set the port duplex on the primary FE mod/port on your access switch.

Answer: A and D.
Explanation: In order to configure a fast Ethernet connection between your access switch and the primary distribution switch that you must first set the port speed on the access switch and then you must set the port duplex on the primary FE mod/port on your access switch.

QUESTION NO 23
When setting the duplex on a Catalyst 1900 series switch backup link, the auto argument _____ (Choose two)?

A. Is only valid on 10baseT port.
B. Is the default for the 100baseTX port.
C. Negotiates full duplex connectivity with the connecting device.
D. Places a 100baseTX port into full duplex mode with flow control.

Answer: B and C.
Explanation: When the line mode of the Catalyst 100 is set auto it negotiates full duplex connectivity with the connecting device. Please note default line mode for the 100BaseTX is auto.

QUESTION NO 24
You have connected a cable between a Catalyst 1900 and 5000 series switch. When correctly connected, the port status LED light located on _____.

A. Both switches should NOT light up.
B. Both switches should light up and remain on.
C. Both switches should stay lit for 60 seconds, and then turn off.
D. The catalyst 1900 lights up for 30 seconds, then turns off, and the catalyst 5000 port status LED stays lit.
E. The catalyst 5000 lights up for 30 seconds, then turns off, and the catalyst 1900 port status LED stays lit.

Answer: B.

Explanation: The port status LEDs area good way to troubleshoot a switch. When a switch boots up the LEDs will flash green. After this if everything is working correctly the LEDS should remain a solid green on both switches.

QUESTION NO 25
Your IS manager has assigned you to configure a backup link on an IOS-based command switch. Which command must you use to configure the interface/port for full duplex?

A. Duplex
B. Duplex full
C. Full duplex
D. Duplex auto
E. Port duplex full

Answer: B.
Explanation: The command that should be used is set port duplex full. This will achieve the desired effect.

QUESTION NO 26
Which two does Ethernet LAN switching use? (Choose two)

A. MPOA
B. IEEE 802.10
C. IEEE 802.1D
D. Multicast OSPF
E. Spanning-Tree Protocol

Answer: C and E.
Explanation: IEEE 802.1D is the standard for STP. STP is used to prevent loops.

QUESTION NO 27
You have a link between the distribution and core switches that is configured for autonegotiation. To ensure the most efficient connection, which duplex mode would you select?

A. Half
B. Full

C. Auto
D. Full-flow-control

Answer: B.
Explanation: When auto negotiation is configured it is best to set the duplex to Full. This will lead to less amount of effort for the switch and more efficient use of resource.

QUESTION NO 28
You have a set-based switch. Which command do you enter to assign an IP address an interface?

A. IP address
B. Set IP address
C. Set interface sc0
D. Interface ethernet

Answer: C.
Explanation: If a switch is set-based, you assign the IP address to the in-band logical mode. In privilege mode you will need to enter the set interface sc0 command.

QUESTION NO 29
You want to use hardware-based bridging to switch between Ethernet and Fast Ethernet, and you need to increase the network bandwidth. However, you do not want to make an expensive network overly complicated.
Which ISO layer is associated with these functions?

A. Sessions
B. Network
C. Data link
D. Physical
E. Transport
F. Application
G. Presentation

Answer: C.
Explanation: Hardware based bridging is Layer 2 switching. Layer 2 of the OSI model is the Data Link.

QUESTION NO 30
Which switch command is required to configure a functional Ethernet connection between an end-user station and the access layer switch?

A. IP address
B. Enable access
C. Interface ethernet
D. Configuration ethernet
E. None

Answer: E.
Explanation: No command is required to connect an end user station to an access layer switch.

QUESTION NO 31
What are two solutions for carrying VLANs over a single link? (Choose two)

A. ISL
B. IGRP
C. CGMP
D. 802.1Q

Answer: A and D.
Explanation: The ISL protocol is a way to multiplex VLANs over a trunk link through the use of an encapsulation around the frame. IEEE 820.1Q, also known as the Standard for Virtual Bridge Local-Area Networks, has the ability to carry the traffic of more than one subnet down a single cable.

QUESTION NO 32
Which statement accurately describes the condition of VTP before you can assign ports to VLAN 1 on a switch?

A. VTP configuration does not affect this action.
B. VTP is configured and the mode on this switch is client.
C. VTP is configured and the mode on this switch is server.
D. VTP domain name has not been configured on this switch.
E. VTP is configured and the mode on this switch is transparent.

Answer: A.
Explanation: VLAN 1 port assignments have no effect on the Configuration of VTP. Switches can either be connected statically (ports) or dynamically (MAC address). Therefore ports need not to be assigned.

QUESTION NO 33
Before you can modify one of the VLAN names on a switch, the VTP domain name ____. (Choose two)

A. Must not be configured on this switch.
B. Is configured and the mode on this switch is client.
C. Is configured and the mode on this switch is server.
D. Is configured and the mode on this switch is transparent.

Answer: C and D.
Explanation: To make changes to a VTP mode should be either Server or Transparent mode. Both of these modes allow you to modify VLANs.

QUESTION NO 34
You have several separate VLANs that you want to interconnect. Which type device allows connection between VLANs?

A. Core-switch
B. IP translator
C. Route processor
D. VLAN interswitch
E. Switching engine

Answer: C.
Explanation: Inter-VLAN routing occurs at the distribution layer. The distribution layer is a combination of high-end switches and route processors.

QUESTION NO 35
To ensure that an internal route processor can forward traffic from multiple VLANs, you must first_____.

A. Define a default gateway on the RSM.
B. Assign the interface to a VTP domain.
C. Configure a unique VLAN number on each interface.
D. Define the ISL encapsulation type and number on each interface.

Answer: C.
Explanation: As VLANs are controlled at the route processor level, you must configure specify a VLAN interface. This is done in the global configuration mode with the interface command. The interface command is used to assign a VLAN interface number.

QUESTION NO 36
In a switch internetwork, which two situations would cause broadcast traffic to be contained within the physical segment? (Choose two)

A. Host interface is constantly sending IGMP requests.
B. Host interface is constantly sending frame fragments.
C. Host interface is constantly sending IP echo requests.
D. Host interface is constantly sending broadcast frames.
E. Host interface is constantly sending frames with CRC errors.

Answer: B and E.
Explanation: In a switch internetwork broadcast traffic will be contained within the physical segment when host interface is constantly sending frame fragments or host interface is constantly sending frames with CRC errors.

QUESTION NO 37
How many global Mac addresses does the RSM have that apply to interfaces on that device?

A. 1
B. 16
C. 256
D. 1024

Answer: A.
Explanation: A RSM has only one global MAC address that it can apply to its interfaces.

QUESTION NO 38
You have an IOS-based command switch that you want to define as a gateway. Which command do you use in global configuration mode to configure the switch?

A. set ip route
B. ip default route
C. ip default-gateway
D. set default-gateway

Answer: C.
Explanation: To define a gateway on a Cisco IOS-based series switch, enter the ip default-gateway command in the global configuration mode.

QUESTION NO 39
With VLAN routing, a switched VLAN corresponds to a (n) ____.

A. Bridge group.
B. Media interface.
C. ISL trunk interface.
D. Single routed subnet.
E. Spanning-tree branch.

Answer: D.
Explanation: A VLAN consists of several end systems, either hosts or network equipment (such as switches and routers), all of which are members of a single logical broadcast domain. A VLAN no longer has physical proximity constraints for the broadcast domain. This VLAN is supported on various pieces of network equipment (for example, LAN switches) that support VLAN trunking protocols between them.
A single routed subnet corresponds to the logical broadcast domain.

Reference: Designing Switched LAN Internetworks
http://www.cisco.com/univercd/cc/td/doc/cisintwk/idg4/nd2012.htm

QUESTION NO 40

A company has redesigned its campus network to support three switch blocks that broadcast domains to each individual switch block, while still allowing interVLAN routing within and between switch block. What is the most appropriate device at the distribution layer?

A. Catalyst 8500 series switch.
B. Catalyst 4000 series switch.
C. Catalyst 5000 series switch with an internal RSM.
D. Catalyst 1900 with a two-port 100Base uplink module.

Answer: C.
Explanation: Catalyst 5000 series of switch is ideal for connecting three-switch block. The Catalyst 5500 has 11 slots on which RSM can be installed.

QUESTION NO 41
The engineering department wants to Interconnect users on multiple floors in the same building. To date, the department has only ten users but plans to double that number in the next eight months. The engineers need to access CAD/CAM documents on the workgroup servers.
What is the most appropriate access layer device?

A. Catalyst 8500 series switch.
B. Catalyst 5500 series switch.
C. Catalyst 1900 series switch with 100BaseTX ports.
D. Catalyst 2900 series switch with 100Base TX ports.

Answer: D.
Explanation: The Catalyst 2900 series switch is effective in providing network access to server clusters or end user populations of less than 50 users that have high bandwidth requirements such as CAD/CAM applications.

QUESTION NO 42
The Multilayer Switch Module (MSM) is viewed as an external router connected to four full-duplex Gigabit Ethernet interfaces by the catalyst _____ series switch. (Choose Two)

A. 4000
B. 5500
C. 6000
D. 8500
E. C2926G

Answer: C
Explanation: A number of switches can provide Multilayer switching. One type of switch is a Catalyst 6000 with a Multilayer Switch Module (MSM). The MSM connects to the switching bus through four full-duplex Gigabit Ethernet interfaces..

QUESTION NO 43
A company has experienced 300 percent growth over the last year and has recently installed a new multimedia center for distributing company information throughout the campus. The company has requirements for gigabit-speed data transfer, high-availability, and interVLAN routing between the end user and the enterprise server farms.
What is the most appropriate device for the distribution layer?

A. Catalyst 8500 series switch.
B. Catalyst 1900 series switch with 12 10BaseT ports.
C. Catalyst 4000 series switch with 6-port gigabit ethernet module.
D. Catalyst 6000 series switch with 16-port gigabit ethernet module.

Answer: D.
Explanation: The Catalyst 6000 switch are effective at the distribution level, where users require very high densities of Fast or Gigabit Ethernet.

QUESTION NO 44
A company has a small network with about 25 users. They need to connect individual desktops and 10BaseT hubs to high-speed distribution switches that can work in conjunction with a 7x00 series external router.
Which combination of hardware meets the minimum requirements of the network at this company?

A. A catalyst 1900 series switch and a 2926G switch.
B. A 2926 switch and a catalyst 8500 series switch.
C. A catalyst 4000 series switch and a catalyst 6500series switch.
D. A catalyst 1900 series switch and a catalyst 8500series switch.

Answer: A.
Explanation: The combination of the Catalyst 1900 and 2926G switch would be ideal to meet the minimum requirements of the network described above.

QUESTION NO 45
Click the exhibit button.
The multicast IP address 224.64.255.45 translates to which MAC address?

A. 01-00-5E-28-FF-2D
B. 01-00-5E-40-FF-2D
C. 01-00-5E-40-FF-45
D. 01-00-5E-C0-FF-2D
E. 01-00-5E-C0-FF-45

Answer: B.
Explanation: The MAC address for 244.64.255.45 is 01-00-5E-40-FF-2D.

QUESTION NO 46
In which transmission method are frames replicated as needed?

A. Unicast
B. Multicast
C. Simulcast
D. Broadcast

Answer: A.
Explanation: Unicast traffic requires separate transmission for very receiver. As a result, frames are replicated as needed.

QUESTION NO 47
IGMP query messages are addresses to all-host group with the TTL set to one (1). What is the purpose of setting the TTL to one (1)?

A. All multicast routers see IGMP query messages.
B. All multicast routers forward IGMP query messages.
C. IGMP query messages are flooded throughout the switch block.
D. IGMP query messages remain on the directly attached subnetwork

Answer: D.
Explanation: Time to Live (TTL) thresholds can be used to restrict multicasts. TTL has a number of preset TTL thresholds, which have their associated scope. TTL value of 1 restricts multicast message (which ICMP is one) to the same subnet. A router does not forward them.

QUESTION NO 48
Which statement about multicast transmission is true?

A. One copy of each packet is sent to every client.
B. A new packet is sent each time the client requests it.
C. Only one copy of each packet is sent, using an address that reaches all the clients.
D. One copy of each packet is sent, using a special address that allows each client to choose if they receive the packet.

Answer: D.
Explanation: A multicast server sends out a single data stream to multiple clients and the client devices decide whether or not to listen to the multicast address.

QUESTION NO 49
Drag the transmission method and drop it on the correct definition.

Transmission Method	Definition
	A single data stream is sent to many clients, and the client decides whether or not to listen to the address.
	One copy of each packet is sent, using a special address that allows it to reach all clients.
	One copy of each packet is sent to each client.

Transmission Method

Unicast

Multicast

Broadcast

Answer:

Transmission Method	Definition
Multicast	A single data stream is sent to many clients, and the client decides whether or not to listen to the address.
Broadcast	One copy of each packet is sent, using a special address that allows it to reach all clients.
Unicast	One copy of each packet is sent to each client.

Transmission Method

QUESTION NO 50
You are in the process of creating a flow mask. You have created an extended access list. Which command applies it to the interface?

A. Group add
B. IP access-group
C. Access extended list
D. Interface extended list

Answer: B.
Explanation: An access list can be applied to an interface in order to keep data traffic from either entering or leaving an interface. You apply an access list to the interface using the command ip access-group.

QUESTION NO 51
You need to configure your distribution layer switching engine to participate in multilayerswitching. Which command must you use?

A. Set mls on
B. Set mls start
C. Set mls se IP
D. Set mls enable

Answer: D.
Explanation: To enable a switch to partipate in Layer 3 switching you use the set mls enable command in EXEC mode.

QUESTION NO 52
You are using multilayer switching and you need to configure your distribution layer route processor to participate in multilayer switching. Which is the first global command you should use to configure the MLS-RP?

A. Mls rp IP
B. Mls enable
C. Mls run start
D. Mls rp vtp-domain

Answer: A.
Explanation: To enable MLS on the route processor, while in the global configuration mode you must enter the msl rp ip command.

QUESTION NO 53
Which command displays the MLS cache?

A. Show mls
B. Show mls rp
C. Show mls list
D. Show mls entry

Answer: D.
Explanation: To display the MLS cache enteries, enter the following command in priviledge EXEC mode: show mlc entry.

QUESTION NO 54
Applying an outgoing access list to an interface_____.

A. Results in no action taken by the MLS-SE.
B. Generates an MLSP messages from the MLS-RP to the MLS-SE.
C. Purges any entries for flows on that interface and records no new entries.
D. Records enable packets only if the administrator sets the mls rp IP acl command on the interface
E. Causes the MLS-SE to retain the MLS cache entries until they age out and no longer record any new entries.

Answer: C.
Explanation: Applying an outgoing access list to an interface purges any entries from flows on the interface and records no new entries.

QUESTION NO 55
Which command enables an RSM interface for multilayerswitching?

A. Mls on
B. Mls rp IP
C. Set mls start
D. Set mls enable

Answer: B.
Explanation: Before you can configure multilayerswitching for a specific VLAN or interface, you must globally enable the MLSP that operates between the switch and the router. This is done with the mls r pip command.

QUESTION NO 56
Multilayer switching is based on the _____ model.

A. "switch once, route many"
B. "route once, switch many"
C. "switch only Layer 3 and below"
D. "route when you can, switch when you must"
E. "switch on Layer 3 frames, route on Layer 2 packets"

Answer: B.
Explanation: Multilayer switching is based on the "route once, switch many" model.

QUESTION NO 57
Which command would you use if you want to observe the spanning-tree port state (e.g disable, blocking, listening, forwarding) on a set command-based switch?

A. Show port
B. Show span
C. Show spantree
D. Show config spanning
E. Show spanning-tree port

Answer: C.
Explanation: The show spantree provides a great detail of information. It provides information on the elected root bridge (with MAC addresses and priority), other bridge information, and what state each port is in.

QUESTION NO 58
Once the failure of the forwarding link is detected, which functionality allows a block port of a switch to quickly begin forwarding?

A. Portfast
B. UplinkFast
C. BacknoneFast
D. SwitchlinkFast

Answer: B.
Explanation: UplinkFast allows a blocked port on a switch to almost immediately begin forwarding when it detects the failure of the forwarding link. UplinkFast must have direct knowledge of the link failure in order to move a blocked port into a forwarding state.

QUESTION NO 59
Which modification can be made to Spanning-Tree Protocol to improve Spanning-Tree Protocol operations as the network grows?

A. Properly place the root bridge to ensure an optimal STP topology.
B. Provide for efficient workstation access through the use of BackboneFast.
C. Load balance on redundant link through the use of technologies like BackboneFast.
D. Configure access switched as root bridges to ensure optimal workstation access to the network.
E. Improve the convergence time of spanning tree during a network reconfiguration tree during a network reconfiguration by decreasing the forward delay timers.

Answer: A.

Explanation: In order to improve that STP operation functions properly as the networks grows it is imperative that you properly place the root bridge to ensure an optimal STP topology.

QUESTION NO 60
How can you reduce spanning-tree protocol BPDU traffic during extended periods of instability for VLANs?

A. Make the router the root bridge.
B. Change the router to VTP server mode.
C. Set forward delay and max-age timers to maximum values.
D. Combine all the VLAN spanning trees into a single spanning tree.
E. Change the spanning-tree protocol encapsulation from IEEE to DEC.

Answer: C.
Explanation: During extended periods of instability for VLANs to reduce BPDU traffic by setting the forward delay and max age to their maximum values. This forces ports to wait for the correct topology information.

QUESTION NO 61
Your network has many point-to-point connections that are not all part of the switch fabric. However, they are still running spanning tree. This causes each port too wait as long as 50 seconds before data can be sent.
Which feature can be enabled to significantly decrease the time of the listening and learning states?

A. Portfast
B. Uplinkfast
C. Backbonefast
D. Redundantlink
E. RedundantPort

Answer: A.
Explanation: Cisco added the portfast which makes the STP for this port assume that the port is not part of a loop and will immediately move to the forwarding state, without going through the blocking, listening, or learning states.

Reference: Using Portfast and Other Commands to Fix Workstation Startup Connectivity Delays
http://www.cisco.com/warp/public/473/12.html

Incorrect Answers
UplinkFast allows a blocked port on a switch to almost immediately begin forwarding when it detects the failure of the forwarding link. UplinkFast must have direct knowledge of the link failure in order to move a blocked port into a forwarding state. However, this does not address the problem of this scenario: the slow Workstation startup time.

QUESTION NO 62
In Spanning-Tree Protocol, what is the default transaction time for a switch to move from blocking to forwarding state?

A. 5 seconds
B. 50 seconds
C. 60 seconds
D. 90 seconds

Answer: B.
Explanation: Typical STP port transitions are as follows: from blocking to listening (20 seconds), from listening to learning (15 seconds), and from learning to forwarding (15 seconds). Therefore the default transaction time for a switch to move from blocking to forwarding state is 50 seconds.

QUESTION NO 63
To define a VLAN on an RSM in a catalyst switch, you have to enter?

A. RSM vlan *vlan number* on
B. Set vlan *vlan number* on
C. Interface vlan *vlan number*
D. Vlan *vlan number*

Answer: C.
Explanation: To specify a VLAN interface on the RSM, enter the following command in the global configuration mode: interface *vlan number*.

QUESTION NO 64
You need to take advantage of Fast EtherChannel ports. Which two guidelines help avoid configuration problems that may cause the port to be automatically disabled? (Choose Two)

A. Allow some ports in a channel to be disabled.
B. Configure the ports in a channel as dynamic VLAN ports.
C. Configure all ports in a channel to operate at the same speed and duplex mode.
D. Assign all ports in a channel to the same VLAN or configure them as trunk ports.

Answer: C and D.
Explanation: If improperly configured, some Fast EtherChannel ports are disabled automatically to avoid networks loops and other problems. There are a number of guidelines to avoid configuration problems. Two of these guidelines are: configure all ports in a channel to operate at the same speed and duplex mode and assign all ports in a channel to the same VLAN or configure them as trunk ports.

QUESTION NO 65
Catalyst 5000 trouble-shooting begins with the Catalyst 5000 module located in the top slot of the chassis. What does this slot contain?

A. Ping and Telnet utilities in the Route Switch Module.
B. Console and network ports in the Supervisor Engine Module.
C. Three fast ethernet ports that can connect to other systems.
D. Interface module with LEDs to indicate errors and load factor.
E. Embedded RMON, SwitchProbe, and Switched Port Analyzer (SPAN).

Answer: B.
Explanation: The top chassis slop on a Catalyst 5000 contains the supervisor engine module.

QUESTION NO 66
When using the Catalyst 5000 series switch SPAN feature, the function of the destination module/port identifier is to identify _____.

A. The destination of ISL packets on another switch.
B. The port that mirrors traffic to a protocol analyzer.
C. The destination of ISL packets on the outbound switch.
D. The destination for a spanning-tree BPDU to the root bridge.
E. The destination portion of a MAC source/destination address pair.

Answer: B.

Explanation: As switches have a one-to-one dedicated path from a host to a switch port, in order to monitor the traffic on different ports it is necessary to mirror the traffic from one port to that of another port. This is done via the SPAN port.

QUESTION NO 67
The high end of the tools for trouble-shooting and managing Catalyst switches is from the graphic user interface applications in _____.

A. CWIS
B. NetSYS
C. CiscoView
D. VLANDirector
E. Traffic Director

Answer: A.
Explanation: CWIS is a graphic user interface application that can be used to configure, manage and troubleshoot Catalyst switches.

QUESTION NO 68
Enter the switch Set-base command that is comparable to the Cisco IOS-base command, show span.

Answer: show spantree
Explanation: To display Spanning Tree information on set-base switch you should use the show spantree command.

QUESTION NO 69
Which command would you use to check a module/port to display, the trunking status, VLAN active status, and VLAN that can use the link?

A. Show span
B. Show vlans status
C. Show vtp domain info
D. Show [module/port] trunk
E. Show trunk [module/port]

Answer: E.
Explanation: Use the **show trunk** command to display trunking information for the switch.
The RSM port displays as a port that is always trunking, with allowed and active VLANs for each VLAN configured on the RSM.

Incorrect Answers
A: Use the **show span** command to display information about the current SPAN configuration.
B, C: Do no apply here.
D: Incorrect syntax-

QUESTION NO 70
In contrast to shared Ethernet, switched Ethernet on a Catalyst switch _____ and_____. (Choose two)

A. Provides greater access to bandwidth.
B. Connects directly to end users or other switches.
C. Uses software to set up and maintain a filtering database.
D. Has fewer utilities, which makes management more difficult.
E. Is usually limited to a maximum of 16 ports and B spanning trees.
F. Associates a MAC source address with a set of ports for transmission.

Answer: A and B.
Explanation: Switched ethernet on a Catalyst switch connects directly to the end users and other switched plus it provides greater access to bandwidth than share Ethernet.

QUESTION NO 71
When connecting the 10BaseT switch ports to servers, workstations, and routers, make sure that you use _____.

A. A crossover cable.
B. A straight-through cable.
C. A RJ-to-RJ-45 rollover cable.
D. MMF cable, with a 62.5-micron fiber-optic core and 125-micron outer cladding.

Answer: B.
Explanation: When connecting switch to server, workstations, and routers, ensure that you use a straight-through cable.

QUESTION NO 72
Which type of cable is used to connect the switch 10BaseT ports to a 10BaseT-compatible workstation?

A. Thick coaxial cable
B. Crossover CAT5 cable
C. Straight-through CAT5 cable
D. RJ-45-toRJ-45 rollover cable

Answer: C.
Explanation: When connecting switch to server, workstations, and routers, ensure that you use a straight-through cable.

QUESTION NO 73
Shared bandwidth and switched bandwidth are some of the functions represented by which layer in the Campus Network Hierarchical Model?

A. Core
B. Access
C. Network
D. Distribution

Answer: B.
Explanation: There are three layers in the campus hierarchical model: access layer, distribution layer, and core layer. In the campus environment, some of the functions represented by the access layer include: Shared bandwidth and switched bandwidth.

QUESTION NO 74
Which statement about port security is true?

A. It allows a network administrator to configure a set of allowed devices or IP addresses to provide additional security.
B. It moves all ports, except the console, out of the management VLAN to prevent unauthorized access to the default VLAN1.

C. It limits the number of MAC addresses that are allowed to use the switch, to prevent unauthorized users from gaining access to the network.
D. It must be enabled on a switch port and the directly attached router interface in order for the switch to build a table of allowable MAC addresses.

Answer: C.
Explanation: Port security allows a network administrator to configure a set of allowed devices or MAC addresses to provide additional security.

QUESTION NO 75
What is the IEEE specification for Gigabit Ethernet?

A. IEEE 802.1P
B. IEEE 802.1Q
C. IEEE 802.3Z
D. IEEE X3T.11

Answer: C.
Explanation: IEEE 820.3Z is the standard for the Gigabit Ethernet. This is a high-speed (billion bits per second) version of Ethernet.

QUESTION NO 76
If you configure a switch as a VTP server off line and then connect it to the network, the switch may ____.

A. Revert to client mode once you enable online access.
B. Not get root bridge or designated bridge information.
C. Destabilize the spanning tree as the server attempts to become root bridge.
D. Ignore the configuration revision numbers created on the other VTP servers.
E. Cause a loss of VLAN information by advertising an inaccurate revision of the domain.

Answer: E.
Explanation: If the new VTP server has a higher revision than the current VTP domain, it will overwrite the database of the existing servers and clients of the domain.

QUESTION NO 77
When using VTP, what VTP information does a Catalyst switch advertise on its trunk ports? (Choose two)

A. Native VLAN
B. Negotiation status
C. Spanning-tree bridge
D. Management domain
E. Configuration revision number

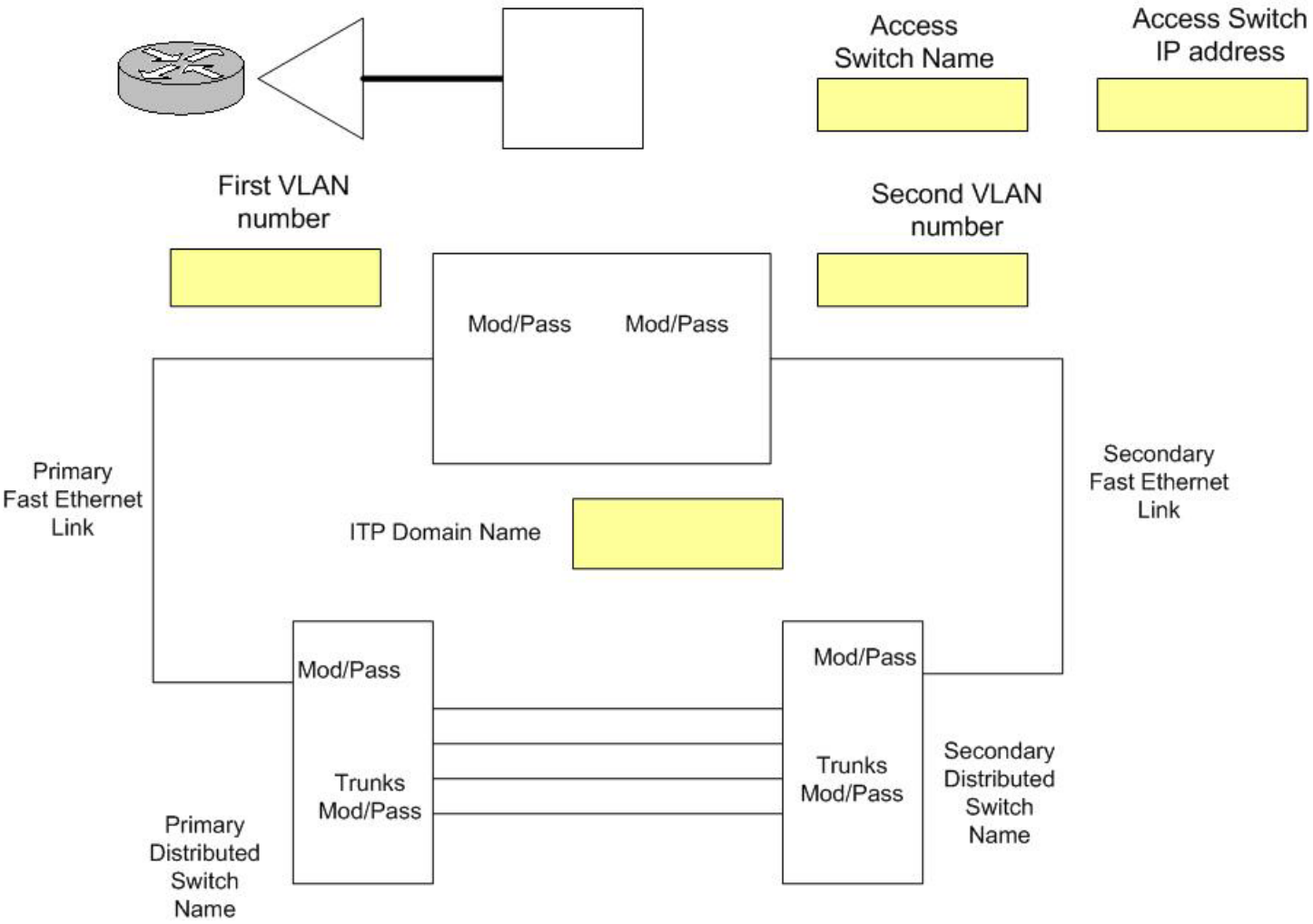
Answer: D and E.
Explanation: Using VTP, each Catalyst family switch advertises the following on its trunk links: management domain, configuration revision number, and known VLANs and their specific parameters.

QUESTION NO 78
An Ethernet media trunk link is to be configured to operate in ISL mode between two Cisco switches, each having identical modules, software revisions and VLAN configuration information. Which condition would prevent the trunk link from operating in ISL trunking mode?

A. The trunk encapsulation is different at each end of the link
B. The duplex parameter is set to AUTO at each end the link
C. The native VLAN parameter is set to AUTO at each end of the link
D. The speed parameter is set to AUTO at each end of the link
E. The trunk negotiation parameter is different at each end of the link

Answer: A.
Explanation: In order for ISL mode to work properly requires the trunk encapsulation is different at each end of the link.

QUESTION NO 79



You are using PC12. You are given a network diagram and the table below in the exhibit, fill in the Access switch name and IP address, the VTP domain name and the first and second VLAN numbers.

PC	Access Switch	Access Switch IP Address	First VLAN Number	Second VLAN Number	VTP Domain Name
PC1	AS1	172.16.4.1	1	5	bik1
PC2	AS2	172.16.4.2	2	6	bik1
PC3	AS3	172.16.4.3	3	7	bik1
PC4	AS4	172.16.4.4	4	8	bik1
PC11	AS11	172.16.4.11	11	15	bik2
PC12	AS12	172.16.4.12	12	16	bik2

Answer: Access Switch Name: AS12 Access Switch IP Address: 172.16.4.12
First VLAN number: 12 Second VLAN number: 16
VTP Domain Name: bik2

Explanation: In order for ISL mode to work properly requires the trunk encapsulation is different at each end of the link.

QUESTION NO 80
Which two statements about VLANs are true? (Choose two)

A. A trunk link does not have a native VLAN.
B. A trunk link does not belong to a specific VLAN.
C. All VLANs can be transported on a single trunk link.
D. There are four identification techniques to determine which VLAN a frame belongs to when it is received on a trunk link.

Answer: B and C.
Explanation: A trunk link does not belong to specific VLAN; rather, a trunk link transports VLANs between devices. The trunk link can be configured to transport all VLANs, or it can be limited to transporting a limited number of VLANs.

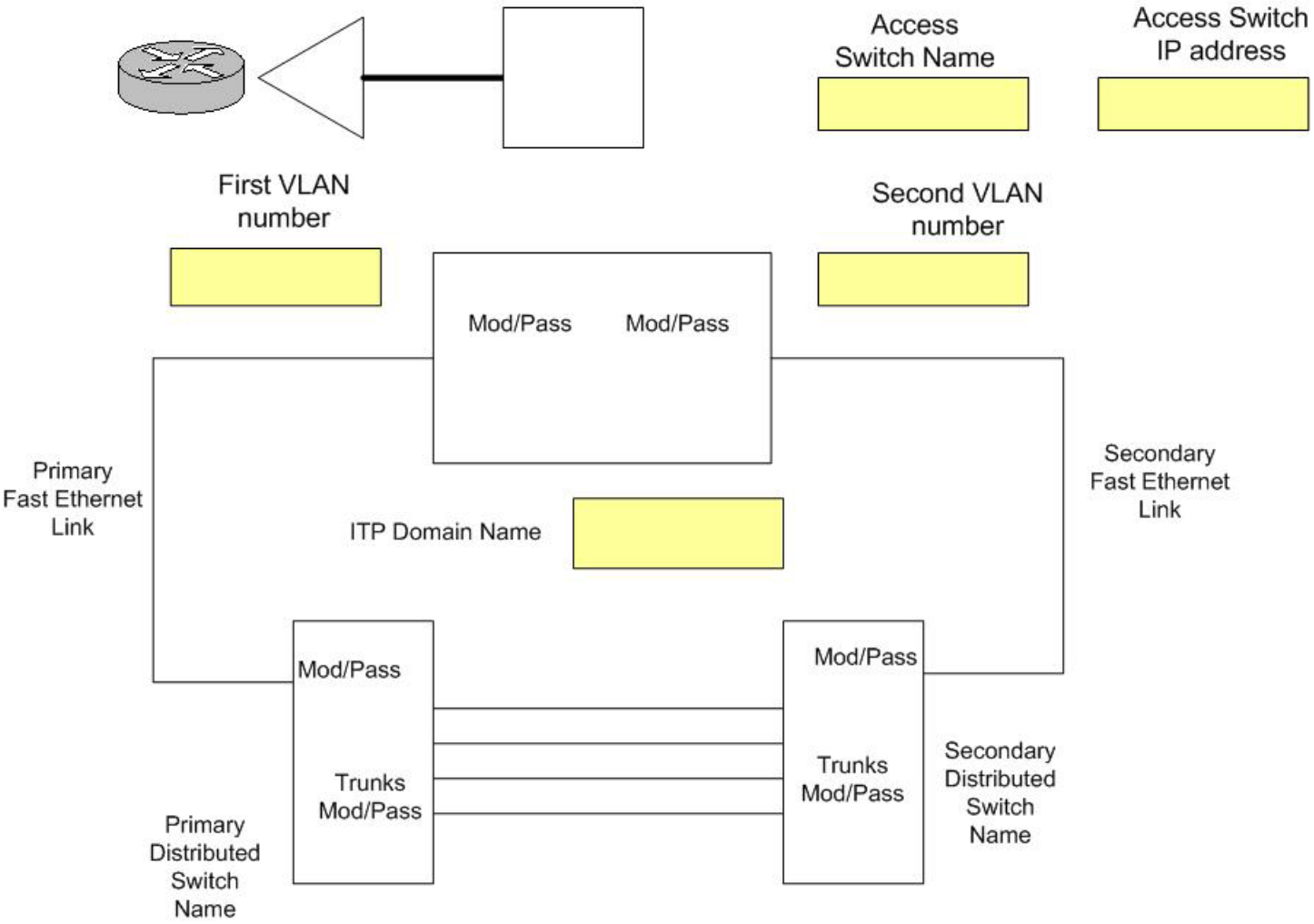
QUESTION NO 81
An ethernet media trunk is to be configured between two Cisco switches, each having identical modules, software revisions and VLAN configuration information. Which statement about the trunk link is false?

A. The link may be 100Mb/s or faster.
B. The link may be ISL and be point-to-point.
C. The link may use 802.1Q trunk protocol, providing the SAID parameter is correctly set.
D. The link may use 802.10 trunk protocol, providing the SAID parameter is correctly set.

Answer: C.
Explanation: 802.10 (FDDI) is used to send VLAN information over FDDI. 802.10 uses a SAID field in the frame header to identify the VLAN. This is proprietary to Cisco devices. 802.1Q, an IEEE standard, does not use a SAID field.

Incorrect
The VLAN link may be 100Mbps or faster, ISL and point-to-point, and using the 802.10 (if SAID is correct).

QUESTION NO 82



You are using PC2. You are given a network diagram and the table below in the exhibit, fill in the Access switch name and IP address, the VTP domain name and the first and second VLAN numbers.

PC	Access Switch	Access Switch IP Address	First VLAN Number	Second VLAN Number	VTP Domain Name
PC1	AS1	172.16.4.1	1	5	bik1

PC2	**AS2**	**172.16.4.2**	**2**	**6**	**bik1**
PC3	**AS3**	**172.16.4.3**	**3**	**7**	**bik1**
PC4	**AS4**	**172.16.4.4**	**4**	**8**	**bik1**
PC11	**AS11**	**172.16.4.11**	**11**	**15**	**bik2**
PC12	**AS12**	**172.16.4.12**	**12**	**16**	**bik2**

Answer: Access Switch Name: AS2 Access Switch IP Address: 172.16.4.2
First VLAN number: 2 Second VLAN number: 6
VTP Domain Name: bik1
Explanation: Due to the pattern of the other computers and their parameters the IP, VLAN number, Domain number and name should be illustrated as above.

QUESTION NO 83
In a VTP domain, a Catalyst switch advertises _____.

A. The VLAN ID of all known VLANs, the management domain name, the total number of trunk links on the switch.
B. The VLAN ID of all known VLANs, a 1-bit canonical format (CFI indicator), the switch configuration revision number.
C. The management domain name, the switch configuration revision number, the known VLANs, and their specific parameters.
D. A 2-bytes TPID with a fixed value of 0x8100 for the management domain number, the switch configuration revision number, the known VLANs, and their specific parameters.

Answer: C.
Explanation: Using VTP, each Catalyst family switch advertises the following on its trunk ports: management domain, configuration revision number, and all known VLANs with their specific parameters.

QUESTION NO 84
Which two statements about trunk links are true? (Choose two)

A. A trunk link does not have a native VLAN.
B. A trunk link does not belong to specific VLAN.
C. All VLANs can be transported on a single trunk link.
D. There are four identification techniques to determine which VLAN a frame belongs to when it is received on a trunk link.

Answer: B and C.
Explanation: A trunk link does not belong to specific VLAN; rather, a trunk link transports VLANs between devices. The trunk link can be configured to transport all VLANs, or it can be limited to transporting a limited number of VLANs.

QUESTION NO 85
Which parameter is NOT distributed by VTP advertisements?

A. VLAN names.
B. VLAN description.
C. VLAN domain names.
D. VLAN SAID number.
E. VTP configuration revision number.

Answer: B.
Explanation: VLAN description is not distributed by VTP advertisements.

QUESTION NO 86
Which MAC address is a multicast?

A. 00-00-5E-12-2C-11
B. 00-00-5F-12-2C-11
C. 00-01-5E-12-2C-11
D. 01-00-5E-12-2C-11

Answer: D.
Explanation: The prefix 01.00.5E identifies the frame as multicast.

QUESTION NO 87
Which multicast ranges are reserved for local purposes and are not forwarded by multicast routers?

A. 224.0.0.0 through 224.0.0.255
B. 239.0.0.0 through 239.255.255.255
C. 255.0.0.0 through 255.255.255.255

D. 224.0.0.0 through 224.255.255.255

Answer: A.
Explanation: Address 224.0.0.0 to 224.0.0.255 are reserved for local purposes, such as administrative and maintenance tasks. Multicast routers do not forward datagrams destined to this range of addresses.

QUESTION NO 88
Which definition correctly describes the broadcast transmission method?

A. One copy of each frame is sent to every client.
B. A new packet is sent each time the client requests it.
C. Only one copy of each frame is sent, using an address that reaches all the client.
D. One copy of each frame is sent, using a special address that allows each client to decide if they want to receive the frame.

Answer: C.
Explanation: In a broadcast design, an application sends only one copy of each packet using a broadcast address.

QUESTION NO 89
Which two configurations must be satisfied before you enable multicast? (Choose two)

A. NICs on the network must support MMNP.
B. Hosts must have an IP protocol that supports multicast.
C. Servers and clients must have applications that support IP multicast.
D. Subnet boundaries must be configured for MOSPF multicast routing protocol.

Answer: B and C.
Explanation: There are a number of requirements that must be met before IP multicasting can be enabled. Two of these requirements are: server and client hosts must have an IP protocol stack that supports multicasting, as specified in RFC 1112 and server and client must have applications that support IP multicasting.

QUESTION NO 90

A company needs to interconnect its four separate campus buildings with a high-speed, high-bandwidth backbone. Each building supports a separate department and each department supports IP, IPX, and Apple Talk. The network designer has already recommended a Catalyst 6000 series switch at the distribution layer.
What is the most appropriate device for the core?

A. Catalyst 8500 series switch.
B. Catalyst 12000 series switch.
C. Catalyst 4000 series switch with a 6-port Gigabit Ethernet module.
D. Catalyst 5000 series switch with a 24-port group switched 1000BaseT Ethernet module.

Answer: A.
Explanation: For core backbone implementations, the Catalyst 6500 and 8500 series provide wire-speed multicast forwarding and routing, as well as the Protocol-Independent Multicast (PIM) protocol for scalable multicast routing.

QUESTION NO 91
Which cisco series is used with small/medium campus networks, and connects desktops and 10BaseT hubs to distribution switches with high-speed connections?

A. Catalyst 2820
B. Catalyst 4000
C. Catalyst 5000
D. Catalyst 6000

Answer: A.
Explanation: The Catalyst 1900 or 2820 series switch is an effective access device in a small or medium campus network, connecting individual desktops and 10BaseT hubs to distribution switches with high-speed connections.

QUESTION NO 92
The router switch feature card is a full-function IOS router installed as an integrated daughter card for the _____.

A. Catalyst 4000 series switch.
B. Cisco 7500, 7200, 4500, and 4700 series routers.

C. Catalyst 5000 series supervisor IIG and supervisor IIIG cards
D. Catalyst 5000 series supervisor engine III, FSX, or III FLX modules.
E. Catalyst 5000 series supervisor engine III, FSX, or III FLX modules.

Answer: C.
Explanation: The router switch feature card is a full-function IOS router installed as an integrated daughter card for the Catalyst 5000 series supervisor IIG and supervisor IIIG cards.

QUESTION NO 93
A company has a single large campus network including six buildings interconnected with a high-speed, bandwidth backbone. A dual core configuration is necessary as redundant connections are required. They will be using a catalyst 6000 series switch at the distribution layer.
Which device best meets their needs at the core layer?

A. 2926G switch
B. Catalyst 4000 series switch
C. Catalyst 5500 series switch
D. Catalyst 8500 series switch

Answer: D.
Explanation: For core backbone implementations, the Catalyst 6500 and 8500 series provide wire-speed multicast forwarding and routing, as well as the Protocol-Independent Multicast (PIM) protocol for scalable multicast routing

QUESTION NO 94
Which two Cisco series switches are the most effective for distribution layer switching? (Choose two)

A. Catalyst 2800
B. Catalyst 4000
C. Catalyst 5000
D. Catalyst 6000

Answer: C and D.
Explanation: The two most effective switch devices at the distribution are the Catalyst 5000 series and 2986G switches. The Catalyst 6000 switched is also effective at the distribution level.

QUESTION NO 95
Which two events can cause an MLS entry to be purged from cache? (Choose two)

A. An access list applied.
B. MLS is enabled on a related switch.
C. The flow for that entry is not detected for the specified aging time.
D. A candidate entry is in the cache for three seconds with no enabled entry.

Answer: A and C.
Explanation:
A: Applying an access list may cause MLS cache entries to be removed.
C: An MLS entry will be deleted from the cache if a flow for the entry has not been detected for the specified aging time

Incorrect Answers
B: This would not cause cache entries to be purged.
D: A cache candidates entry remains in cache for 5 seconds, not 3 seconds, with no enable entry before timing out.

QUESTION NO 96
Which command enables multilayerswitching on a distribution layer switching engine?

A. Set mls sp IP
B. Set mls enable
C. Set mls rp vtp-domain
D. Set multilayerswitching

Answer: B.
Explanation: The Catalyst 5000, 2926G, and 2926 series switches use the set mls enable to enable IP shortcut functions on the switch, enable NFCP message processing, and allow new shortcut entries to be established.

QUESTION NO 97
You are using multiplayer, and you need to configure your distribution layer route processor to participate in the multilayerswitching. Which two commands must you use when you configure the distribution layer route processor? (Choose two)

A. Mls rp ip
B. Mls enable
C. Mls run start
D. Mls rp vtp-domain

Answer: A and D.
Explanation: To ensure mutlilayer switching you must first enable MLS globally with the mls r pip command and then assign the MLS Interface to a VTP domain with the mls rp vtp-domain command.

QUESTION NO 98
Which two tasks must be completed to enable CGMP on a distribution layer device? (Choose two)

A. Disable IGMP on the distribution router.
B. Enable IGMP on the distribution switch.
C. Disable IGMP on the distribution switch.
D. Enable CGMP on the distribution switch.
E. Enable CGMP on your distribution router.

Answer: D and E.
Explanation: In order for CGMP to be enable on a distribution layer device two tasks must be completed. The two tasks are: enable CGMP on the distribution router and enable CGMP on the distribution switch.

QUESTION NO 99
The router creates a CGMP frame _____.

A. And forwards it to a well-known address 224.0.0.1
B. And forward it to a well-known address to which all CGMP switches listen.
C. And forwards it to the rendezvous point to ensure consistent configurations.
D. And assigns it a TTL equal to or less than the TTL assigned to the forwarding instance.
E. Containing the request type, the multicast group address, and the actual MAC addresses of the destination devices.

Answer: B.
Explanation: When a router received an IGMP packet, it creates a CGMP packet and forwards it to the well-known address to which all CGMP switches listen.

QUESTION NO 100
What is the default setting of CGMP on a cisco switch?

A. Enabled
B. Disabled
C. Enabled only when PIM switch is detected
D. Disabled only if multicast is not detected

Answer: B.
Explanation: CGMP must be enabled on a switch. This can be done in the EXEC mode with the following command: set cgmp enable.

QUESTION NO 101
To determine the best loop-free path to the Root Bridge, the Spanning-Tree protocol _____.

A. Places the port with the highest port ID in forwarding mode.
B. Places the port with the lowest port ID in forwarding mode.
C. Attaches the lower port cost values to ports supporting slower media.
D. Places the port with the lowest forwarding delay timer in forwarding mode.
E. Uses the dia network _diameter parameter in the **set spantree root** command.

Answer: B.
Explanation: The Spanning Tree Protocol uses the information in the BPDUs to determine which ports should be forwarding and which ports should be blocking. To ensure the best loop-free path to the root the lowest port ID becomes the forwarding port.

QUESTION NO 102
A Catalyst physical port operating as a trunk can be part of several spanning trees. On this shared topology, loops in one spanning tree _____.

A. Are segmented from the other spanning trees.
B. Do not have any impact on the other spanning trees.
C. Can have a media load impact on the other spanning trees.
D. Use a time-to-live mechanism to put an end to loop pollution.

E. Can be isolated from the other spanning trees with root port settings.

Answer: B.
Explanation: As each instance of STP is on a different port, a loop in one STP will not have an impact on the other spanning trees.

QUESTION NO 103
You have a spanning-tree environment. Which command ensures timely host access to the network?

A. Set spantree Portfast enable
B. Set spantree superlink enable
C. Set spantree unlinkfast enable
D. Set separate backboneFast enable

Answer: A.
Explanation: Enable PoretFast using the set CLI to configure a switch port connected to a single workstation or server by entering the following command in the privilege mode:

set spantree portfast

QUESTION NO 104
Which modifications can be made to spanning-tree protocol to improve spanning-tree protocol operations as the network grows?

A. Properly place the root bridge to ensure an optimal STP topology.
B. Provide for efficient workstation access through the use of backboneFast.
C. Load balance on redundancy links through the use of technologies like backboneFast.
D. Configure access switches as root bridges to ensure optimal workstation access to the network
E. Improve the convergence time of spanning tree during a network reconfiguration by decreasing the forward delay timers.

Answer: A.
Explanation: One of the most important decisions that must be made in the STP network is the location(s) of the root bridge. Proper placement of the root bridge optimizes the path that is chosen by the STP.

QUESTION NO 105
You want to take advantage of the benefits of parallel bandwidth provided by fast EtherChannel. To enable fast EtherChannel, enter _____.

A. Set link channel
B. Set port channel
C. Set channel fast
D. Set ether channel

Answer: B.
Explanation: To take advantage of the parallel bandwidth offered by fast EtherChannel you must create a channel on the desired ports by entering the following command: set port channel.

QUESTION NO 106
When should PortFast be used?

A. When you are connecting a single end station to a switch port.
B. When you need several switch ports to connect a single port.
C. When you have switch ports connected to a single end station.
D. When you are using the UPlink Fast Protocol and want t increase the port tie on several end stations connected to a single switch port.

Answer: A.
Explanation: There are a number of reasons to use PortFast. One of the reasons for using PortFast is when you are connecting a single end station to a switch port. These types of point-to-point connections are not part of the switch fabric, but they must run Spanning Tree. Therefore there must be a way to put a port into the forwarding state immediately. PortFast does this.

QUESTION NO 107
Default gateways can exist on two types of switches. You enter the set IP route command to configure a default route on a (n) _____-based command switch.

A. Set
B. IOS
C. Forward
D. Interface

Answer: A.
Explanation: To configure a default route on a set command-based system you use the set ip route command.

QUESTION NO 108
Which command accurately depicts the mode and command used to configure a default gateway on an IOS command-based switch?

A. Switch(config) IP route IP address
B. Switch(enable) set IP route IP address
C. Switch(enable) IP route-default IP address
D. Switch(config) IP default-gateway IP address
E. Switch(enable) set IP default-gateway IP address

Answer: D.
Explanation: To define a gateway on a Cisco IOS-based series switch, enter the ip default-gateway command in the global configuration mode.

QUESTION NO 109
What is the maximum number of VLANs supported on a single RSM?

A. 1
B. 16
C. 256
D. 1024

Answer: C.
Explanation: A RSM can route up to 256 VLANs.

QUESTION NO 110
Which statement correctly identifies the characteristics of static VLAN members?

A. VLAN membership is managed manually by the network administrator.
B. The switch can forward their packets to other VLANs using the VTP protocol.

C. VLAN membership is managed through a database that maps MAC addresses to specific VLANs.
D. The port can be automatically changed to another VLAN, based on a device MAC address in a VLAN database.

Answer: A.
Explanation: Static VLANs is also called port-based membership. In this type of environment assigning a port to a VLAN creates static VLAN assignments. These are managed manually by the network administrator.

QUESTION NO 111
You have several separate VLANs that you want to interconnect. Which type of device allows connection between VLANs?

A. Core switch
B. IP translator
C. Route processor
D. VLAN interswitch
E. Switching engine

Answer: C.
Explanation: Inter-VLAN routing occurs at the distribution layer. The distribution layer is a combination of high-end switches and route processors.

QUESTION NO 112
You have to been asked if there are any issues concerning connecting a host that is attached to the network using IEEE 802.5 and another host that is attached to the network using IEEE 802.3. The preference is that they be in the same VLAN and only be processed at Layer 2.
Which two statements are true? (Choose two)

A. There is an issue with the VLAN media mismatch at layer2.
B. There is an issue at layer 2; it requires the use of the SAID field.
C. There is an issue at layer 2; it requires the use of transparent bridging.
D. There is an issue at layer 2; it requires the use of translational bridging.
E. There is not an issue with VLAN membership, it is not media dependent.

Answer: D and E.

Explanation: The key to this question is the fact that the host and networks are using different IEEEs. In order for them to communicate there will be a need for transnational bridging. There is no VLAN issues.

QUESTION NO 113
Which type of link is capable of carrying multiple VLANs?

A. 802.1q trunk
B. Ethernet
C. Serial
D. Multispan
E. 802.1d trunk

Answer: A.
Explanation: The official name of the IEEE 802.1Q protocol is Standard for Virtual Bridged Local-Area Networks. This refers to the ability to carry the traffic of more than one subnet down a single cable.

QUESTION NO 114
Click the exhibit button. Click the tile button.
The multicast IP address 224.163.163.45 translates to which MAC address?

A. 01-00-5E-23-A3-2D
B. 01-00-5E-00-A3-2D
C. 01-00-5E-A3-00-2D
D. 01-00-5E-A3-A3-2D
E. 01-00-5E-A3-23-2D

Answer: A.
Explanation: The high order 25 bits of the ethernet (mac) address is equal to 01-00-5E
and the low-order 23 bits of the ip multicast group id is placed into the low order 23 bits of the ethernet address.

Taking the last 3 octets of the 224.163.163.45 address will leave you 163.163.45. In most cases 163 does convert to A3, however the second octet of the 224.163.163.45 address only has 7 useable bits (when dealing with multicast only).

so translating to binary normally you would have:

10100011.10100011.00101101=163.163.45

8 bits 8 bits 8 bits
or A3-A3-2D using 24 bits of address space.

translating for multicast purposes would drop the first bit
of the second octet and give you the following:

0100011.10100011.00101101=35.163.45
7 bits 8 bits 8 bits
or 23-A3-2D using 23 bits of address space.

(note that 35 translates to 23 hex)

so, the complete mac address will be 01-00-5E-23-A3-2D

QUESTION NO 115
Which command can you use to verify that a router interface has been configured for CGMP?

A. Show interface
B. Show run
C. Show pip
D. Show cgmp

Answer: D.
Explanation: Several commands are available to help verify the CGMP configuration on a switch. These commands begin with show cgmp and then followed by other parameters such as statistics.

QUESTION NO 116
A company needs to expand its multilayerswitching network. Which two pieces of existing equipment can NOT be used when implementing multilayerswitching in an external router/switch design? (Choose two)

A. Cisco 8500 series router
B. Catalyst 6000 series switch
C. Route switch module
D. Supervisor Engine II G
E. Catalyst 2950 series switch

Answer: C and E.

Explanation: Multilayer switching in the Catalyst family of switches can operate at a Layer 3 switch or Layer 4 switch.

QUESTION NO 117
What can you do to eliminate uncertainties about cable breaks, cable plants, and punchdown connections?

A. Replace the cable run with an external cable known to be good.
B. Check the cable length, impedance, and continuity with a network monitor.
C. Replace the network adapter card a the user device end and retest.
D. Change the ports used on the switch and determine if the problem goes away.

Answer: D.
Explanation: We should start with the simplest troubleshooting step. If we change ports and if any problem goes away we do not need to check the cable length, impedance, and continuity with a network monitor.

QUESTION NO 118
How can you enable a Telnet session between the access layer switch and a PC?

A. Assign a unique name for the port on the switch.
B. Assign an IP address to the access switch.
C. Assign a MAC address to the access switch.
D. Assign the switch a DNS name.

Answer: B.
Explanation: To establish a Telnet session between an access later switch and a PC you must first assign an IP address to the access switch.

QUESTION NO 119
You are trying to determine how mls entries are created in the MLS cache by applying flow mask modes. Which command displays the MLS flow mask mode on the switch?

A. Show mls cache list
B. Show mls cache
C. Show mls

D. Show mls entry

Answer: D.
Explanation: To display the MLS flow mask mode on a switch one must use the show mls entry command.

QUESTION NO 120
To display the MLS cache, enter the _____

A. Show mls cache command on the MLS-SE
B. Show mls cache entry command on the MLS-SE
C. Show mls entry command on the MLS-RP
D. Show mls cache entry command on the MLS-RP
E. Show mls entry command on the MLS-SE
F. Show mls cache command on the MLS-RP

Answer: E.
Explanation: To display the mls cache you must use the show mls entry command on the MLS switch engine.

QUESTION NO 121
You are connecting the 100BASE TX switch port to servers, workstations and routers. What should you use?

A. Rollover Cable
B. Straight-Through Cable
C. Fiber patch Cable
D. Crossover Cable

Answer: B.
Explanation: When connecting switch to server, workstations, and routers, ensure that you use a straight-through cable.

QUESTION NO 122
What does applying an extended access list to an inbound interface do? (Choose two)

A. Forces all subsequent incoming packets to be routed.
B. Purges all existing flows for that interface.
C. Forces existing flows to age out after 256 seconds.
D. Creates flows based on source-destination pairs.

Answer: A and B.
Explanation: When an extended access list is applied to an inbound interface the result is it purges all existing flows for that interface and forces all subsequent incoming packets to be routed.

QUESTION NO 123
You need to configure your RSM or interVLAN routing, but you do not have a terminal directly connected to the RSM console port. Which command allows you to access the RSM from the switch prompt?

A. Session
B. Set module
C. Config term
D. Access

Answer: A.
Explanation: To access the RSM from the switch prompt, you enter session command. Once you are done you can exit with the exit command.

QUESTION NO 124
On a Cisco IOS switch, enter the command to create a VLAN, given that the VLAN number is 22 and the VLAN name is Accounting.

Answer: vlan 22 name accounting

QUESTION NO 125
Which command displays Fast EtherChannel bundles?

A. SwitchTestK # show channel
B. SwitchTestK(enable) show FE interface

C. SwitchTestK # show port group
D. SwitchTestK(enable) show port channel

Answer: D.
Explanation: Use the **show port channel** command to display Fast EtherChannel information for a specific module or port. It can be used to verify the configuration of an EtherChannel bundle.
Sample output:

```
SwitchTestK> (enable) show port channel

Port  Status     Channel              Admin Ch
                 Mode                 Group Id
----- ---------- -------------------- ----- -----
 7/5  connected  on                      56   835
 7/6  connected  on                      56   835
----- ---------- -------------------- ----- -----

Port  Device-ID                       Port-ID                   Platform
----- ------------------------------- ------------------------- ----------------
 7/5  069003103(5500)                 3/5                       WS-C5500
 7/6  069003103(5500)                 3/6                       WS-C5500
----- ------------------------------- ------------------------- ----------------
```

Reference: Configuring Fast EtherChannel and Gigabit EtherChannel
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_1/config/channel.htm

Incorrect Answers
A: The **show channel** command cannot be used to display fast Ethernet bundles on a switch.
B: Incorrect command.
C: The **show port group** command verifies the administrative group configuration.

QUESTION NO 126
Which statement about the Spanning-Tree Protocol UplinkFast feature is true?

A. It can be configured on a per VLAN basis.
B. It is designed for use within network cores.
C. It is designed for use with access layer switches.
D. It does not require knowledge of a link failure to move a blocked port into a forwarding state.

Answer: C

Explanation: The STP UplinkFast was designed to specifically for use with access layer switches. This feature is not designed to use within the network core.

The UplinkFast feature provides fast convergence in the network access layer after a spanning tree topology change by using uplink groups. An uplink group is a set of ports (per VLAN), only one of which is forwarding at any given time. Specifically, an uplink group consists of the root port (which is forwarding) and a set of blocked ports (not including self-looped ports). The uplink group provides an alternate path in case the currently forwarding link fails.

Reference: Cisco, Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_1/config/stp_enha.htm

QUESTION NO 127
Which command do you use to improve spanning-tree convergence?

A. Set spantree portfast
B. Set spantree backboneFast
C. Set spantree priority
D. Set spantree uplinkfast enable

Answer: D.
Explanation: The STP UplinkFast was designed to help optimize convergence times. UplinkFast is enabled with the set spantree uplinkfast enable command.

QUESTION NO 128
Which statement about the spanning-tree forward delay value is false?

A. Default for the network are obtained from the root bridge.
B. The value signifies the amount of time the port spends transitioning from learning to listening mode.
C. The delay can be abbreviated on a switch's slot/port by setting the port fast feature.
D. All switch ports must use the values learned from the root bridge.

Answer: B.
Explanation: The time it takes to transition a port from the listening state to the learning state or from the learning state to the forwarding state is called the forward delay. The transition from the learning state to the listening state does not apply.

Incorrect Answers:
The other statements are true.

QUESTION NO 129
An Ethernet media trunk link is to be configured to operate in 802.1Q mode between two Cisco switches. Each has identical modules, software revisions, and VLAN configuration information.
What is NOT required for the trunk to correctly operate in 802.1Q mode?

A. Identical duplex at each end of the link
B. Identical speed at each end of the link
C. Identical native VLAN parameter at each end of the link
D. Compatible trunking mode shred by the ports connecting the link at either end.
E. Identical truck negotiation parameter at each end of the link
F. Identical trunk encapsulation parameter at each end of the link

Answer: E.
Explanation: In order for a trunk to operate IEEE 802.1Q mode you do not require an identical trunk negotiation parameter at each end of the link.

QUESTION NO 130
Which statement about the Inter-Switch Link (ISL) specification is false?

A. ISL embeds a two-byte SAID field in the LAN frame.
B. ISL adds an extra 30 Bytes to the frame.
C. ISL can support Token Ring as well as Fast Ethernet.
D. ISL adds or removes its frame tagging and FCS field for traffic between VLAN capable Cisco products.
E. ISL is for point-to-point connections only.

Answer: A.
Explanation: ISL does not use any SAID field.
Note: A said field is used by 802.10 (FDDI) to identify the VLAN.

Incorrect Answers
B: ISL is an external tagging process, which means the original frame is not altered but instead is encapsulated with a new 26-byte ISL header. It also adds a second frame check sequence (FCS) field at the end of the frame. In total ISL adds an extra 30 bytes to the frame.

C: ISL support FastEthernet and Gigabit Ethernet, both of which can be implemented as Token Ring.
D: ISL is an external tagging process.
E: ISL is a trunking protocol, i.e. it is used for point-to-point connections only.

QUESTION NO 131
You are asked to manage a complex network consisting of 19 Cisco switches and 35 VLANs where not all switches have ports in all VLANs. The switches are inter-connected using Ethernet, but some edge switches use only FDDI trunks.
What are two reasons to use VTP pruning? (Choose two)

A. It reduces broadcast traffic carried on trunk links.
B. It reduces the amount of configuration necessary.
C. It provides a more stable network when used with spanning tree.
D. It allows active redundant links between links when used with spanning tree
E. It saves VLAN configuration memory.

Answer: A and C.
Explanation: There are a number of reasons for using VTP. Two of these reasons are: it reduces broadcast traffic carried on truck links and provides a more stable network when used with spanning tree..

QUESTION NO 132
Which command places an external route processor in the same VTP domain as the switch?

A. Set mls vtp-domain
B. Mls rp vtp-domain
C. Mls ext domain vtp
D. Set domain vtp

Answer: B.
Explanation: To place an external route processor interface in the same VTP domain as the switch, enter the following commands in interface configuration mode:

interface vlan

QUESTION NO 133
Which statement about the Spanning Tree Protocol is true?

A. If Spanning-Tree Protocol is enable for a VLAN, it is enabled for all ports on the VLAN.
B. If Spanning-Tree Protocol is enable on a switch, it must be enables for all ports on the switch.
C. Spanning-Tree Protocol is enabled with the SPANTREE ON command.
D. Spanning-Tree Protocol is disabled by default.

Answer: A.
Explanation: If STP is enable for a VLAN, then by default it is enabled for all of the ports of the VLAN.

QUESTION NO 134
To determine the best loop-free path to the root, the Spanning-Tree Protocol _____

A. Places the port with the highest PortID in forwarding mode.
B. Attaches the lower port cost values to ports supporting slower media.
C. Places the port with the lowest forwarding delay timer in forwarding mode.
D. Uses the dia network_diameter parameter in the set spantree root command.
E. Places the port with the lowest path cost in forwarding mode.

Answer: E.
Explanation: The Spanning Tree Protocol uses the information in the BPDUs to determine which ports should be forwarding and which ports should be blocking. To ensure the best loop-free path to the root the lowest port cost becomes the forwarding port.

QUESTION NO 135
How does the Layer 2 switch use CGMP to limit multicast traffic?

A. Vlans are defined to correspond to the boundaries of the multicast group.
B. The switch discovers if there are still members of the group remaining on the network segment.
C. The switch periodically transmits queries to multicast hosts to refresh its knowledge of the group membership.
D. The same switch keeps sending Group-Specific-Queries until the time-out.

Answer: C.

Explanation: In order to ensure that the CGMP forwarding tables are current, periodic queries are sent to multicast host to refresh the knowledge of the group membership.

QUESTION NO 136
What is the purpose of VLANs in a switched network?

A. To control the size of the broadcast domain.
B. To replace the need for hubs.
C. To reduce the number of network protocols.
D. To the control the size of the collision domain.

Answer: A.
Explanation: A VLAN solves the scalability problems found in large flat networks by dividing the network into smaller broadcast domains or subnets.

QUESTION NO 137
What are the three types of flow masks?

A. Source port ip mode, destination port ip mode,source-destination port ip mode.
B. Source ip mode, destination ip mode, port designation ip mode.
C. Source ip mode, destination ip mode, source-destination ip flow mode.
D. Destination ip mode, source-destination ip mode, ip flow mode.

Answer: D.
Explanation: The MLS-SE supports three flow masks modes: Destination-IP, Source-Destination-IP, and IP-Flow.

QUESTION NO 138
Using VLANs in a switched inter-network can solve the scalability problems found in large flat networks by controlling the propagation of frames and allowing connectivity between end users. How do VLANs achieve this task? (Choose three)

A. By providing routing functionality.
B. By limiting the flooding of broadcast frames.
C. By limiting the flooding of multicast frames.

D. By limiting BPDU frames.
E. By limiting the CDP frames.

Answer: B, C and D.
Explanation: VLANs functions a logical border limiting the flooding of broadcast and multicast frames. BPDU frames are restricted to the VLAN.

VLANs solve many of the Layer 2 issues that arise from a switched campus network. For example, all traffic, including broadcast and multicast, is contained within the subnet.
Incorrect Answers
A: VLAN does not provide routing capabilities. A router is required by a VLAN to communicate between subnets and VLANs.
E: Cisco Discovery Frames are broadcast frames and are not contained within a VLAN

QUESTION NO 139
Which command(s) are required to configure the MLS-SE to participate in multilayerswitching with an RSM?

A. Set mls enable and set mls include *rsm ip address* commands in privilege mode.
B. No commands are required. MLS is enabled by default.
C. Set mls include command in privileged mode.
D. Set mls enable and set mls agingtime *number of seconds* commands in privileged mode.
E. Set mls enable and set mls vtp-domain *vtp domain name* commands in privileged mode.

Answer: B.
Explanation: On the switch, MLS is enabled by default. There is no need to specify the MLS-RP IP address if it is the RSM.

QUESTION NO 140
Which command configures a VLAN on a Catalyst 5500 series switch?

A. Set vlan mode mode
B. Set vlan vlan number
C. Set trunk mod/port number on isl
D. Set vlan [vlan name] [port number]

Answer: B
Explanation: To create a VLAN on a Catalyst 5500 switch enter the following command:

Switch (enable) set vlan [vlan_numner] [mod_num/port_list]

Option B is the closest to the proper command.

QUESTION NO 141
Click the exhibit button. Click the time button.
What is the correct MAC address, given the multicast IP address 244.180.163.4?

A. 00-01-5E-B4-A3-04
B. 01-00-5E-34-A3-04
C. 01-00-5E-C4-A8-08
D. 00-01-5F-B4-A3-04

Answer: B.
Explanation: The prefix 01.00.5E identifies the frame as multicast. Furtermore, the 23 least significant bits of the IP address should be used when calculating the 3 rightmost bytes. They are:
180-128=52, which is 34 hexidecimal.
163 is A3 hexadecimal.

QUESTION NO 142
When interconnecting two devices with a prebuilt copper cable, how do you determine if it is the correct cable type?

A. Check that distance limitation does not exceed the length of the cable.
B. Check the RJ-45 connector at both ends to determine if it is crossover or straight-through.
C. Check that one side of the cable is transmit only while the other side is transmit/receive.
D. Check the number of pins on one side of the RJ-45 cable connector.

Answer: B.
Explanation: To determine the cable type it is best to check the RJ-45 connectors at both ends to see if it is crossover or a straight-through cable.

QUESTION NO 143
Which statement is true about the embedded RMON agent and switch probe functions in the Catalyst Switch software?

A. The functions use all RMON groups as well as RMON2.
B. The functions can monitor segments as long as they use 10baseT or 100baseT.
C. The function of SwitchProbe offers an in-band link to the network manager.
D. RFC1757 RMON groups that are supported are statistics, events, history and alarms.
E. SPAN is an option of the SwitcProbe function

Answer: D.
Explanation: RMON is defined in RFC 1757 and is able to gather statistics, events, history and alarms.

QUESTION NO 144
The first step in determining spanning tree is to determine a root bridge. Which factor or factors determine who will become the root bridge?

A. The port ID.
B. The port cost.
C. The combination of the path cost and the MAC address.
D. The combination of the priority number and the MAC address.

Answer: D.
Explanation: For each VLAN, the network device with the highest bridge ID (the lowest numerical ID value) is elected as the root bridge. If all network devices are configured with the default priority (32768), the network device with the lowest MAC address in the VLAN becomes the root bridge.

Reference: Cisco, Configuring STP

QUESTION NO 145
Trunking protocol support is hardware/module dependent. In order to see which trunking modes are supported on any port on Catalyst 5000/6000 switches, which command should you enter?

A. Show trunk
B. Show interface

C. Show port hardware
D. Show port capabilities
E. Set trunk mod_num / port_num

Answer: D.

Explanation: The **show port capabilities** command will show you the capabilities of the modules and ports in a switch. For example the trunk encapsulation type, speed , and duplex.

QUESTION NO 146
You have been assigned to configure a VLAN interface on an internal route processor. After you define the VLAN interface, which is the next step in configuration process?

A. Define the network number.
B. Define the default gateway.
C. Assign IP routing to the interface.
D. Assign an unique IP address to the interface

Answer: D.
Explanation: A unique IP address must be assigned to the interface.

QUESTION NO 147
In which two situations would broadcast NOT be contained within the VLAN boundaries? (Choose two)

A. Host interface is constantly sending ICMP request.
B. Host interface is constantly sending frame fragments.
C. Host interface is constantly sending IP echo requests.
D. Host interface is constantly sending broadcast frames.
E. Host interface is constantly sending frames with CRC errors.

Answer: A, C
Explanation: ICMP requests, which is the same thing as IP Echo requests (or Pings), can be made to destinations outside the VLAN.

Incorrect Answers
B: Frame fragments would not be forwarded.
D: Broadcasts are contained with the VLAN. The VLAN functions as a logical boundary for broadcasts.

E: Frame with CRC errors will not be forwarded.

QUESTION NO 148
You bought a Catalyst 5000 switch with an internal route processor. Now you are concerned about routing traffic between different VLANs. What should you do?

A. define a default gateway on the RSM
B. assign the interface to a VTP domain
C. configure a VLAN interface for each VLAN
D. define the ISL encapsulation type and number on each interface

Answer: C
Explanation: Once you have created the desired number of VLANs on the supervisor engine, you need to configure a VLAN interface on the router module for each of the VLANs between which you want to route traffic.

Reference: Configuring InterVLAN Routing Using an Internal Router (Layer 3 Card) on Catalyst 5000 and 6000 Switches Running CatOS
http://www.cisco.com/warp/public/473/75.html

Question NO 149
On a Catalyst 5000, which command displays an MLS flow based on the IP address of the sending host?

A. show mls cache *ip-address*
B. show mls entry rp *ip-address*
C. show mls cache entry *ip-address*
D. show mls flow source *ip-address*
E. show mls entry source *ip-address*

Answer: E
Explanation: The **show mls entry source *ip-address*** should be used.

Syntax:
show **mls** r**p** {*ip_addr*} [noalias]
show **mls** entry {[destination {*ip_addr_spec*}] [source {*ip_addr_spec*}] | [flow {*protocol*} {*src_port* [*port_num*]} {*dst_port*}]} [rp {*ip_addr*}]
show **mls** include
show **mls** nde

Incorrect Answers
A: There is no such command.
B: The rp keyword specifies a route processor. However, we are interested in the IP address of the sending host.
C: There is no such command.
D: The **show mls flow source *ip-address*** command should not be used.

Question NO 150
What are two methods of stopping VLAN broadcasts from flooding trunk links that do NOT need these broadcast frames? (Choose two.)

A. enabling VLAN authentication
B. enabling VTP pruning on the switch
C. removing VLANs with the `clear trunk` command
D. removing VLANs with the `clear VTP NVRAM` command

Answer: B, C
Explanation:
To avoid having the number of logical ports blowing up, you may need to consider pruning unnecessary VLANs from the trunk. This can be done by using VTP pruning. Manual VTP pruning can be achieved with the **clear trunk** command.

Reference: Understanding and Configuring VLAN Trunk Protocol (VTP)
http://www.cisco.com/warp/public/473/21.html

Incorrect Answers
A: Authentication would not affect broadcasts.
D: This command does not apply here.

Question NO 151
What is the purpose of multilayer switching XTAGs?

A. to associate an access list to a connection
B. to assign a switch port to an incoming packet
C. to distinguish different flows from a single source
D. to distinguish the MAC addresses of multiple MLS-RPs

Answer: D
Explanation:
Each MSFC (Multilayer Switch Feature Cards) has its own XTAG value to identify itself as the MLS Route Processor. MSFC #1 (on the active supervisor engine) has an XTAG of 1, and MSFC #2 (on the standby supervisor engine) has an XTAG of 2.

Reference: Configuring Redundancy
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/sft_6_1/configgd/redund.htm

QUESTION NO 152
How is the designated querier elected in IGMPv2?

A. The first router to appear on a subnet is designated.
B. The host that responds first to the election query is designated.
C. The router with the lowest IP address on a subnet is designated.
D. The host with the lowest MAC address on a segment is designated.

Answer: C
Explanation: There is normally only one Querier per physical network. All multicast routers start up as a Querier on each attached network. If a multicast router hears a Query message from a router with a lower IP address, it MUST become a Non-Querier on that network.

Reference: RFC 2236, Internet Group Management Protocol, Version 2

Question NO 153
If you want Layer 4 information to be included in the MLS cache entries, which flow mask should you use?

A. IP-flow
B. Destination-IP
C. Source-Destination-IP
D. Layer 4 information is included by default.

Answer: A.

Explanation: Flow masks determine how NetFlow table entries are created. Only one flow mask (the most specific one) is supported for all statistics.

The three flow masks for IP MLS are as follows:

- **destination-ip**—The least-specific flow mask. The PFC maintains one MLS entry for each destination IP address. All flows to a given destination IP address use this MLS entry.
- **source-destination-ip**—The PFC maintains one MLS entry for each source and destination IP address pair. All flows between a given source and destination use this MLS entry regardless of the IP protocol interfaces.
- **ip-flow**—The most-specific flow mask. The PFC creates and maintains a separate MLS cache entry for each IP flow. An ip-flow entry includes the source IP address, destination IP address, protocol, and protocol interfaces.

Reference: Configuring IP Multilayer Switching
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/ios127xe/config/mls.htm#xtocid5

Question NO 154
Which statement is true about an MLS switching engine is true?

A. The MLS-SE uses CDP to discover and include external route processors.
B. An External MLS-RP must be manually included in the configuration of the MLS-SE.
C. The `set mls rp include` command is used to add an internal MLS-RP to the MLS-SE configuration.
D. The `clear mls include` command can be used to remove a built-in RSM from the MLS-SE configuration

Answer: B
Explanation: Internal MLS-RPs are included automatically, however for external MLS-RPs, one must explicitly inform the switch of the router's address.

Note: MLS-SE:Multilayer Switching- Switching Engine

Reference: Troubleshooting IP MultiLayer Switching
http://www.cisco.com/warp/public/473/13.html

Incorrect Answers
A: External route processors must be added manually.

C: Incorrect syntax. Syntax:
set **mls** include {*route_processor_ip* | *route_processor_name*}
D: Use the **clear mls include ip** (or **clear mls include ipx**) command to remove routers from the IP MLS-RP include list.

Question NO 155
Which type of IGMP message is sent when a network client wants to join a multicast group?

A. host membership query
B. host membership report
C. host membership status
D. host membership notification

Answer: B
Explanation: When a host joins a multicast group, it should immediately transmit an unsolicited Version 2 Membership Report for that group

Note:
There are three types of IGMP messages of concern to the host- router interaction:

Membership Query: used to learn which groups (or particular group) have members on an attached network.
Version 2 Membership Report, also known as Report
Leave Group

Reference: RFC 2236, Internet Group Management Protocol, Version 2

Incorrect Answers
A: Multicast routers send **host membership query** messages (**host-query** messages) to discover which multicast groups have members on the router's attached networks.
C, D: These does not apply to host-router interaction

Question NO 156
Which two statements are true about a trunk link? (Choose two.)

A. IEEE 802.10 can be used for Ethernet trunk links.
B. A trunk link can be associated with a native VLAN.
C. A trunk link is a more efficient use of physical interfaces and cabling.
D. A trunk link bonds multiple physical interfaces to work as one logical interface.

Answer: B, C
Explanation:
B: A trunk link can be associated with a native VLAN.
C: A trunk link is a more efficient use of physical interfaces and cabling.

Reference: Cisco, IEEE 802.10 VLAN Encapsulation
http://www.cisco.com/warp/public/473/741_3.html

Incorrect Answers
A: A Virtual LAN, IEEE 802.10, cannot be used for Ethernet trunk links.
D: Not true.

Question NO 157
Which command disables MLS on the route processor?

A. disable mls
B. no mls rp ip
C. set mls disable
D. set mls rp disable

Answer: B
Explanation: The **no mls rp ip** command disables MLS on the affected MLS-RP interface.

Note: Syntax of **set mls** command:
set mls agingtime [*agingtime*]
set mls disable
set mls enable
set **mls** include {*route_processor_ip* | *route_processor_name*}
set mls statistics protocol *protocol port_num*

Incorrect Answers
A: No such command.
C: Does not meet the requirement. The **set mls disable** command is used to disable IP shortcut functions, disable any NFCP message processing, delete any existing shortcut entries, and prevent new shortcut entries from being established.
D: Incorrect syntax (see note above)

Reference: Troubleshooting IP MultiLayer Switching
http://www.cisco.com/warp/public/473/13.html

Question NO 158
A Catalyst 5000/5500 switch with a NetFlow Feature card can perform MLS with which three devices? (Choose three.)

A. RSM
B. RSFC
C. Catalyst 8500
D. Catalyst 2948G-L3

Answer: A, B, C
Explanation:
A: Cisco IOS running on the RSM has the ability to instruct the NFFC hardware.
B: The RSFC (Route Switch Feature Card) or Route Switch Module (RSM) performs the route processing on the Catalyst switch with a NFFC-II
C: Routing Processing services can also be provided by an externally attached Catalyst 6000 with an MSM (currently supports unicast MLS only), Catalyst 8500, Cisco 7500, 7200, 4700, 4500, 3640 or 3620.

Note: The NetFlow Feature Card increases IP Multilayer Switching (MLS) performance.

Reference: Product Bulletin, No. 909, Catalyst 4000 and 5000 Family Supervisor Engine Software

Question NO 159
The multicast IP address 224.0.16.111 translates to which MAC address?

A. 00-01-E0-00-10-6F
B. 01-00-5E-00-10-6F
C. 00-01-5E-00-10-6F
D. 00-00-00-00-10-6F
E. E0-00-10-6F-FF-FF

Answer: B

Explanation: Once an application determines the class D IP multicast address it will utilize, that address must be mapped into a MAC layer multicast for delivery across any LAN based system. This process is outlined as follows:

Step 1: Using the Class D address, identify the low order 23 bits of the class D address.

Step2: Map those 23 bits into the low order 23 bits of a MAC address with the fixed high order 25 bits of the IANA's IEEE multicast addressing space prefixed by 01:00:5E.

In this scenario this translation to 01-00-5E-00-10-6F

Reference: Whitepaper, Enterasys LAN Switching, Deploying IP Multicast Switching Method of assuring globally unique MAC address mappings in an IP multicast environment.

Incorrect answers:
The Multicast MAC prefix is always 01-00-5e.

Question NO 160
A password is assigned to a VTP domain. Which encryption keying method should be used?

A. RSA
B. MD5
C. CHAP
D. 3DES

Answer: B
Explanation: If you configure a password for VTP, it needs to be configured on all switches in the VTP domain and it needs to be the same password. The VTP password you configure is translated using an algorithm in a 16 bytes word (MD5 value) carried in all summary-advertisement VTP packet.

Reference: Cisco, Understanding and Configuring VLAN Trunk Protocol (VTP)
http://www.cisco.com/warp/public/473/21.html#vtppass

Question NO 161
What is the maximum Ethernet frame size on a trunk link configured using ISL encapsulation?

A. 1496 Bytes
B. 1500 Bytes

C. 1518 Bytes
D. 1522 Bytes
E. 1548 Bytes

Answer: E
Explanation: If only Ethernet packets are encapsulated, the range of ISL frame sizes are from 94 to 1548 bytes.

Reference: Cisco, InterSwitch Link Frame Format
http://www.cisco.com/warp/public/473/741_4.html

Question NO 162
A company has redesigned its campus network to support three switch blocks that contain 2,000 users in each block. The network administrator wants to control broadcast domains to each individual switch block, while still allowing interVLAN routing within and between switch blocks?

What is the most appropriate device at the distribution layer?

A. Catalyst 4000 series switch
B. Catalyst 8500 series switch
C. Catalyst 6000 series switch with an internal MSFC
D. Catalyst 1900 with a two-port 100Base uplink module.

Answer: C
Explanation: A Catalyst 6000 series switch with an internal MSFC (Multilayer Switch Feature Card) is the most appropriate solution. Catalyst 6000 series switches use the MSFC and the Policy Feature Card (PFC) to gather and cache header information.

Note:
Catalyst 6000 Family switches equipped with MSFCs provide transparent Web Cache redirection using Cisco's Web Cache Communication Protocol v2 (WCCP). WCCP is the industry's leading web-cache redirection protocol that localizes network traffic and provides network- intelligent load distribution.

Question NO 163
The Multilayer Switch Feature card is a full-function IOS router installed as an integrated daughter card for the _____-

A. Catalyst 4000 series switch
B. Catalyst 6000 series Supervisor Engine
C. Cisco 7500, 7200, 4500, and 4700 series routers.
D. Catalyst 5000 series Supervisor IIG and Supervisor IIIG cards
E. Catalyst 5000 series Supervisor Engine III, FSX, or III FLX modules

Answer: B
Explanation: The Multilayer Switch Feature Card (MSFC) For the Catalyst 6000 Family delivers high performance multilayer switching and intelligent network services.

Reference: Data Sheet, Catalyst 6000 Family Multilayer Switch Feature Card

Question NO 164
Which multicast address is reserved for the purpose of sending to all hosts on a subnet?

A. 224.0.0.1
B. 224.0.0.2
C. 224.0.0.255
D. 239.0.0.255

Answer: A
Explanation: 224.0.0.1 is assigned to the permanent group of all IP hosts (including gateways). This is used to address all multicast hosts on the directly connected network.

Reference:
RFC 1458, Host Extensions for IP Multicasting
RFC 1700, ASSIGNED NUMBERS

Incorrect Answers
B: 224.0.0.2 All Routers on this Subnet
C: 224.0.1.27-224.0.1.255 Unassigned
D: 239.0.0.255 does not apply.

Question NO 165
What are three valid combinations of trunk modes for ports configured as link partners? (Choose three.)

A. On/On
B. On/Auto
C. Auto/Auto
D. Desirable/Auto
E. Nonegotiate/Desirable

Answer: A, B, D
Explanation:
A: On/On is a valid trunk mode combination.
B: An Auto port wants to become a trunk port but becomes a trunk only if the neighbor port asked the port to be a trunk.
D: Only ports in desirable and auto mode will negotiate a channel (either desirable-auto or desirable-desirable).

Note: The trunk modes are on, off, desirable, auto, and nonegotiate.

Reference: CCNP Switching Study Guide #640-504 (Sybex), page 118.

Incorrect Answers
C: Because auto switch ports will never ask, they only respond to trunk requests, two ports will never become a trunk if they are both set to auto.
E: A Desirable port becomes a trunk port only if the neighbor port is a trunk port set to on, desirable, or auto.

Question NO 166
A customer needs a distribution switch for a large campus with a high amount of Gigabit Ethernet port density. Which device is best based on performance?

A. 4908G-L3
B. 5000 series
C. 6000 series
D. 8500 series

Answer: C
Explanation: The Catalyst 6000 can provide up to 384 10/100 Ethernet connections, 192 100FX FastEthernet connections, and 130 Gigabit Ethernet ports.

Incorrect Answers
A, B: A 4908G-L3 switch or a Catalyst 5000 series switch are not capable of the required performance.
D The Cisco Catalyst 8500 is a core layer switch that provides high-performance switching.

Question NO 167
Which statement about CGMP is true?

A. IGMP snooping must be disabled before you can enable CGMP.
B. PIM must be disabled on an interface where CGMP is enabled.
C. CGMP ensures that all switch ports receive all multicast packets.
D. A CGMP-enabled switch summarizes IGMP information for connected routers.

Answer: A
Explanation: Before you enable CGMP on a switch, you must disable IGMP snooping if it is enabled. If you try to enable CGMP without first disabling IGMP snooping, an error message is generated.

Note: CGMP (Cisco Group Management Protocol) was first implemented by Cisco to restrain multicast traffic in a layer 2 network.
You can configure the switch to either snoop on Protocol Independent Multicast/Distance Vector Multicast Routing Protocol (PIM/DVMRP) packets or to listen to CGMP self-join packets.

Reference: Configuring Multicast Services
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_4_2/config/multi.htm

Incorrect Answers
B: There is no requirement to disable PIM (Protocol Independent Multicast) on the CGMP interface.
C: The idea of CGMP is restrain multicast traffic.
D: This is not the way it works.
In CGMP the multicast router is considered to be the server since it has done all the work and the layer 2 switch is the CGMP client that uses the router's information to construct its forwarding tables (CAM).

Question NO 168
Which Catalyst 5000 command enables IGMP snooping?

A. ip igmp enable
B. set igmp enable
C. ip igmp snooping enable
D. set igmp snooping enable

Answer: B

Explanation: Syntax:
set igmp {enable | disable}
Function: Enables or disables IGMP snooping on the switch.

Reference: Command-Line Interfaces,
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_5_2/cmd_ref/cli.htm

Question NO 169
What is advertised by a Catalyst switch in a VTP domain?

A. the VLAN ID of all known VLANs, the management domain name, and the total number of trunks links on the switch.
B. the VLAN ID of all known VLANs, a 1-bit canonical format (CFI Indicator), and the switch configuration revision number
C. the management domain, the switch configuration revision number, the known VLANs, and their specific parameters
D. a 2-byte TPID with a fixed value of 0x8100 for the management domain number, the switch configuration revision number , the known VLANs, and their specific parameters

Answer: C
Explanation: Each switch in the VTP domain sends periodic advertisements out each trunk port to a reserved multicast address. VTP advertisements are received by neighboring switches, which update their VTP and VLAN configurations as necessary.

The following global configuration information is distributed in VTP advertisements:

- VLAN IDs (ISL and 802.1Q)
- Emulated LAN names (for ATM LANE)
- 802.10 SAID values (FDDI)
- VTP domain name
- VTP configuration revision number
- VLAN configuration, including maximum transmission unit (MTU) size for each VLAN
- Frame format

Reference: Cisco, Configuring VTP
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_1/config/vtp.htm

Incorrect Answers
A: Not the total number of trunks on the switch.
B: Not a 1-bit canonical format (CFI Indicator).

D: Not management domain number, just the VTP domain name.

Question NO 170
Which partition of the VTP advertisement is modified when configuring a VTP password?

A. MD5 Digest
B. updater identity
C. management domain name
D. VTP configuration revision number

Answer: A
Explanation: If you configure a password for VTP, it needs to be configured on all switches in the VTP domain and it needs to be the same password. The VTP password you configure is translated using an algorithm in a 16 bytes word (MD5 value) carried in all summary-advertisement VTP packet.

Reference: Cisco, Understanding and Configuring VLAN Trunk Protocol (VTP)
http://www.cisco.com/warp/public/473/21.html#vtppass

Question NO 171
What is the benefit of the multicast TTL field?

A. It controls hop count for multicast traffic.
B. It ensures reliable delivery of multicast packets.
C. It controls which multicast groups will be forwarded.
D. It controls the flooding of multicast packets on a local subnet.

Answer: D
Explanation: Most current IP multicast implementations achieve some level of scoping by using the TTL field in the IP header. Typical MBONE (Multicast Backbone) usage has been to engineer TTL thresholds that confine traffic to some administratively defined topological region. The basic forwarding rule for interfaces with configured TTL thresholds is that a packet is not forwarded across the interface unless its remaining TTL is greater than the threshold.

Reference: RFC 2365, Administratively Scoped IP Multicast

Incorrect Answers
A: Hop count is not used.

B: Reliable delivery is not a concern of the TTL field.
C: Multicast groups are not used.

Question NO 172
Which VTP information does a Catalyst switch advertise on its trunk ports when using VTP? (Choose two.)

A. VTP mode
B. STP root status
C. negotiation status
D. management domain
E. configuration revision number

Answer: D, E
Explanation: Each switch in the VTP domain sends periodic advertisements out each trunk port to a reserved multicast address. VTP advertisements are received by neighboring switches, which update their VTP and VLAN configurations as necessary.

The following global configuration information is distributed in VTP advertisements:

- VLAN IDs (ISL and 802.1Q)
- Emulated LAN names (for ATM LANE)
- 802.10 SAID values (FDDI)
- *VTP domain name*
- *VTP configuration revision number*
- VLAN configuration, including maximum transmission unit (MTU) size for each VLAN
- Frame format

Reference: Cisco, Configuring VTP
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_1/config/vtp.htm

Question NO 173
Which statement about a trunk link is true?

A. A trunk link only supports the native VLAN for a given port.
B. A trunk link uses 802.10 to identify VLANs over an Ethernet backbone.
C. A trunk link connects multiple devices on a single subnet to a switch port.

D. The native VLAN of the trunk link is the VLAN to which the port will belong if that link becomes non-trunk.

Answer: D
Explanation:

Trunking is a way to carry traffic from several VLANs over a point-to-point link between the two devices. Two ways in which Ethernet trunking can be implemented are:

- ISL (Cisco proprietary protocol)
- 802.1Q (Institute of Electrical and Electronics Engineers (IEEE) standard)

The native VLAN is the VLAN to which the port will belong if that link becomes non-trunk.

Incorrect Answers
A: Frame Tagging can be used to support several VLANs on a single port.
B: ISL can very well be used over an Ethernet backbone.
C: A trunk link is used to connect only two devices.

Question NO 174
CGMP is set to which mode by default on a Cisco Catalyst 5000 switch?

A. enabled
B. disabled
C. auto-detect
D. enabled for IGMPv1 compatibility

Answer: B
Explanation: By default, CGMP is disabled.

Reference: Configuring Multicast Services
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_4_2/config/multi.htm

Question NO 175
Which information do CGMP-enabled switches and routers exchange using the CGMP protocol?

A. CAM table changes

B. summarized IGMP information
C. multicast join and leave events
D. multicast group to port assignement

Answer: C
Explanation: When the CGMP-capable router receives an IGMP control packet, it creates a CGMP packet that contains the request type (either join or leave), the multicast group address, and the Media Access Control (MAC) address of the host. The router sends the CGMP packet to a well-known address to which the CGMP-enabled switches listen.

Reference: Configuring Multicast Services
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_4_2/config/multi.htm

Question NO 176
Which two networking topologies does Gigabit Ethernet combine? (Choose two.)

A. ATM
B. FDDI
C. SONET
D. IEEE 802.3
E. FibreChannel

Answer: D, E
Explanation: The challenges involved in accelerating to 1 Gbps have been resolved by merging two technologies together: IEEE 802.3 Ethernet and ANSI X3T11 FiberChannel.

There are two Gigabit Ethernet standards which describe Ethernet systems that operate at 1000 Mbps. The 802.3z standard describes the specifications for the 1000BASE-X fiber optic Gigabit Ethernet system. The 802.3ab standard describes the specifications for the 1000BASE-T twisted-pair Gigabit Ethernet system.

Reference:
IEEE Std 802.3z-1998, Gigabit Ethernet.
Cisco, Technology Brief, Introduction to Gigabit Ethernet

Question NO 177
Catalyst 6000 troubleshooting begins with the Catalyst 6000 module located in the top slot of the chassis. What does this slot contain?

A. ping and Telnet utilities in the Route Switch Module
B. three Fast Ethernet ports that can connect to other systems
C. Interface Module with LEDs to indicate errors and load factor
D. a service port and network ports in the Supervisor Engine Module
E. embedded RMON, SwitchProbe, and Switched Port Analyzer (SPAN)

Answer: D
Explanation: The Catalyst 6000 family modules (module slots), ports, and VLANs are numbered starting with 1. The supervisor engine module is module 1, residing in the top slot.

Reference: Cisco, Command-Line Interfaces
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/sw_6_3/cmd_ref/cli.htm

Question NO 178
You must configure an Ethernet trunk between a Cisco switch and a non-Cisco switch. Which trunk encapsulation protocol should you use to ensure proper trunk operation?

A. ISL
B. LANE
C. IEEE 802.1Q
D. IEEE 802.10

Answer: C
Explanation:

Trunking is a way to carry traffic from several VLANs over a point-to-point link between the two devices. Two ways in which Ethernet trunking can be implemented are:

- ISL (Cisco proprietary protocol)
- 802.1Q (Institute of Electrical and Electronics Engineers (IEEE) standard)

In this scenario we must use 802.1Q since one of devices is non-Cisco.

Question NO 179

You have a large, flat network that is experiencing congestion. You want to create VLANs with smaller subnets on your Layer 2 switch to increase performance. Your only router is equipped with 10BaseT Ethernet ports.

How can you accomplish the assigned task?

A. use separate physical links from the router to the switch for each VLAN
B. move each new subnet to a separate router interface and route all traffic
C. enable ISL trunking on the router and pass all VLAN traffic on a single link
D. enable 802.1Q trunking on the router to pass all VLAN traffic on a single link

Answer: A
Explanation: We should use separate links for the VLAN between the router and the switch for better performance.

Question NO 180
Ports are failing to operate at the correct speed and duplex mode. You are experiencing packet errors such as collisions and late collisions. You are also experiencing slow performance and connectivity problems. You want to set the transmission of the port to transmit data in both directions simultaneously.

Which command should you use?

A. set port *mod/port* two-way
B. set port two-way *mod/port*
C. show port *mod/port* duplex full
D. set port duplex *mod/port* full

Answer: D

Explanation: To enable simultaneous data transmission we must configure the port for full duplex. To set the duplex mode of a port, use the

set port duplex *mod/port* {**full** | **half**}

command in privileged mode. In this scenario we should use the full option.

Reference: Cisco, Configuring Ethernet and Fast Ethernet Switching
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_2/_config/ether.htm

Question NO 181
Which statement about static VLANs is true?

A. Devices use DHCP to request their VLAN.
B. Attached devices are unaware of any VLANs.
C. Devices are assigned to VLANs based on their MAC addresses.
D. Devices are in the same VLAN regardless of which port they attach to.

Answer: B
Explanation: LAN port VLAN membership can be assigned manually on an port-by-port basis. When you assign LAN ports to VLANs using this method, it is known as port-based, or static, VLAN membership. Attached devices will be unaware of any VLANs.

Incorrect Answers
A: The DHCP service is not involved in VLAN assignment.
C: Devices are not assigned to VLAN based on their MAC addresses.
D: Static VLANs are configured port by port basis.

Reference: Configuring VLANs
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/121_8aex/swconfig/vlans.htm

Question NO 182
Which statement about the operating mode of 10/100 switch port is true?

A. 10 Mbps Ethernet links default to full duplex
B. Disabling Auto-negotiation also disable CSMA/CD
C. Setting port speed to Auto also sets duplex mode to Auto
D. Fast Ethernet port attempt to negotiate half duplex first.

Answer: C
Explanation: The set port speed {mod_num/port_num} auto command also sets the duplex mode to auto.

Reference: Cisco, Configuring and Troubleshooting Ethernet 10/100/1000Mb Half/Full Duplex Auto-Negotiation
http://www.cisco.com/warp/public/473/3.html

Question NO 183
The `set span` command on the Catalyst 5000 switch is used for what purpose?

A. configuring spanning tree
B. configuring vlan trunking
C. configuring port mirroring
D. configuring translational bridging

Answer: C
Explanation: The Switched Port Analyzer (SPAN) feature, sometimes called port mirroring or *port monitoring*, selects network traffic for analysis by a network analyzer such as a SwitchProbe device or other Remote Monitoring (RMON) probe.

Reference: Configuring the Catalyst Switched Port Analyzer (SPAN) Feature
http://www.cisco.com/warp/public/473/41.html

Question NO 184
What are the three default port settings in a Catalyst switch? (Choose three.)

A. The MTU is set to 1500.
B. The speed is set to 100.
C. The duplex mode is set to full.
D. All ports are assigned to VLAN 1.
E. The VLAN type is set to Ethernet.

Answer: A, D, E
Explanation:
A: By default, the MTU is set to 1500.
B: By default all ports are assigned to VLAN 1.
E: The VLAN type is set to Ethernet by default.

Incorrect Answers
B: The default speed is set to **Auto.**
D: The default duplex mode is **Auto.**

Question NO 185
Which command restricts Telnet traffic into a router?

A. route-list
B. access-list
C. access-class
D. access-group
E. distribute-list

Answer: B
Explanation: Cisco provides basic traffic filtering capabilities with access control lists (also known as access lists). Access lists can be configured for all routed network protocols (IP, AppleTalk, Telnet, and so on) to filter the packets of those protocols as the packets pass through a router.

You can configure access lists at your router to control access to a network: access lists can prevent certain traffic from entering or exiting a network.

Syntax: **access-list** *access-list-number* {**permit** | **deny**} *type-code wild-mask*
We should specify deny and select telnet as type-code.

Reference: Cisco, Access Control Lists: Overview and Guidelines
http://www.cisco.com/univercd/cc/td/doc/product/software/ios121/121cgcr/secur_c/scprt3/scdacls.htm

Question NO 186
How should you configure interVLAN routing with Layer 2 switches and a router with 10BaseT ports?

A. use ISL trunking
B. use IEEE 802.1Q trunking
C. configure two subnets on the same router interface
D. run a physical link from the router to the switch for each VLAN

Answer: D
Explanation: Routing is required for interVLAN communication. Each VLAN should be connect to the router on a separate physical link..

Reference:
Incorrect Answers
A, B: Either ISL trunking or IEEE 802.Q trunking could be used.
C: Not adequate.

Question NO 187
You want to connect a host on a Token Ring network with a host on an Ethernet network. The preference is that they be in the same VLAN and that they only be processed at Layer 2.

Which statement is true?

A. It requires the use of the SAID field.
B. VLAN membership is media dependent.
C. It requires the use of transparent bridging.
D. It requires the use of translational bridging.

Answer: D
Explanation: Translational bridging is required since the Frame Types are different.

Reference: Configuring Token Ring Inter-Switch Link
http://www.cisco.com/univercd/cc/td/doc/product/software/ios120/12cgcr/ibm_c/bcprt1/bcvlan.htm

Question NO 188
Which command configures a default gateway on a Catalyst 3500XL switch?

A. Switch (config)# ip route *ip address*
B. Switch (enable) set ip route *ip address*
C. Switch (enable) ip route-default *ip address*
D. Switch (config))# ip default-gateway *ip address*
E. Switch (enable) set ip default-gateway *ip address*

Answer: D
Explanation: The Catalyst 3500XL (and the Catalyst 2900XL) series the **ip default-gateway** command is used to set the default.

Reference: Upgrading Software Images and Working with Configuration Files on Catalyst Switches
http://www.cisco.com/warp/public/473/10.html#4b

Question NO 189
Which logical operation do Cisco switches use to determine which link sends traffic for EtherChannel?

A. OR
B. AND
C. XOR
D. NAND

Answer: C

Question NO 190
What is one method to reduce BPDU traffic in a congested Ethernet network with only one Root Bridge?

A. remove redundant links between switches
B. decrease the MaxAger timer on all non-Root Bridges
C. increase the BPDU Hello timer only on the Root Bridge
D. increase the Path Cost on the Designated Port on all non-Root Bridges

Answer: C
Explanation: Less BPDU traffic.

Incorrect Answers
A: Redundant links is not used when STP is in use. STP use BPDU traffic.
B: Counterproductive.
D: No affect on BPDU traffic.

Question NO 191
Which two features used by Catalyst switches allow faster STP convergence? (Choose two.)

A. LinkFast
B. FastStart
C. UplinkFast
D. BackBoneFast

Answer: C, D
Explanation: The UplinkFast feature provides fast convergence in the network access layer after a spanning tree topology change by using uplink groups.
The BackboneFast feature provides fast convergence in the network backbone after a spanning tree topology change occurs.

Reference: Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_1/config/stp_enha.htm

Question NO 192
What is the minimum type of cable required to connect a workstation to a 10BaseT switch port?

A. Cat-3 patch cable
B. RG-58 coaxial cable
C. CAT-5 crossover cable
D. RJ-45-to-RJ-45 rollover cable

Answer: A
Explanation: Cat 3 cabling support 10MBit traffic. Patch cables are wired straight through since the cable from the workstation to the hub or switch is normally crossed over automatically at the switch or the hub.

Incorrect Answers
B: Coaxial cable, RG-58, are use on Thicknet, not on 10BaseT.
C: Only category 3 is needed, furthermore we don't need a crossover cable.
D: Not needed. A rollover cable can be used to connect a workstation or dumb terminal to the console port on the back of a router or Ethernet switch

Question NO 193
Which statement is true about the STP Path Cost on a particular port?

A. It is known only to the local switch where the port resides.
B. It can be modified to help determine Root Bridge selection.
C. Modifying it can cause TCN BPDU to be set to the Root Bridge.
D. When increased, it can provide higher bandwidth to a connecting port.

Answer: A
Explanation: The STP Path Cost is known only to the local switch.

Reference:
Cisco, Configuring STP
http://www.cisco.com/univercd/cc/td/doc/product/lan/c3550/1218ea1/3550scg/swstp.htm#xtocid38
Understanding Spanning-Tree Protocol Topology Changes
http://www.cisco.com/warp/public/473/17.html

Incorrect Answers
B: The switch priority, not Path costs, is used to determine the Root Bridge selection.
C: The exact definition is of a Topology Change is:
- When a port that was forwarding is going down (blocking for instance).
- When a port transitions to forwarding and the bridge has a designated port. (This basically means that the bridge is not standalone.)

A topology change notification (TCN) would not be send when a Path cost is changed on a port.
D: This is completely opposite. You assign lower cost values to interfaces that you want selected first and higher cost values that you want selected last.

Question NO 194
About how long does it take for the port to change from blocking to forwarding when spanning-tree PortFast is enabled?

A. immediately
B. 15 seconds
C. 20 seconds
D. 30 seconds
E. 50 seconds

Answer: A
Explanation: The portfast feature is a Cisco proprietary change in the STP implementation. The command is applied to specific ports and has two effects:
- Ports coming up are *put directly in the forwarding STP mode*, instead of going through the learning and listening process..
- The switch never generates a TCN when a port configured for portfast is going up or down.

Reference: Cisco, Understanding Spanning-Tree Protocol Topology Changes
http://www.cisco.com/warp/public/473/17.html

Question NO 195
Which statement about the Spanning-Tree Protocol is true?

A. The Spanning-Tree Protocol is disabled by default.
B. The Spanning-Tree Protocol is enabled with the `spantree` on command.

C. If the Spanning-Tree Protocol is enabled for a VLAN, it is enabled for all ports on the VLAN.
D. If the Spanning-Tree Protocol is enabled on a switch, it must be enabled for all ports on the switch.

Answer: C

Question NO 196
Which command identifies whether the hardware supports EtherChannel on a Catalyst 5000?

A. show trunk
B. show interface
C. show port channel
D. show port capabilities

Answer: D

Explanation: The **show port capabilities** command will show you the capabilities of the modules and ports in a switch. For example the type, speed , and duplex.

Incorrect Answers
A: Trunking information does not include the required information.
B: Interface configuration information does not include the required information.
C: Use the **show port channel** command to display EtherChannel information for a specific module or port. It will not show the capabilities of the switch of the switch however.

Question NO 197
Which flow mask is used if NO access list are configured on any of the MLS router interfaces?

A. IP-Flow
B. Input-Output
C. Destination-IP
D. Source-Destination

Answer: C
Explanation: Flow masks determine how NetFlow table entries are created. Only one flow mask (the most specific one) is supported for all statistics.

The three flow masks for IP MLS are as follows:

- **destination-ip**—The least-specific flow mask. The PFC maintains one MLS entry for each destination IP address. All flows to a given destination IP address use this MLS entry.
- **source-destination-ip**—The PFC maintains one MLS entry for each source and destination IP address pair. All flows between a given source and destination use this MLS entry regardless of the IP protocol interfaces.
- **ip-flow**—The most-specific flow mask. The PFC creates and maintains a separate MLS cache entry for each IP flow. An ip-flow entry includes the source IP address, destination IP address, protocol, and protocol interfaces.

Reference: Configuring IP Multilayer Switching
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/ios127xe/config/mls.htm#xtocid5

Question NO 198
Which three Catalyst models use the set-based CLI commands? (Choose three.)

A. 2900XL
B. 2948G
C. 3500XL
D. 4000
E. 6500

Answer: B, D, E(?)
Explanation: A 2948G, 4000, 5000, and 6000 switch use set based CLI commands.

Incorrect answers:
2900XL and 3500XL switches do not use set based CLI commands.

Question NO 199
Which network equipment is required for interVLAN routing?

A. ISL
B. switch block
C. IEEE 802.1Q
D. access switch
E. route processor

Answer: E
The traffic has to be routed between the VLANs. A routing mechanism has to be provided for interVLAN communication.

Incorrect Answers
A, C: Either IEEE 802.1Q or ISL trunking protocol can be used.
B, D: Of no use for interVLAN routing.

QUESTION NO: 200
IGMP Version 2 is an improvement to the original IGMP Version 1. Which of the following enhancements were made in IGMP Version 2?

A. The heartbeat message type was added.
B. The join request message type was added.
C. The leave report message type was added.
D. The status report message type was added.
E. The membership report message type was added.

Answer: C
Explanation: The Leave report (or Leave group) message type was added in Version 2.0.

Note:
IGMP Version 2 has the Membership Query, the Membership Report, and the Leavee Group message type. IGMP Version 1 has only two messages types of IGMP message of concern to hosts: Host Membership Query and Host Membership Report

Reference: RFC 2236, Internet Group Management Protocol, Version 2

QUESTION NO: 201
You want to enable the Cisco Group Management Protocol on a switch. What statement is valid?

A. PIM must be configured on the CGMP router.
B. Directed broadcasts must be disabled on all CGMP switches.
C. CGMP must be enabled separately for each VLAN where it is desired.
D. The switch must be configured with the ip addresses of all neighboring routers.

Answer: A

Explanation: Protocol Independent Multicast (PIM) is one of the required elements for multicast configuration. It enables IGMP on the router and allows it to receive and forward traffic on the specified interface. PIM must be enabled on every interface that is to participate in the multicast network.

Reference: Sybex CCNP 640-504, Enabling PIM on an interface, page 391

Incorrect Answers
B: There is no requirement to disable directed broadcasts.
C: CGMP is enabled for a device, not for each VLAN.
The **set cgmp enable** command is used to enable CMGP support for IP multicast on a switch.
D: This is not required.

QUESTION NO: 202
Layer 2 broadcast traffic has which property?

A. It is blocked by Layer 3 devices.
B. A new packet is sent each time the client requests it.
C. It is the most efficient way to send data to a small group of clients.
D. Each frame uses a special address for which only interested clients listen.

Answer: A
Explanation: Layer 2 broadcasts are blocked by routers, Layer 3 devices.

Incorrect Answers
B: Each broadcast is only send once.
C: Multicast is more efficient. Broadcast reach all clients, multicast will only reach the member of the multicast group.
D: All clients on the subnet receives the broadcast traffic.

QUESTION NO: 203
Internet Group Management Protocol (IGMP) Version 2 was introduced in RFC2236 as an improvement to the original IGMP (RFC 1112). What was fixed in version 2?

A. leave and join latencies
B. the potential for infinite loops
C. mapping multicast IP addresses to MAC addresses
D. lack of coordination between Layer 2 and Layer 3 devices.

Answer: A
Explanation: The Leave process in version 2 was included to avoid long time-outs that are experienced in version 1.

Reference: RFC2236, Internet Group Management Protocol Version 2

QUESTION NO: 204
How does multicast function?

A. A server sends one copy of each packet to a Class D address.
B. A web server transmits separate content to each client.
C. The application server services each client connection individually.
D. A router sends the protocol information to all clients on the network.

Answer: A
Explanation: Multicast uses Class D address as destination.

Incorrect Answers
B: Multicast does not include a web server. Furthermore, all selected clients receive the same information.
C: All selected clients receive the same information.
D: Only selected clients receive the information, not every client.

QUESTION NO: 205
You are setting up a VLAN trunk over Fast Ethernet. In which trunk mode should you set the local port so that it can respond to a request from the link partner and become a trunk?

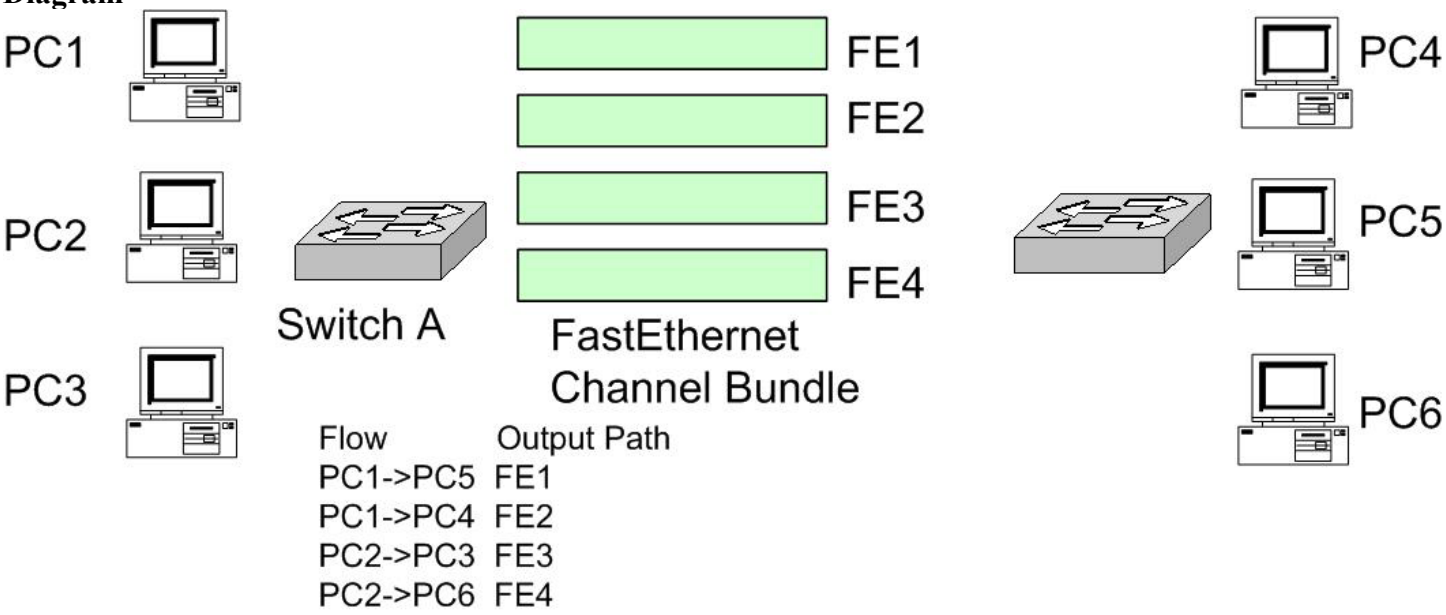
A. Auto
B. Negotiate
C. Designate
D. Nonegotiate

Answer: A
Explanation: Only ports in desirable and auto mode will negotiate a channel (either desirable-auto or desirable-desirable). Ports in on mode will only form a functional channel with other ports in on mode (they will not negotiate a channel with ports in desirable or auto mode).

Reference: Cisco, Troubleshooting Tips

http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/trbl_ja.htm

QUESTION NO: 206
Diagram



Fast EtherChannel has been setup correctly. What would happen with traffic flow between PC1 and PC5 in FE1 fails?

A. Traffic is transferred to FE2.
B. Traffic is transferred to FE4.
C. PC1 to PC4 traffic is distributed over the remaining links.
D. The session is disconnected while spanning tree rebuilds.

Answer: C
Explanation: If a port within an EtherChannel fails, traffic previously carried over the failed port switches to the remaining ports within the EtherChannel.

Note: Fast/Gigabit EtherChannel allow high-speed redundant links in a spanning tree by allowing dual parallel links to be treated as though they were one link. If a link is lost in a Fast/Gigabit EtherChannel netowork, traffic rerouted to one of the other links in just a few milliseconds.

Reference: Configuring Fast EtherChannel and Gigabit EtherChannel
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat4000/rel7_1/config/channel.htm

QUESTION NO: 207
You are a service technician and must troubleshoot a 2912XL switch. You want to learn the default gateway on the management interface of the switch. Which command should you use?

A. show ip
B. show manage
C. show default
D. show interface ip

Answer: A
Explanation: The **show ip** command would provide the required information.

Incorrect Answers
B: There is no such command.

C: The **show default** command is used to check the status of the default port status setting.

D: The **show interface** command is used to display information on network interfaces.

QUESTION NO: 208
You must specify the trunk encapsulation mode for one port on a Catalyst 3500XL switch. Which IOS command should you issue?

A. Switch(config)#vtp mode
B. Switch(config-if)#set trunk
C. Switch(config-if)#encapsulation
D. Switch(config-if)#switchport trunk encapsulation

Answer: D
Explanation: The **switchport trunk encapsulation** command is used to specify the trunk encapsulation mode for a port.

Note: Ethernet Trunk Encapsulation Types

Encapsulation	**Function**
switchport trunk encapsulation isl	Specifies ISL encapsulation on the trunk link.
switchport trunk encapsulation dot1q	Specifies 802.1Q encapsulation on the trunk link.

switchport trunk encapsulation negotiate	Specifies that the interface negotiate with the neighboring interface to become an ISL (preferred) or 802.1Q trunk, depending on the configuration and capabilities of the neighboring interface.

Incorrect Answers

A: VTP can run in three modes: server, client, and transparent. The **vtp mode** command is used to set the VTP mode, but it cannot be used to specify the trunk encapsulation mode.

B: The **set trunk** command to configure trunk ports and to add VLANs to the allowed VLAN list for existing trunks. However, we want to set the encapsulation mode, not the trunk mode.
Note: Syntax: **set trunk** *mod/port* {**on** | **off** | **desirable** | **auto** | **nonegotiate**}[*vlans*] [**isl** | **dot1q** | **negotiate**]

C: The **encapsulation** command would only list is used to specify the encapsulation of the VLAN, not the trunk encapsulation.

QUESTION NO: 209
RSM modules provides Layer 3 functionality for switches. For which of the following switches can the RSM module be used?

A. Catalyst 4000 series
B. Catalyst 5000 series
C. Catalyst 6000 series
D. Catalyst 8500 series

Answer: B
Explanation: The Route Switch Module (RSM) provides routing support for the Catalyst 5000 series switches.

Reference: Configuring the Route Switch Module
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_2_3/config/08rsm.htm

QUESTION NO: 210
The CIO asks you why the company should spend the extra money for a switched Ethernet compared to a shared Ethernet. Which two advantages of switched Ethernet can you present to the CIO? (Choose two.)

A. It provides greater scalability
B. It is less complex to manage
C. It permits full-duplex operation

D. It simplifies routing between LAN segments

Answer: A, C
Explanation:
A: A switched Ethernet has more collision domains, and each collision domain is smaller compared to Shared Ethernet. A switched Ethernet can therefore support more nodes compared to shared Ethernet.
C: A switched connection may support full-duplex operation. Shared Ethernet is only half duplex.

Incorrect Answers
B: A shared Ethernet requires less administration compared to a switched Ethernet.
D: Switches operates at Layer 2, the data link layer. Routing is performed at Layer 3, the network layer.

QUESTION NO: 211
You accidentally disabled multilayer switching on a Catalyst 5000 switch. How can you re-enable it?

A. mls rp ip
B. set mls on
C. mls enable
D. set mls enable

Answer: D
Explanation: To enable Multilayer Switching (MLS) on the switch, issue the command **set mls enable**.

Note: Use the **set mls** command set to configure the MLS feature in the Catalyst 5000, 2926G, and 2926 series switches.

Incorrect Answers
A: The command **mls rp ip** does not apply here. It is used to enable MLS for external routers. The **mls rp ip** command globally enables the MultiLayer Switching Protocol (MLSP).
B: The **set mls on** command is incorrect. **On** cannot be used in this way,
C: This comment does not exist.

QUESTION NO: 212
You want to change the VTP domain name on your Catalyst 3500XL switch. Which command should you use to accomplish this?

A. Switch(vlan)#vtp domain *domain-name*
B. Switch(config)#vtp domain *domain-name*
C. Switch(vlan)#set vtp domain *domain-name*
D. Switch(enable) set vtp domain *domain-name*

Answer: A
Explanation: The **vtp domain name** command is used to assign a name to the VTP management domain on a Catalyst 3500XL switch. Furthermore the prompt would look like: **Switch(vlan)#** on a switch of this type.

Incorrect Answers
B: This command would be correct on a 1900 series switch, not on a Catalyst 3500XL switch..
C: The **set vtp domain name** command must be issued in enable mode.
D: This command would be correct on a Catalyst 5000 switch, not on a Catalyst 3500XL switch.

QUESTION NO: 213
You need to provide access for more than 100 switched users. Which of the following switches provides the lowest price per port in this scenario?

A. Catalyst 1900 series
B. Catalyst 3500XL series
C. Catalyst 5000 series
D. Catalyst 85000 series

Answer: C
Explanation: A Catalyst 5000 series switch would be the optimal solution in this scenario.

QUESTION NO: 214
Consider specific conversation between a source and a destination. The conversation takes place within a specific period of time. What is this type of conversation called when used in MLS?

A. flow
B. session
C. connection
D. datastream

Answer: A

Explanation: MLS network traffic consists of many end-to-end conversations, or flows, between users or applications. A flow is a unidirectional sequence of packets between a particular source and destination that share the same protocol and transport-layer information.

Rerefence: Cisco, Configuring IP Multilayer Switching

QUESTION NO: 215
The Mac Address Table contains Multilayer Switching (MLS) cache entries. Which is the default aging time for entries for which a flow has been established?

A. 5 seconds
B. 60 seconds
C. 130 seconds
D. 256 seconds
E. 300 seconds
F. 512 seconds

Answer: D
Explanation: The default IP Multilayer switching aging time is 256 seconds.

Note: The **mac-address-table aging-time** command is used to configure the aging time for entries in the Layer 2 table.
Syntax: **mac-address-table aging-time** *seconds* [**vlan** *vlan_id*]

Valid aging time values are 0 and from 10 to 1,000,000 seconds.

QUESTION NO: 216
What global configuration information is distributed by VTP advertisements?

A. VTP mode
B. VLAN names
C. VLAN description
D. VTP configuration revision number

Answer: B, D

Explanation: Each switch in the VTP domain sends periodic advertisements out each trunk port to a reserved multicast address. VTP advertisements are received by neighboring switches, which update their VTP and VLAN configurations as necessary.

The following global configuration information is distributed in VTP advertisements:

- VLAN IDs (ISL and 802.1Q) **(A)**
- Emulated LAN names (for ATM LANE)
- 802.10 SAID values (FDDI)
- VTP domain name
- VTP configuration revision number **(D)**
- VLAN configuration, including maximum transmission unit (MTU) size for each VLAN
- Frame format

Reference: Cisco, Configuring VTP
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_1/config/vtp.htm

QUESTION NO: 217
Access layer switches are best described as____

A. low cost
B. intervlan routing
C. robust Layer 3 throughput
D. high port density to connect to end users

Answer: A, D
Explanation: Access layer switches are used at the edge of the network, at the LANs. The main purpose is to give network access to end users. Access layer switches should be low cast and have many ports.

Note: Cisco uses the concepts of Access Layer, Core Layer, and Distribution Layer.

Reference: White Paper, Getting the Edge in Switching: What to Look for in a LAN Access Switch

Incorrect Answers
B: Access switches are not used for WAN connectivity.
C: Access layered switched have, at least historically, been used at Layer 2.

QUESTION NO: 218

There are multiple trunking methods. The two most popular are ISL and IEEE 802.1Q trunk encapsulation. Which of the following switches support both ISL and IEEE 802.1Q? (Choose two.)

A. Catalyst 2900XL
B. Catalyst 2948G
C. Catalyst 3500XL
D. Catalyst 4000

Answer: A, C
Explanation: Catalyst 2900XL and Catalyst 3500X switches supports both ISL and IEEE 802.1Q trunk encapsulation.

Reference: Sample Configuration: ISL/802.1q Trunking between Catalyst 2900XL/3500XL/2950 and CatOS Switches
http://www.cisco.com/warp/public/473/43.html

QUESTION NO: 219
The MLS-SE creates cache entries in the MLS cache. What does the MLS-SE use to decide which candidate cache entries should be added to the MLS cache?

A. when it receives a TCP SYN packet
B. when an MLS cache entry did not exist for the flow
C. when the frame was designed for the MLS-RP MAC address
D. after it forwards a pre-determined number of frames for the same flow
E. when it receives an MLSP message from the MLS-RP to create a candidate entry

Answer: B, E
Explanation:
B: An MLS cache entry is created for the initial packet of each flow. Upon receipt of a packet that does not match any flow currently in the MLS cache, a new IP MLS entry is created.
E: If all three of the following criteria are met, the MLS-SE completes the shortcut cache entry.
The source MAC address is from an MLS-RP.
- The destination IP matches the destination IP of a candidate packet.
- The source MAC address is associated to the same XTAG value as the candidate packet's destination MAC address.

Note: An IP MLS network topology consists of
- The MLSP routing protocol for MLS.
- Multilayer Switching-Switching Engine (MLS-SE)

- Multilayer Switching-Route Processor (MLS-RP)

Reference: Cisco, Configuring IP Multilayer Switching
CCMP 640-504 Switching, Identifying Candidate Packets, pages 270-271.

QUESTION NO: 220
In interface configuration mode, which commands assign a route processor interface to a VTP domain?

A. mls rp vlan-id *domain-name*
B. set mls domain *domain-name*
C. mls rp vtp-domain *domain-name*
D. set mls vtp-domain *domain-name*

Answer: C
Explanation: The **mls rp vtp-domain** command, applied in interface configuration mode, is used to assign a Multilayer Switching (MLS) interface to a specific Virtual Trunk Protocol (VTP) domain on the Multilayer Switching-Route Processor.

Incorrect Answers
A: Thje **mls rp vlan-id** command is used to assign a virtual LAN (VLAN) identification number to an MLS interface.
B, D: There are no such commands.

QUESTION NO: 221
You must configure a port as a trunk port on a Catalyst 3500XL switch. Which IOS command should you issue?

A. Switch(config)#vtp mode
B. Switch(config-if)#set trunk
C. Switch(config-if)#encapsulation
D. Switch(config-if)#switchport trunk encapsulation

Answer: D
Explanation: The **switchport trunk encapsulation** command is used to specify the trunk encapsulation mode for a port.

Note: Syntax: **set trunk** *mod/port* {**on** | **off** | **desirable** | **auto** | **nonegotiate**}[*vlans*] [**isl** | **dot1q** | **negotiate**]

Incorrect Answers
A: VTP can run in three modes: server, client, and transparent. The **vtp mode** command is used to set the VTP mode.
B: The **set trunk** command to configure trunk ports and to add VLANs to the allowed VLAN list for existing trunks.
C: The **encapsulation** command would only list is used to specify the encapsulation of the VLAN,

QUESTION NO: 222
Which of the following switches support the IOS-based user interface?

A. Catalyst 2924XL
B. Catalyst 2926
C. Catalyst 4003
D. Catalyst 5500

Answer: A
Explanation: Catalyst 2924XL has an IOS-based user interface.

Note: Switches can either be IOS-based or set-based.
With IOS based user interface you can configure the switch from a CLI (command line interface) that is very similar to the ones used on Cisco routers.Catalyst 1900, 2820, and 2900 switches can be used with an ISO-based CLI.

Set-based user interface uses older, set-bases CLI configuration commands. The Cisco switches that use the set-based CLI are the 2926 series, the 1945G, the 4000, the 5000, and the 6000 series.

QUESTION NO: 223
A new network technician asks you what the use of the `show mls entry` command is on a Catalyst 5000 switch. What should you reply?

A. It displays the contents of the MLS cache.
B. It shows the routing table for the MLS-RP.
C. It shows the total number of packet switched.
D. It displays all known MLS-RP and associated information.

Answer: A
Explanation: The **show mls** command is used to display MLS Layer 3 packet information in the MLS-based Catalyst 5000, 2926G, and 2926 series switches. There are several ways to view MLS cache entries with the **show mls** command. The base command is **show mls entry**.

Here is an example of the output produced by the **show mls entry** command:

```
ConsoleTK> (enable) show mls entry
Destination IPSource IPPrDstPtSrcPtDestination MacVlanPort
-------------------------------------------------------------------------
MLS-RP 172.20.25.1:
172.20.22.14172.20.25.10UDP805064800-60-70-6c-fc-2242/1
MLS-RP 172.20.26.1:
172.20.20.15172.20.25.148UDP506508000-60-70-6c-fc-2322/2
MLS-RP 172.20.27.1:
172.20.22.16172.20.27.139TCPDNSDNS00-60-70-6c-fc-2442/3
172.20.21.17172.20.27.138TCP7001700300-60-70-6c-fc-2532/4
ConsoleTK> (enable)
```

Syntax:
show mls
show **mls** r**p** {*ip_addr*} [noalias]
show **mls** entry {[destination {*ip_addr_spec*}] [source {*ip_addr_spec*}] | [flow {*protocol*} {*src_port* [*port_num*]} {*dst_port*}]} [rp {*ip_addr*}]
show **mls** include
show **mls** nde

If you enter the **show mls** commands with no arguments, general MLS information and all MLS-RP information are displayed.

When you enter the **show mls entry** command, the keyword **destination** option specifies the entries matching this destination IP address specification. The keyword **source** option specifies the entries matching this source IP address specification. An *ip_addr_spec* can be a full IP address or a subnet address. If you do not specify a keyword, it is treated as a wildcard, and all entries are displayed.

QUESTION NO: 224
A switch can be configured to work in different VTP modes. You want the switch to receive and forward VTP updates, but it should not participate in any VTP synchronization.
Which VTP mode should you configure your switch to operate in?

A. Client

B. Server
C. Transparent
D. Pass-through

Answer: C
Explanation: VTP can run in three modes: server, client, and transparent. VTP transparent switches do not participate in VTP. A VTP transparent switch does not advertise its VLAN configuration and does not synchronize its VLAN configuration based on received advertisements. However, in VTP version 2, transparent switches do forward VTP advertisements that they receive out their trunk ports.

Reference: Configuring VTP
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_6_1/config/vtp.htm

Incorrect Answers
A: VTP clients are also involved in synchronization.
B: VTP servers advertise their VLAN configuration to other switches in the same VTP domain and synchronize their VLAN configuration with other switches based on advertisements received over trunk links. We don't want the switch to be participating in VTP synchronization.
D: Pass-through is not a VTP mode.

QUESTION NO: 225
You want to examine the spanning-tree port state of one interface on your Catalyst 5000 switch. Which command you use?

A. show span
B. show port
C. show spantree
D. show config spanning

Answer: C
Explanation: The **show spantree** command to display spanning tree information for a VLAN.
The output includes Port, Vlan, Port-State, Cost, Priority, Portfast, Channel_id.

Note: Syntax
show spantree [*vlan* | *mod*/*port***] [active**]

QUESTION NO: 226
A new network technician asks you what the use of the `show mls include` command is on a Catalyst 5000 switch acting as an MLS-SE. What should you tell network technician?

A. It is used to display all entries in the MLS cache.
B. It is used to display all access lists that apply to the MLS-SE.
C. It is used to verify the proper configuration of all attached MLS-RPs.
D. It is used to display the IP address of all MLS-RPs participating in MLS.

Answer: D
Explanation: The **show mls include** command is used to display the IP addresses of all MLS-RPs participating in Multilayer Switching (MLS).

Here is an example of the output of the **show mls include** command:

```
ConsoleTK> (enable) show mls include
Included MLS-RP
--------------------------------------
172.32.5.4
172.32.5.15
ConsoleTK> (enable)
```

QUESTION NO: 227
You are an administrator for a large network. 80 Catalyst 5000 switches runs the OSPF routing protocol. How can you improve the performance of the Spanning-Tree Protocol (STP)?

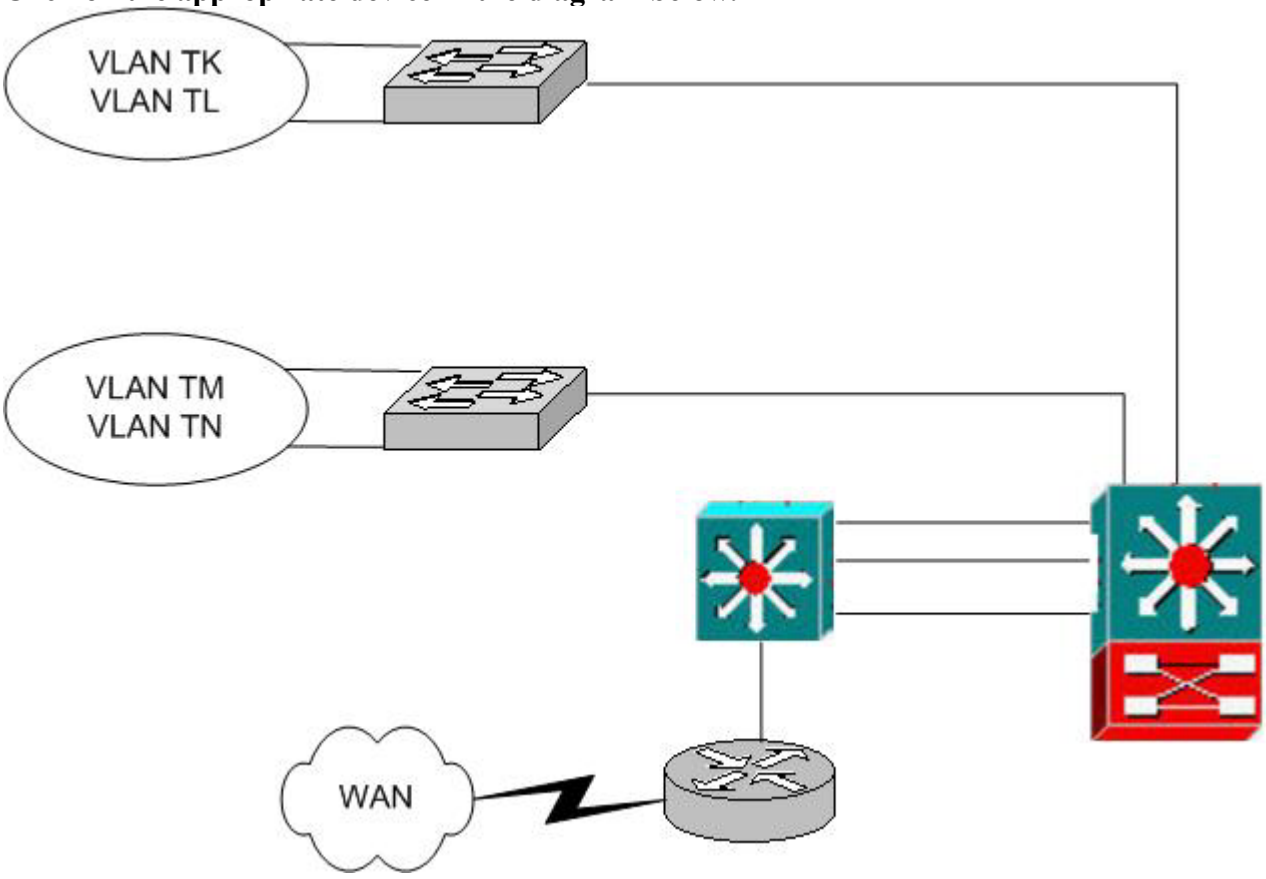
A. properly place the Root Bridge to ensure an optimal STP topology.
B. provide for efficient workstation access through the use of BackboneFast.
C. load balance on redundant links throough the use of technologies such as BackboneFast.
D. configure access switches as Root Bridges to ensure optimal workstation access to the network.

Answer: A
Explanation: The Spanning-Tree Protocol (STP) root guard feature, a feature created by Cisco, provides a way to enforce the root bridge placement in the network. This ensures that the forwarding topology will be more optimal.

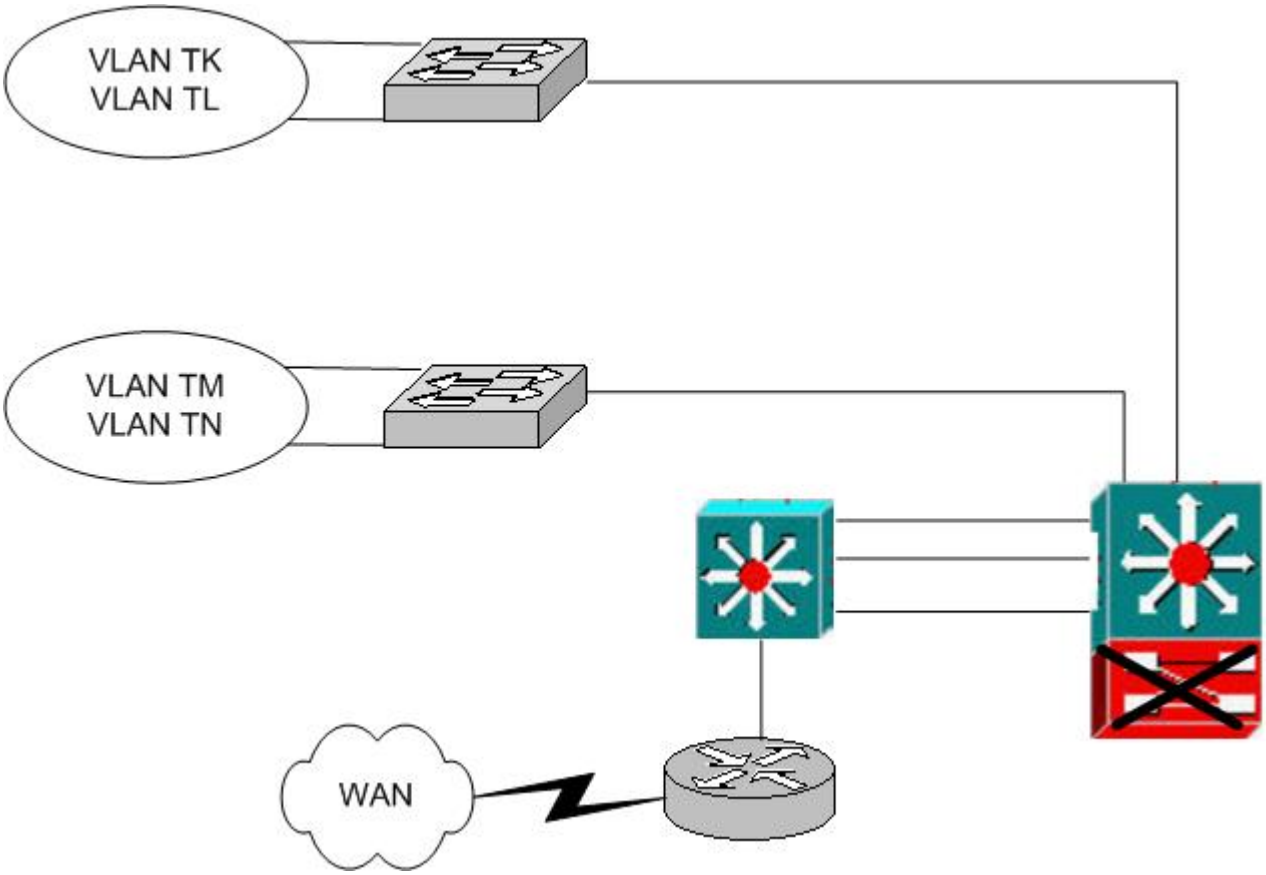
Reference:
Spanning Tree Protocol Root Guard Enhancement. http://www.cisco.com/warp/public/473/74.html
Cisco, Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast

Incorrect Answers
B: Backbonefast provides faster STP convergence, not improved workstation access.
C: Backbonefast provides faster STP convergence, not load balancing on redundant links.
D: This would not improve performance of STP.

QUESTION NO: 228
Which device in the diagram enables communication between VLAN TK and VLAN TM? Click on the appropriate device in the diagram below.



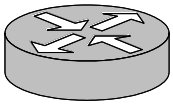
Answer:



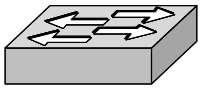
Explanation: A layer-3 device must be used to allow communication between different VLANs. You can configure inter-VLAN routing with either an external router or an internal route processor that can be placed in a slot of a Catalyst switch.
In this scenario the Catalyst Switch with a Route Processor Card is the best solution. We should mark the Route Processor Card (in red).


Multilayer Switch with Route Processor.

Incorrect Answers


A router can be used for interVLAN communication, however it is unnecessary and not the most efficient solution.

Switches cannot be used for interVLAN communication.

 A switch.

 A High-End switch/Multilayer switch.

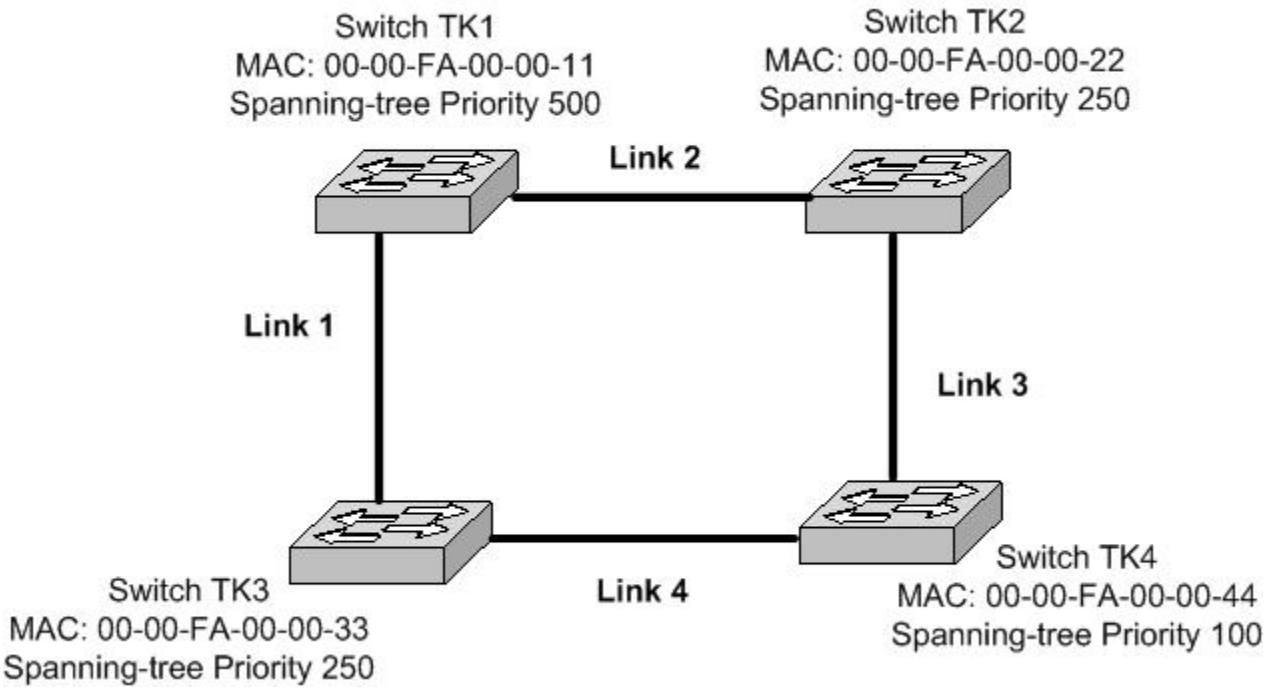
QUESTION NO: 229
The CEO wants you to tell her about VLANs. What should you tell her?

A. They represent a layered network topology.
B. Every member of the VLAN receives broadcasts from VLAN members.
C. Routers must support the 802.1q protocol to forward packets and to and from VLANs.
D. Devices on separate VLANs can communication with each other through a Layer 2 switch.

Answer: B
Explanation: A VLAN is a broadcast domain. All VLAN members receive all broadcasts within the domain.

Incorrect Answers
A: VLANs do no represent a layered network topology.
C: 802.1q is a layer 2 protocol. Routers operate at layer 3.
D: Different VLANs can need a layer 3 (or above) to be able to communicate. Typically a router is used to enable communications between different VLANs.

QUESTION NO: 230
Diagram



All ports in the diagram have the same spanning-tree cost and all ports are configured as access ports. You want to use the UplinkFast feature to improve convergency time after a link failure. Where in diagram should you configure the UplinkFast feature to best achieve this?

A: Switch TK1
B: Switch TK2
C: Switch TK3
D: Switch TK4

Answer: D

Explanation:

Note: The UplinkFast feature provides fast convergence in the network access layer after a spanning tree topology change by using uplink groups. UplinkFast accelerates the choice of a new root port when a link or switch fails or when STP reconfigures itself.

Reference: Cisco, Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast

QUESTION NO: 231

The CEO complaints that her workstation has slow network performance. To troubleshoot, you clear the counters and issue the `show port` command. The output of this command indicates a high number of alignment and FCS errors.
The CEO wants to know the most likely cause of the problem. What should you tell her?

A. There is a speed mismatch.
B. There is a duplex mismatch.
C. There is a trunk mode mismatch.
D. There is a VTP mode mismatch.

Answer: B
Explanation: The **show port** command is used to display port status and counters. Alignment and FCS errors are frames that do not end with an even number of octets and have a bad CRC. This indicates that a valid connection exists but that there are corrupt frames. This could be caused by a duplex mismatch.

Incorrect Answers
A: A speed mismatch cannot be the cause of the problem. The speed would automatically be configured to the highest common speed.
C: A trunk mode mismatch would not allow transfers of any frames at all.
D: A VTP mode mismatch would not allow transfers of any frames at all.

QUESTION NO: 232
A junior technician cannot enable communications between different VLANs on a Catalyst Switch. What should you tell him to use to solve the problem?

A. Use an IP translator.
B. Use a route processor.
C. Use a switching engine.
D. Use a VLAN interswitch.

Answer: B
Explanation: Normally you use a router for interVLAN communication. However if you a catalyst switch you might be able to perform inter-VLAN routing with internal route processor.
.
Reference: Configuring InterVLAN Routing Using an Internal Router (Layer 3 Card) on Catalyst 5000 and 6000 Switches Running CatOS
http://www.cisco.com/warp/public/473/75.html

QUESTION NO: 233
At a job interview you are requested to list three statements that are valid for PVST. (Select three.)

A. PVST is proprietary Cisco protocol.
B. PVST can only maintain one instance of STP for all VLANs.
C. PVST requires ISL trunking encapsulation between switches.
D. PVST requires IEEE 802.1Q encapsulation between switches.
E. PVST allows the possibility of load balancing over redundant inks when the links are assigned to different VLANs.

Answer: A, C, E
Explanation: Per VLAN Spanning Tree (PVST) is commonly used to manage a separate spanning tree domain for each customer
A: The Per-VLAN Spanning Tree (PVST) protocol is Cisco proprietary.
C: ISL uses one spanning tree per VLAN (PVST) over ISL trunks.
E: One benefit of PVST is the balancing load across virtual LANs (VLANs)

Reference: Overview of Layer 3 Switching and Software Features

Incorrect Answers
B: PVST uses a separate instance of spanning tree for each and every VLAN.
D: IEEE 802.1Q uses Per VLAN Spanning Tree Plus (PVST+), mapping multiple spanning trees to the spanning tree of pure IEEE 802.1Q switches.

QUESTION NO: 234
As a service technician you arrive at the customer's site. The local technician gives the following report:

- **Ports are failing to operate at duplex mode.**
- **Ports are failing to operate at the correct speed.**
- **There are packets errors including collisions and late collisions.**
- **There are connectivity problems.**
- **The performance is generally slow.**

You are required to set the transmissions of the ports so that the ports can send and receive data simultaneously. In order to troubleshoot you decide to set the lowest Ethernet speed possible as the transmission rate.

How could you achieve your goals with one single command?

A. set port mod/port 10
B. set port 10BaseT mod/port
C. set port speed mod/port 10
D. show port mod/port 10BaseT

Answer: C
Explanation: We need to explicitly configure the ports for 10Mbps speed and for half-duplex only. We need to use two separate commands. First we must set the speed to 10Mbps with the **set port speed** command and then we would have to configure ports for half-duplex with the **set port duplex** command. The answer only provides the first step of the complete solution.

Note: Because the ports on a 10/100 card are auto-detect, you don't have to necessarily set the speed and duplex. However, there are situations where the auto-detect does not work correctly, and by setting the speed and duplex, you can stabilize the link: The default configuration for 10-Mbps and 100-Mbps modules has all Ethernet ports set to half duplex.
The **set port speed** command is used to configure the speed of a port interface.
The **set port duplex** command can be used to configure the duplex type of an Ethernet or Fast Ethernet port or range of ports.

Incorrect Answers
A: To set the speed of a port the **set port speed** command must be used, not only **set port**.
B: There is no command **set port 10BaseT**.
D: Show commands only displays information. We need to reconfigure the port.

QUESTION NO: 235
You are required to configure RSM for interVLAN routing. However, you cannot connect a terminal directly to the RSM console port. At the switch prompt you must issue a command that will enable you to access the RSM.
Which command should you use?

A. set module
B. config term
C. access *port*
D. session *slot-number*

Answer: D
Explanation: The **session *slot-number*** command is used to toggle between the router and switch sessions (*slot-number* is the RSM slot number).

Note: The Route Switch Module (RSM) is a router module that runs Cisco IOS software and provides interVLAN routing support for some Catalyst family switches, for example the Catalyst 5000 series.

Reference: Maintaining and Administering the RSM
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_5_2/layer3/rsm.htm

Incorrect Answers
A: We must first toggle to the appropriate slot.
B: The **config term** command enters the Enable (Exec) mode. You could argue that this command should be issued before the **set module** command since the **set module** command only works in enable mode.
C: Should not be necessary-

QUESTION NO: 236
Ports do not automatically participate in the Spanning-Tree Protocol (STP). The STP state of the port must change. In which order do the STP states of the port change?

A. Initial, Learning, Updating, and Active
B. Blocking, Listening, Updating, and Active
C. Initial, Learning, Updating, and Forwarding
D. Blocking, Listening, Learning, and Forwarding

Answer: D
Explanation: The correct order is: blocking state (not participating), listening, learning (prepares to participate), and Forwarding.

Note: STP states

- Blocking—The Layer 2 LAN port does not participate in frame forwarding
- Listening—First transitional state after the blocking state when STP determines that the Layer 2 LAN port should participate in frame forwarding
- Learning—The Layer 2 LAN port prepares to participate in frame forwarding
- Forwarding—The Layer 2 LAN port forwards frames
- Disabled—The Layer 2 LAN port does not participate in STP and is not forwarding frames

Reference: Cisco, Configuring STP

QUESTION NO: 237
Exhibit

Router TK1:
interface ethernet 0
ip address 20.6.2.2 255.255.255.0
standby 35 ip 20.6.2.21
standby 35 priority 100
interface ethernet 1
ip address 20.6.1.1.2 255.255.255.0
standby 34 ip 20.6.1.21

Router TK2:
interface ethernet 0
ip address 20.6.1.1.2 255.255.255.0
standby 35 ip 20.6.2.21
interface ethernet 1
ip address 20.6.1.1.1 255.255.255.0
standby 34 ip 20.6.1.21
standby 34 priority 100

You have configured two routers, which are both running HSRP, as shown in the Exhibit. When debugging Router TK2 you notice frequent HSRP group HSRP state transitions. What could explain these frequent state transitions?

A. physical layer issues
B. no spanning tree loops
C. use of non-default HSRP timers
D. failure to set the command `standby 35 preempt`

Answer: A
Explanation: TK2 is not able to from the standby state to reach the active state. This could be caused by missing HSRP hello messages. There are several possible causes for HSRP packets to get lost between the peers. The most common problems are Physical Layer Problems or excessive network traffic caused by Spanning-Tree Issues.

Note:
Hot Standby Routing Protocol (HSRP) is a Cisco proprietary protocol used for allowing redundant connections. It can keep core connectivity if the primary routing process fails.
HSRP defines six states in which an HSRP router may run: initial, learn, listen, speak, standby, and active.

Reference:
Understanding and Troubleshooting HSRP Problems in Catalyst Switch Networks
http://www.cisco.com/warp/public/473/62.shtml
RFC 2281, Cisco Hot Standby Router Protocol (HSRP)

Incorrect Answers
B: Spanning tree loops does not affect this problem.
C: Not a likely cause.
D: If the Preempt option is set, then an election of the Active router will take place. This process is called a coup. However, an election would take place by default.

QUESTION NO: 238
Out of administrative purposes you are required to change a VLAN name on a Catalyst switch. Under which circumstances are you able to do so?

A. When the VTP mode on the switch is client.
B. When the VTP mode on the switch is server.
C. When the VTP mode on the switch is transparent.
D. When the VTP mode on the switch is pass-through.

Answer: B, C
Explanation:
B: In **VTP server mode**, you can create, modify, and delete VLANs.
C: If you configure the switch as VTP transparent, you can create and modify VLANs but the changes affect only the individual switch.

Note 1: A VTP domain (also called a VLAN management domain) is made up of one or more interconnected network devices that share the same VTP domain name. A network device can be configured to be in one and only one VTP domain.
Note 2: There are three VTP modes:
In **VTP server mode**, you can create, modify, and delete VLANs and specify other configuration parameters for the entire VTP domain.
VTP clients behave the same way as VTP servers, but you cannot create, change, or delete VLANs on a VTP client.
VTP transparent network devices do not participate in VTP. A VTP transparent network device does not advertise its VLAN configuration and does not synchronize its VLAN configuration based on received advertisements.

Reference: Cisco, Configuring VTP

Incorrect Answers
A: In VTP client mode you cannot create, change, or delete VLANs on a VTP client.
D: Pass-through is not a VTP mode.

QUESTION NO: 239
A junior service technician is confused about broadcasts in VLANs. What should you tell her? (Select two.)

A. Fewer network devices reduce broadcast traffic.
B. Multicast packets are always broadcast in VLANs.
C. BPDU frames are not propagated when routing switched VLANs.
D. Broadcasts are dropped at the router interface for each logical network.

Answer: A, D
Explanation:
A: The number of network devices will affect the amount of broadcast traffic.
D: Broadcasts are contained with the VLAN.

QUESTION NO: 240
After bootup what is the destination of the first BPDU that the switch sends?

A. a well-known STP multicast address.
B. the IP address of its default gateway.
C. the MAC addresses stored in the CAM table.
D. the MAC address of neighbors discovered via CDP.

Answer: A
Explanation: BPDUs are used to send configuration messages using multicast frames.

Note: Bridge protocol data units (BPDUs) are used by the spanning tree algorithm to determine information about the topology of the network.

QUESTION NO: 241

You want to troubleshoot a Catalyst 5000 switch. You will connect them with a modem via the AUX port. Which protocol should you configure for the AUX port?

A. PPP
B. SLIP
C. L2TP
D. SNMP
E. Telnet

Answer: A
Explanation: We need to specify a WAN protocol that can be used on the serial link. The Point-to-Point Protocol: (PPP) is a good candidate and is supported by Cisco. It the protocol most commonly used for dialup Internet access,

Incorrect Answers
B: SLIP is a legacy for dial-up access. It has been superseded by PPP. SLIP cannot be used to connect two Cisco switches.
C: L2TP cannot be used to connect two Cisco routers.
D: SNMP is used to monitor network activity, not to connect switches.
E: Telnet is not a WAN connectivity protocol.

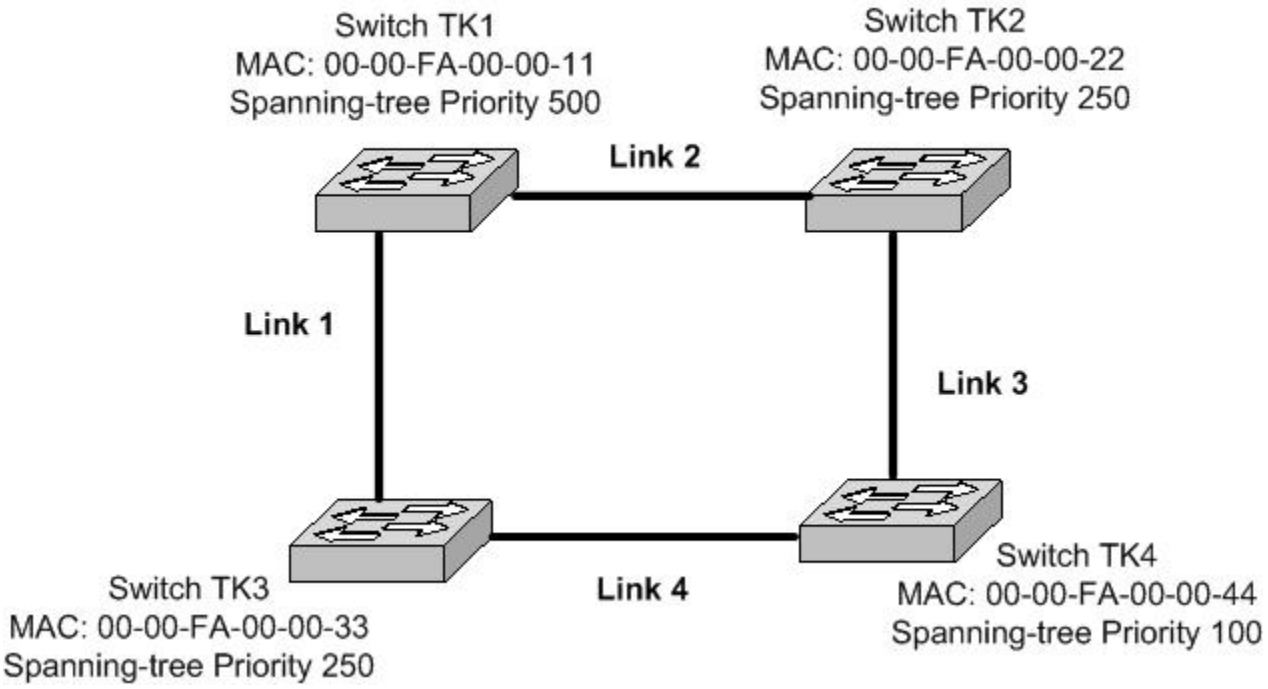
QUESTION NO: 242
A junior service technician is confused about broadcasts in VLANs. What should you tell her? (Select two.)

A. VLANs can have connected members located anywhere in the switched network.
B. VLANs improve network segmentation by detetermining the next network point to which a frame should be forwarded.
C. VLANs allow Layer 1 protocol to determine intelligently the best path to a destination when multiple paths exist.
D. VLANs solve scalability problems found in large, flat network by dividing the networks into smaller broadcast domains or subnets.

Answer: A, D
Explanation:
A: Members in a VLAN do not have to be adjacent. They can be spread across a large area. VLANs are logical not physical.
D: Each VLAN is a separate broadcast domain. This allows for better growth or scalability.

Incorrect Answers
B: This is a feature provided by routers, not by VLANs.
C: This is not a feature of VLAN. There is not much information at Layer 1. Higher-level protocols are required to route traffic intelligently.

QUESTION NO: 243
Diagram



All ports in the diagram have the same spanning-tree cost and all ports are configured as access ports. You want to use the UplinkFast feature to improve convergency time after a link failure. Where in diagram should you configure the UplinkFast feature to best achieve this?

A: Switch TK4 only.
B: Switch TK2 and switch TK3 only.
C: Switch TK2, switch TK3 and switch TK4 only.
D: Switch TK1, switch TK2, switch TK3, and switch TK4.

Answer: A
Explanation: We only have to configure the UplinkFast at one switch.

Note: The UplinkFast feature provides fast convergence in the network access layer after a spanning tree topology change by using uplink groups. UplinkFast accelerates the choice of a new root port when a link or switch fails or when STP reconfigures itself.

Reference: Cisco, Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast

QUESTION NO: 244
Which protocol has the following features?

- It multicasts information.
- It is a Cisco switching technology.
- It forwards multicast packets by using multicast information obtained from routers to improve efficiency.

A. PIM
B. CDP
C. IGMP
D. CGMP

Answer: D
Explanation: CGMP (Cisco Group Management Protocol) was first implemented by Cisco to restrain multicast traffic in a layer 2 network. CGMP operates between the switch and the router and is able to use information obtained from routers.

Reference: Configuring Multicast Services
http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_4_2/config/multi.htm
RFC 1112, Host Extensions for IP Multicasting

Incorrect Answers
A: You can configure the switch to either snoop on Protocol Independent Multicast/Distance Vector Multicast Routing Protocol (PIM/DVMRP) packets or to listen to CGMP self-join packets.

B: CDP (Cisco Discovery Protocol) is used by Cisco devices to learn about the neighboring Cisco devices.
C: IGMP do not operate between the switch and router.

QUESTION NO: 245
You want to enable IGMP snooping on a Catalyst 6000 switch. However, you are unable to do so. Which action could allow to enable IGMP snooping?

A. CGMP must be disabled
B. CGMP must be enabled and configured.
C. IGMP fast-leave processing must be enabled.
D. The desired multicast addresses must be enabled.

Answer: A
Explanation: We should disable CGMP.

Reference: Cisco, Understanding and Configuring IGMP Snooping

Incorrect Answers
B: CGMP should be disabled..
C: IGMP fast-leave only improves performance. It is not a prerequisite.
D: There is no need to enable multicast addresses-

QUESTION NO: 246
You want to enable FastEtherChannel on a Catalyst 5000 switch. Which command should you use?

A. set channel fast
B. set port channel
C. set link channel
D. set etherchannel

Answer: B
Explanation: It is important to set Fast EtherChannel as a "desirable" feature. To do this, use the **set port channel** command: For example: **set port channel 3/1-2 desirable**

Reference: Cisco Application Note, Understanding and Designing Networks Using Fast EtherChannel Technology

QUESTION NO: 247
You are network technician. You are required to upgrade the network of a customer. The 10Base T network should be upgraded to 100BaseT. You use a single wire run to connect two jacks to the patch panel using EIA/TIA Category 3 UTP. However, the new network suffers from auto-negotiate errors, transmission errors, and failures to connect.
What could cause these problems?

A. 100BaseT requires EIA/TIA Cat-5 UTP.
B. 100BaseT requires EIA/TIA Cat-6e UTP.
C. 100BaseT requires all wires in the sheath using EIA/TIA Cat-5 UTP.
D. 100BaseT requires all wired in the sheath using EIA/TIA Cat-6e UTP.

Answer: A
Explanation: CAT 5 UTP cabling is adequate for a 100BaseT network.

Incorrect Answers
B, D: CAT 5 UTP cabling is adequate for a 100BaseT network. There is no requirement for either Cat 6e UTP,
C: All wires, not only the wires in the sheath, must be Cat-5 UTP (or better).

QUESTION NO: 248
You are required to give a lecture on the spanning tree algorithm. In particular you must explain the spanning-tree forward delay value. Which statements should you include in your notes? (Choose three)

A. Default values for the network are obtained from the Root Bridge.
B. All switch ports must use the values learned from the Root Bridge.
C. The delay can be abbreviated on a switch's slot/port by setting the port fast feature.
D. The value signifies the amount of time the port spends transitioning from listening to learning mode.
E. The value signifies the amount of time the port spends transitioning from blocking the listening mode.

Answer: A, C, D
Explanation:
A: The default Forward Delay value is received within a BPDU from the Root Bridge.
C: PortFast is used to make a point-to-point port almost immediately enter into forwarding state by decreasing the time of the listening and learning states.
D: The *Forward Delay* is the amount of time the port spends in listening or learning mode: It is the time it takes to transition a port from the listening state to the learning state or from the learning state to the forwarding state is called the forward delay. This is by default equal to 15 seconds, but can be tuned to be between four and 30 seconds.

Reference: Understanding and Tuning Spanning-Tree Protocol Timers
http://www.cisco.com/warp/public/473/122.html

Incorrect Answers
B: The default Forward Delay value obtained from the Root Bridge may be changed.

E: The transition from the blocking state to the listening state is not called spanning-tree forward delay.

QUESTION NO: 249
The Spanning Tree Algorithm use a value called Root Path Cost. For which purpose is this value used?

A. It is the Path Cost of a particular Root Port
B. It is the cost sent from the Root Bridge to all non-Root bridges.
C. This value is the cumulative cost of all the links leading to the Root Bridge.
D. This value is the cumulative cost of all links sent from the Designated Port of the Root Bridge.

Answer: C

Explanation: The first activity in spanning-tree computation is the selection of the **root bridge**, which is the bridge with the lowest-value bridge identifier. Next, the **root port** on all other bridges is determined. A bridge's root port is the port through which the root bridge can be reached with the least aggregate path cost, a value that is called the **root path cost**.

Reference: Cisco, Transparent Bridging
http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/transbdg.htm

QUESTION NO: 250
You arrive at the site to troubleshoot a Catalyst 5000 switch. You suspect that the Root Bridge for VLAN 1 is incorrect. How could you at the CLI determine the Root Bridge for VLAN 1?

A. show span 1
B. show spantree
C. show bridge vlan 1
D. show spantree root bridge

Answer: B
Explanation: By default the **show spantree** command displays the STP information for VLAN 1. The bridge ID, MAC address, and timers are displayed.

Sample output:
```
TestKing> (enable) show spantree
VLAN 1
```

```
Spanning tree enabled
Spanning tree type ieee
Designated Root 00-d1-22-24-56-00
```
<Rest of output deleted>
The **Designated Root** value in the output is the MAC address of the root bridge.

QUESTION NO: 251
A trainee is curious about the Port Aggregation Protocol (PAgP). He knows that it is used by switches to learn the capabilities of the neighbors' EtherChannel ports. However, he is not sure on user-configurable port modes.

Which of the following are valid PAgP user-configurable trunk port modes? (Select four)

A. On
B. Off
C. Auto
D. Enable
E. Disable
F. Desirable

Answer: A, B, C, F
Explanation: On, off, desirable, and auto are user-configurable modes. So is nonegotiate.

Note: The Port Aggregation Protocol (PAgP) is used to learn the capabilities of the neighbors' EtherChannel ports.

Incorrect Answers
D, E: Enable and disable are not valid trunk port options.

QUESTION NO: 252
The Spanning Tree Protocol (STP) selects one Root Bridge. On all other bridges one port is selected as a Root Port. How does this selection take place?

A. It chooses the port with the lowest cumulative Root Path Cost to the Root Bridge.
B. It chooses the port with the highest cumulative Root Path Cost to the Root Bridge.
C. The port receives an inferior BPDU from a neighboring switch on a shared LAN segment.
D. The port receives a BPDU announcing a higher Root Path Cost from a neighboring switch on a shared LAN segment.

Answer: A
Explanation: The first activity in spanning-tree computation is the selection of the **root bridge**, which is the bridge with the lowest-value bridge identifier. Next, the **root port** on all other bridges is determined. A bridge's root port is the port through which the root bridge can be reached with the least aggregate path cost, a value that is called the **root path cost**.

Reference: Cisco, Transparent Bridging
http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/transbdg.htm

QUESTION NO: 253
Exhibit

```
TestKing> (enable) set spantree uplinkfast enable
```

You issue the commands shown in the exhibit on your Cisco 5000 switch in order to enable UplinkFast. Which effect does this command have? (Select two)

A. It decreases the MaxAge timer to expire ages BPDUs
B. It increases the Port Cost of all local switch ports by 3,000
C. It increases the bridge priority to ensure that it does not become the Root Bridge
D. It decreases the bridge table timer so old entries can be flushed at a faster rate.

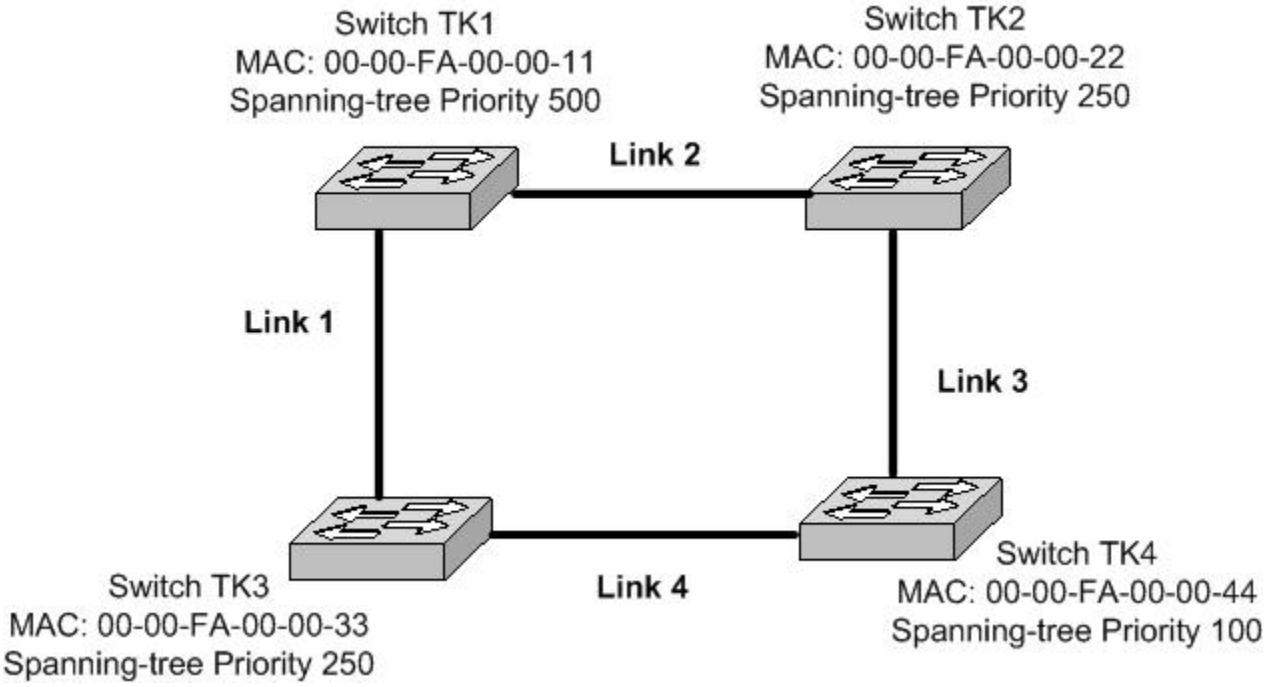
Answer: B, C
Explanation:
B: The spanning tree port cost and port-VLAN cost of all ports on the switch is increased by 3000.
C: The spanning tree bridge priority for all VLANs is set to 49152. This makes it unlikely that the switch will become the root switch.

Reference: Cisco, Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast

Note: UplinkFast is used to minimize network downtime by ensuring that network loops do not occur when the network topology changes. UplinkFast changes the port without passing through the listening and learning phases, which allows the switch to skip the normal convergence time and start forwarding in about 3 to 4 seconds instead of the normal 50 seconds.

Incorrect Answers
A, D: Uplinkfast does not have these effects.

QUESTION NO: 254
Diagram



All ports in the diagram have the same spanning-tree cost and all ports are configured as access ports. You want to use the BackboneFast feature to improve convergency time after a link failure. Where in diagram should you configure the BackboneFast feature to best achieve this?

A: Switch TK4 only.
B: Switch TK2 and switch TK3 only.
C: Switch TK2, switch TK3 and switch TK4 only.
D: Switch TK1, switch TK2, switch TK3, and switch TK4.

Answer: D
Explanation: You must enable BackboneFast on all switches in the network.

Note: The BackboneFast feature provides fast convergence in the network backbone after a spanning tree topology change occurs.

Reference: Cisco, Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast

QUESTION NO: 255
Any form of network communication involving the transmission of information to multiple recipients can benefit from the bandwidth efficiency of multicast technology.
Which multicast technology use a unique forwarding path between the subnet of the source and each subnet containing members of the multicast group?

A. CGMP
B. VLANs
C. IGMP snooping
D. Distribution trees

Answer: D
Explanation: The network must be able to build packet distribution trees that specify a unique forwarding path between the subnet of the source and each subnet containing members of the multicast group.

Reference: Cisco White Paper, Overview of IP Multicast

QUESTION NO: 256
Which message type is included in IGMPv2 but not in IGMPv1?

A. heartbeat
B. join request
C. leave report
D. status report

Answer: C
Explanation: A new IGMP Type was created for the IGMPv2 Leave Group message.

Note: The Leave and Group-Specific messages work together to allow a host to remove itself from the multicast group immediately without interrupting the state of the interface on the multicast router.

Reference: RFC 2236, Internet Group Management Protocol version 2 (IGMPv2), Appendix I - Changes from IGMPv1

QUESTION NO: 257

IGMPV2 clients are able to immediately remove themselves from a multicast group. The procedure for IGMPv1 clients is somewhat different. Which of the following statements concerning IGMPv1 clients is valid?

A. They leave a multicast group without sending any notification
B. They leave a multicast group after sending an IGMP Leave message
C. They leave a multicast group by sending a unicast message to the router
D. They leave a multicast group by stopping the periodic heartbeat message to the router

Answer: D
Explanation: The router hosts a timer that is reset every time a response is received from a host on the subnet. The timer runs for 3 minutes, which is equivalent to 3 Membership Query cycles (every 60 seconds). If the timer expires and no response is received from the hosts on the interface, the router disables multicast forwarding on that interface. An IGMPv1 client leaves the multicast group by stop sending periodic messages to the router.

Reference: RFC 1112, Host Extensions for IP Multicasting

QUESTION NO: 258
You are network consultant working at TestKing Inc. You must now fix a network problem for a customer. The local technician tells you that users are reporting that from their workstations they have no access to Domain Controllers or DHCP servers. Furthermore they see no Novel Login Screen and they can't access their AppleTalk network.
The customer use Cisco 4000, Cisco 5000, and Cisco 6000 routers.
What command could resolve these problems?

A. spanning-tree portfast
B. set port connect mod/port
C. spantree start-forwarding
D. set spantree portfast mod/port enable

Answer: D

Explanation: When the switch powers up, or when a device is connected to a port, the port normally enters the spanning tree listening state. When the forward delay timer expires, the port enters the learning state. When the forward delay timer expires a second time, the port is transitioned to the forwarding or blocking state. This delay could cause the problems described in the scenario. We remove the delay with the PortFast feature. We enable PortFast on a switch port connected to a single workstation or server with the **set spantree portfast** *mod_num*/*port_num* **enable** command.

Note: The spanning tree PortFast feature causes a port to enter the spanning tree forwarding state immediately, bypassing the listening and learning states. You can use PortFast on switch ports connected to a single workstation or server to allow those devices to connect to the network immediately, instead of waiting for the port to transition from the listening and learning states to the forwarding state.

Reference: Cisco, Configuring Spanning Tree PortFast, UplinkFast, and BackboneFast

QUESTION NO: 259
You are required to configure IGMP on Cisco 5000 switch. You are concerned about the default settings. Which of the following statements is true?

A. IGMP snooping enabled and PIM enabled
B. IGMP snooping enabled and CGMP enabled
C. IGMP enabled and IGMP snooping disabled
D. IGMP snooping enabled and CGMP disabled
E. IGMP snooping disabled and CGMP disabled.

Answer: E (?)
Explanation: IGMP snooping must be enabled. It is disabled by default. CGMP is disabled by default as well.

Incorrect Answers
B: CGMP is not enabled by default. It must be manually enabled. Furthermore, you cannot enable CGMP on a switch if IGMP snooping is already enabled on that switch.
C: CGMP is disabled by default.
A, D: IGMP snooping is disabled by default.

QUESTION NO: 260
You need to send data to specific group of clients. You want to use the most efficient technique to transmit the data. What should you choose?

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

Answer: C

Explanation: Multicasts are broadcasts that are destined for a specific or defined group of users.

QUESTION NO: 261
You are required to set up multiple VTP domains. What should you consider in order to keep a consistent VLAN database? (Choose two)

A. do not configure any switches as a VTP server
B. ensure that all switches not authorized to make changes are in client mode
C. always configure switches using VTP server mode when adding them to the existing network
D. allow only one VTP server in each domain so that adding and deleting VLANs can be centralized to one location.

Answer: B, D
Explanation:
B: Switches not authorized to make changes should be run as VTP clients. VTP clients receive information from VTP servers and send and receive updates, but they cannot make any changes.
D: You need at least one server in your VTP domain to propagate VLAN information throughout the domain. You are able to use several VTP servers in a domain. However, only allowing one VTP server would help keep the VLAN database consistent..

References: Cisco, Configuring Multicast Services

Incorrect Answers
A: Switches can very well be used as VTP servers. VTP server mode is the default for all Catalyst switches.
C: It is more prudent to configure switches using VTP client mode. They will not be able to update information in the VLAN domain database.

QUESTION NO: 262
You are configuring your Catalyst 5000 switches for VTP. You want the switches to be able to create and delete VLANs locally on the own switch. Which VTP modes could you use on these switches?

A. Client
B. Server
C. Transparent
D. Pass-through

Answer: B, C
Explanation:
B: In VTP server mode the switch can create, add, or delete VLANs on a VTP domain. It can change also change VTP information.
C: VTP transparent switches can add and delete VLANs because they keep their own database and do not share it with other switches. Transparent switches are considered locally significant.

Incorrect Answers
A: VTP clients receive information from VTP servers and send and receive updates, but they cannot make any changes.
D: Pass-through is not a VTP mode.

QUESTION NO: 263
Which improvements does VTP Version 2 have? (Choose two)

A. supports Token Ring VLANs
B. allows VLAN consistency checks
C. saves VLAN configuration memory
D. reduces the amount of configuration necessary
E. allows active redundant links when used with spanning tree

Answer: A, B
Explanation:
A: Token Ring VLAN support was not included in VTP Version 1, but was added to VTP Version 2.
B: VTP Consistency checks were added to VTP version 2.

Note: VTP Version 2 includes the following improvements: Token Ring VLAN support, TLV support, Transparent mode, and Consistency checks.

Incorrect Answers
C, D: These were not improvements added to VTP Version 2.

QUESTION NO: 264
You need to troubleshoot a Catalyst 3500XL switch. Initial investigation indicates an incorrect trunk encapsulation mode on one specific port is the cause of the problems. What command can you use to rectify the problem?

A. TestK (config) #vtp mode

B. TestK (config-if) #set trunk
C. TestK (config-if) #encapsulation
D. TestK (config-if) #switchport trunk encapsulation

Answer: D
Explanation: We must re-configure the trunk encapsulation mode. The **switchport trunk encapsulation** interface configuration command is used to specify the Ethernet Trunk encapsulation type of the interface.

Reference: Configuring InterVLAN Routing and ISL/802.1Q Trunking on a Catalyst 2900XL/3500XL/2950 Switch Using An External Router
http://www.cisco.com/warp/public/473/50.shtml

Incorrect Answers
A: Vtp mode is not the issue here.
B The **set trunk** is used in global mode, not in interface configuration mode.
Note: The **set trunk** command to configure trunk ports and to add VLANs to the allowed VLAN list for existing trunks.
Syntax:
set trunk *mod_num/port_num* [**on** | **off** | **desirable** | **auto** | **nonegotiate**] [*vlan_range*] [**isl** | **dot1q** | **dot10** | **lane** | **negotiate**]
C The **encapsulation** command is not used to set the trunk encapsulation.

QUESTION NO: 265
You must configure Ethernet trunk between a Catalyst 5000 Switch and a Catalyst 6000 switch. Furthermore, Inter-Switch Link (ISL) routing must be used.
Which of the following are requirements for an appropriate configuration of the trunk in this scenario? (Choose two)

A. an identical VTP mode
B. an identical speed/duplex
C. an identical trunk negotiation parameter
D. an identical trunk encapsulation parameter

Answer: B, D
Explanation: Speed, duplex, and trunk encapsulation have to be identical.

Incorrect Answers
A: The trunk modes have to be compatible. They don't have to be identical.
D: The Trunk negation parameter does not have to be identical.

QUESTION NO: 266
You are required to set up an Ethernet trunk between two Cisco switches. You are considering to use the Inter-Switch Link (ISL) protocol. What are valid statements concerning this issue? (Choose two)

A. ISL can be used between Cisco and non-Cisco switch devices.
B. ISL calculates a new CRC field on top of the existing CRC field.
C. ISL adds 4 bytes of protocol-specific information to the original Ethernet frame.
D. ISL adds 30 bytes of protocol-specific information to the original Ethernet frame.

Answer: B, D
Explanation:
B: A second frame check sequence (FCS) field at the end of the frame.
D: ISL is an external tagging process: new 26-byte ISL header is added to the original Ethernet frame. A second 4-byte frame check sequence (FCS) field at the end of the frame.

Incorrect Answers
A: Cisco's propriety version of frame tagging is ISL. ISL can only be used between Cisco routers.
C: 30 bytes are added to the Ethernet frame, not 4 bytes.

QUESTION NO: 267
You work as a network technician at TestKing Inc, a network service company. One customer company has problems with their Cisco switched network. You are required to troubleshoot the customer network. Which tool would be appropriate?

A. CWSI
B. NetSYS
C. SwitchMan
D. VLANDirector
E. Traffic Director

Answer: A
Explanation: CiscoWorks for Switched Internetworks (CWSI) is a suite of network management applications. CWSI applications enable you to configure, monitor, and manage a switched internetwork.

Reference: CWSI 2.1 User Guides

Incorrect Answers
B: NetSYS can be used to monitor network traffic.
C: There is no such utility.
D: VLANDirector can be used to troubleshoot VLANs.
D: TrafficDirector graphically reports and analyzes device and port level RMON collected traffic data from RMON enabled Catalyst Switches,

QUESTION NO: 268
A trainee is troubleshooting trunking between two switches. He remembers that there are five trunking modes: on, off, desirable, auto, and nonegotiate.
However, he fails to grasp the difference between the "On" and the "Nonegotiate" trunking modes.
What should you tell him? (Choose two)

A. A port configured with trunking mode nonegotiate will not send out DTP or DISL packets.
B. A port configured with trunking mode "On" will only form a trunk properly with a port configured with trunking mode on.
C. A port configured with trunking mode "On" will form a trunk properly with a port configured with any trunking modes except off.
D. A port configured with trunking mode nonegotiate will only form a trunk properly with a port configured with trunking mode nonegotiate.

Answer: A, C
Explanation:
A: **Nonegotiate** makes a port a permanent trunk port, but the port does not use DTP frames for communication.
C: The **On** mode makes the switch port a permanent trunk port regardless of the other end. It will form a trunk with a port configured with any trunking modes except off.

Incorrect Answers
B: The **On** mode makes the switch port a permanent trunk port regardless of the other end. An **On** port can form a trunk with a **Auto** port.
D: An **On** port can form a trunk with a **Nonegotiate** port.

QUESTION NO: 269
The company is planning to use Cisco IP telephony. You are required to select which switches that would be appropriate. Furthermore, the Phones most be powered through the switches (i.e. inline power support), not through wall power.
Which switches meets the requirements? (Select three.)

A. 3500 series
B. 4000 series
C. 5000 series
D. 6000 series

Answer: A, B, D
Explanation:
A: With the expansion of inline power needs for IP phones and wireless access points, the Catalyst 3524-PWR XL is the leading choice.
B: The Cisco Catalyst 4000 Family Inline Power 10/100BaseT Ethernet Switching Module intelligently detects and provides power to IP enabled devices such as Cisco IP Phones.
D: The Cisco Catalyst 6000 Family Inline Power 10/100BaseT Ethernet Switching Module extends the voice capabilities of the Catalyst backbone to the enterprise wiring closet and branch office.

Note 1: Each Cisco IP Telephone provides Toll-quality audio and doesn't require a companion PC. Because it is an IP-based telephone, it can be installed anywhere on a corporate local or wide area IP network.

Note 2: Inline power is 48-volt DC power provided over standard Category 5 unshielded twisted-pair (UTP) cable up to 100 meters. Instead of requiring wall power, terminal devices such as IP telephones can utilize power provided from the Catalyst Inline Power Patch Panel.

Reference: Cisco product information

Incorrect Answers
C: Catalyst 5000 series switches are used in large campuses to provide access for more than 250 users. They supports 10/100/1000Mbps Ethernet switching. They don't support inline power for Cisco IP phones however.

QUESTION NO: 270
You are setting up Cisco switch network. The requirement is that every switch should use Cisco Express forwarding.
Which type of switches can be used in this network? (Choose two)

A. Catalyst 8500
B. Catalyst 2900XL
C. Catalyst 3500XL
D. Catalyst 2948G-L3

Answer: A, D

Explanation:
A: Catalyst 8500 switches use a forwarding information base (FIB) for Cisco Express Forwarding.
D: The Catalyst 2948G-L3 uses Cisco Express Forwarding (CEF).

Note: Cisco Express Forwarding (CEF) is advanced Layer 3 IP switching technology. CEF optimizes network performance and scalability for networks with large and dynamic traffic patterns, such as the Internet, on networks characterized by intensive Web-based applications, or interactive sessions.

CEF was originally developed for the Cisco 12000 series gigabit switch router (GSR), the Catalyst 8500, and the Cisco 7500.

Reference: Cisco, Cisco Express Forwarding

Incorrect Answers
B, C: These switches do not support CEF.

QUESTION NO: 271
You are required to advice a company on which distribution layer Cisco hardware to buy.
Requirements:

- **Gigabit data transfer speed**
- **High availability**
- **Access aggregation**
- **InterVLAN routing between users and Server Farms**

The company plan to launch a multimedia center to distribute company information throughout the campus.
What should you recommend?

A. Catalyst 2948G-L3
B. Catalyst 4000 series switch
C. Catalyst 6000 series switch
D. Catalyst 7100 series switch

Answer: C
Explanation: The Catalyst 6000 switches provide high-density Fast Ethernet and Gigabit Ethernet in both campus-backbone and server-aggregation environments. The Catalyst 6006 and the Catalyst 6009 switches have a 32-Gbps switching capacity, while the Catalyst 6506, the Catalyst 6509, the Catalyst 6509-NEB, and the Catalyst 6513 switches support a backplane architecture that scales from 32 Gbps to 256 Gbps.

Incorrect Answers

A: The Catalyst 2948G-L3 provides an aggregate throughput of 10 Mbps for Layer 3 switching. However, the requirement is of gigabit speed.
B: Not adequate.
D: Catalyst 7100 Series are VPN routers. Packet throughput is 175 Kpps. It is adequate for large branch and central site VPN router, for a dedicated site-to-site VPN solution

QUESTION NO: 272
A trainee is concerned by broadcast traffic. In particular she does not understand how it is possible to block broadcast from flooding trunk lines that should not be the destination of the broadcasts. Which technique is used to prevent the broadcasts from flooding these trunk links?

A. ISL trunking
B. VTP pruning
C. ATM LANE trunking
D. VLAN authentication

Answer: B
Explanation: VTP pruning is used to preserve bandwidth. You can configure the VTP to reduce the amount of broadcasts, multicasts, and other unicast packets. VTP restricts broadcasts to only trunk links that must have the information. If a trunk link does not need the broadcasts, the information is not sent.

Reference: CCNP Switching Study Guide #640-507, Sybex Press, Page 132

Incorrect Answers
A: ISL trunking is used to configure an Ethernet trunk. It is not directly used to prevent broadcast traffic.
C: LAN Emulation (LANE) is used to communicate with multiple VLANs over ATM. ATM Lane trunking does not apply in this scenario.
D: VLAN authentication is used for security, not to stop broadcast traffic.

QUESTION NO: 273
You want to implement a dynamic VLAN solution. What should you take in consideration in your implementation plan? (Choose two)

A. Each switch port is assigned to a specific VLAN.
B. Dynamic VLANs require a VLAN Membership Policy Server.
C. Devices are in the same VLAN regardless of which port they attach to.
D. Dynamic VLAN assignments are made through the command line interface.

Answer: B, C

Explanation: With VLAN Membership Policy Server (VMPS), you can assign switch ports to VLANs dynamically, based on the source Media Access Control (MAC) address of the device connected to the port. When you move a host from a port on one switch in the network to a port on another switch in the network, the switch assigns the new port to the proper VLAN for that host dynamically.

Note: There are two types of VLAN port configurations: static and dynamic.

Reference: Cisco, Configuring Dynamic Port VLAN Membership with VMPS

Incorrect Answers

A: In a static VLAN, the administrator assigns switch ports to the VLAN, and the association does not change until the administrator changes the port assignment. However, this is not the case of dynamic VLANs.

D: The Command Line Interface is not used for dynamic VLAN assignments.

QUESTION NO: 274

You are setting up VTP. However, there are problems with the Fast Ether Channel (FEC) links. You need to troubleshoot this problem. You realize that you want to establish the following:

- **What is the status of trunking.**
- **Which VLANs are allowed to use the link.**
- **Which VLANs are active.**

You connect to the switch and access the CLI. What would be the appropriate command in order to obtain the required information?

A. show span
B. show vlans status
C. show vtp domain info
D. show *module/port* trunk
E. show trunk *module/port*

Answer: E

Explanation: The **show trunk** *module/port* command is used to verify a specific trunk port. The output includes the status of the trunk, VLANs allowed on the trunk, and active VLANs.

Reference: CCNP Switching Study Guide #640-507, Sybex Press, Page 120

Incorrect Answers

A: The **show span** command is used to display information about the current SPAN configuration: However, it does not display VLAN information.

B, C: There are no such commands.

D: The **show module** command shows the module and numbers of cards in the switch. It does not apply in this scenario. The syntax **show module trunk** is incorrect. Furthermore, D) indicates that *module/port* should be used as parameter not as a constant.
Note:
The **show port trunk** command to display port trunk information.
Syntax: show port trunk [*mod_num*/*port_num*]
This command would display the required information.

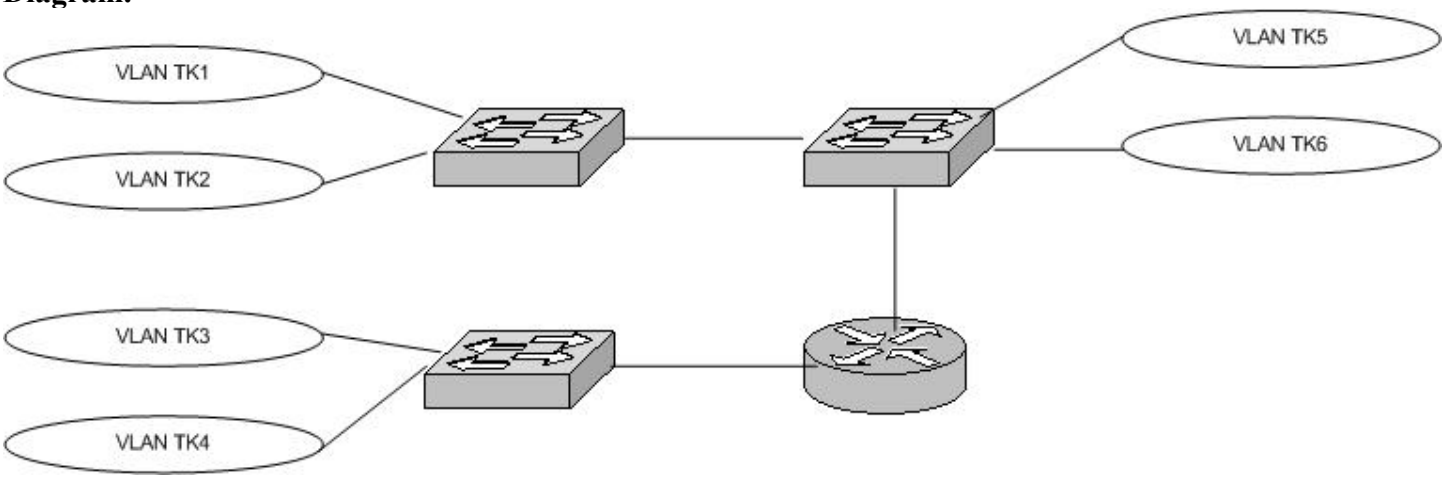
QUESTION NO: 275
Arriving at the customer site you are required to configure a Catalyst 3500XL switch. In particular you are required to configure the default gateway. You connect to the switch and enter global configuration mode. What command should you use?

A. set ip route
B. ip default route
C. ip default-gateway
D. set default-gateway

Answer: A
Explanation: The **set ip route** command is used to add IP addresses or aliases to the IP routing table.
Syntax:
set ip route default *gateway* [*metric*] [**primary**]
set ip route *destination*[/*netmask*] *gateway*

If you want to set the default gateway to 10.0.0.100 you could use two different commands:
Solution 1: TestKing3500XL> (enable) **set ip route 0.0.0.0 10.0.0.100**
Solution 2: TestKing3500XL> (enable) **set ip route default 10.0.0.100**

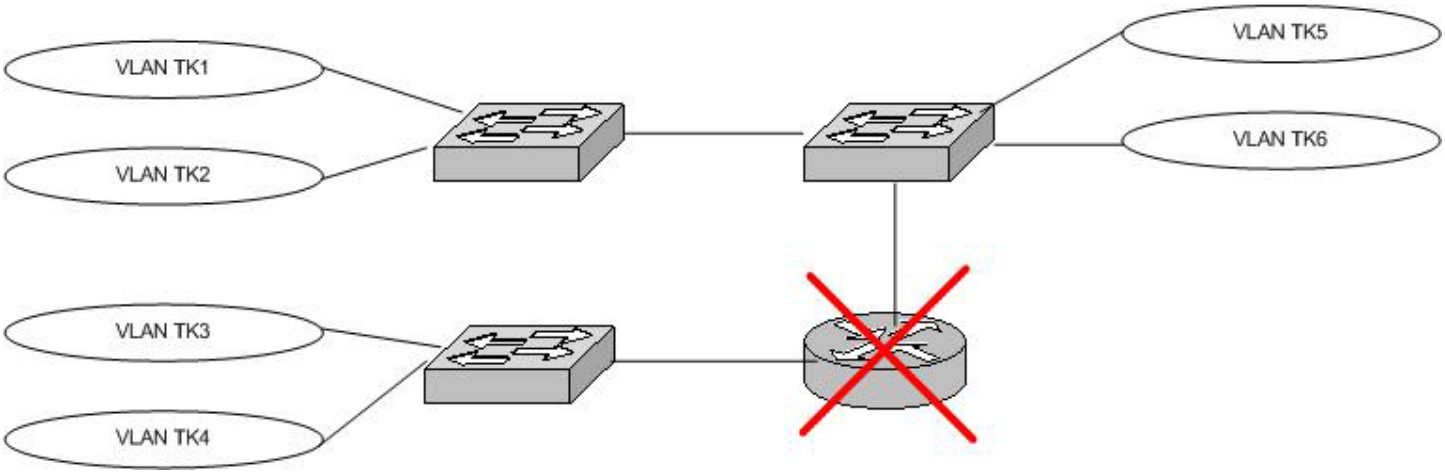
QUESTION NO: 276
Diagram.



You set a VLAN environment as indicated in the diagram above. A junior technician asks you how VLAN TK2 is able to communicate with VLAN TK6. You explain to him that this is an example of interVLAN communication. He asks you to indicate which device in the diagram provides this.

Click on the appropriate device in the diagram.

Answer:



Explanation:
InterVLAN communication requires a layer 3 device. In this scenario the router is used.

Incorrect Answers:
Layer 2 switches cannot be used for interVLAN communication.

QUESTION NO: 277
You have a switch with a Route Switch Module (RSM). You are required to configure multilayer switching on the MLS-RP (Multi Layer Switching Route Processor).
What steps should you take to accomplish this goal? (Select three.)

A. enabling MLSP
B. setting the MLS aging time
C. including an external MLS-RP
D. assigning a VLAN ID to an interface
E. configure the MLS management interface

Answer: A, C, E
Explanation:
A: The Multilayer Switching Protocol must be enabled. The command is **mls rp ip**.
C: The external MLS-RP (Multi Layer Switching Route Processor) must be included.
E: MLSP packets are sent and received through the management interface. You must specify at least one router interface as a management interface. If you do not specify a management interface, IP MLS will not function. The **mls rp management-interface** command is used for this purpose.

Reference: Cisco, Configuring IP Multilayer Switching

Incorrect Answers
B: This is not required. The default value can be used.
D: This task is not required for RSM VLAN interfaces (virtual interfaces), ISL-encapsulated interfaces, and 802.1Q-encapsulated interfaces.
It is only required for: ATM interface with LANE encapsulation and multiple subinterfaces (one per subnet/VLAN), Ethernet, Fast Ethernet, or Gigabit Ethernet interface with no subinterfaces. (one physical interface per subnet/VLAN).

QUESTION NO: 278
You are required to set up a Catalyst 5000 switch for multilayer switching using a multilayer switching route processor. What configuration tasks should you take? (Select three.)

A. setting the MLS aging time
B. including an external MLS-RP
C. enabling MLS on every interface
D. configuring the MLS management interface
E. adding interfaces to the VTP domain on the switch

Answer: B, C, D
Explanation:
B: The external MLS-RP (Multi Layer Switching Route Processor) must be included.
C: The Multilayer Switching Protocol must be enabled. The command is **mls rp ip**.
D: MLSP packets are sent and received through the management interface. You must specify at least one router interface as a management interface. If you do not specify a management interface, IP MLS will not function. The **mls rp management-interface** command is used for this purpose.

Reference: Cisco, Configuring IP Multilayer Switching

Incorrect Answers
A: This is not required. The default value can be used.
E: Perform this configuration task only if the switch is a VTP server or client.

QUESTION NO: 279
You must configure your Catalyst 5000 Switch. You must troubleshoot the Multilayer Switching Switching Engine (MLS-SE). You want to identify the ID of the attached Multi Layer Switching Route

Processor (MLS-RP) router. You connect to the catalyst and reach the CLI. What command should you use?

Which command on the Catalyst 5000 MLS-SE displays the ID of an attached MLS-RP router?

A. show mls
B. show mls id
C. show mls entry ip-address
D. show mls entry rp ip-address

Answer: A
Explanation: The **show mls rp** command displays IP MLS details, including specific information about MLSP. The output includes MLSP-ID used in MLSP messages.

Reference: Cisco, Configuring IP Multilayer Switching

Incorrect Answers
B, C, D: No such commands.

QUESTION NO: 280
A trainee is curios about networking technologies. However, he is confused about some basic facts concerning Ethernet. What should you tell him?

A. CSMA/CD technology is not used on switch ports.
B. Cabling for Fast Ethernet is limited to UTP and fiber optic.
C. Full-duplex operation increases Ethernet transmission speed.
D. Cabling distances should not exceed 328 meters between active devices.

Answer: C
Explanation: Two-way communication increases the throughput.

Incorrect Answers
A: CSMA/CD must be used if the switch port is connected to a hub.
B: STP can be used as well. In particular 100BaseVG STP use STP cabling.
D: The maximum distance for UTP and STP is 100 meters. Furthermore, fiber optic cabling can exceed a distance of 328 meters.

QUESTION NO: 281
You want to connect two access layer switches. You must use 10/1000 Ethernet ports. Which cabling could you use?

A. Cat-5 UTP crossover cable
B. RJ-45 to DB-9 terminal cable
C. RJ-45 to RJ-45 rollover cable
D. RJ.45 to RJ-45 straight-through cable

Answer: A
Explanation: Cat 5 UTP crossover cabling can be used to connect two switches.

Reference: Catalyst Switch Cable Guide
http://www.cisco.com/warp/public/473/132.html

Incorrect Answers
B: A Management Cable, a RJ-45 to DB-9 terminal cable, is used to connect a PC to a switch (or router).
C: A RJ-45-to-RJ-45 rollover cable is used to connect the console port of the switch to a console PC or terminal.
D: A Straight cable can be used to connect a switch to a router or a workstation.

QUESTION NO: 282
You are required to configure a Catalyst 4000 switch. You power the switch up, connect to it and reach the CLI. Now you want to configure the management interface. How do you assign an IP address to this interface?

A. interface tty
B. ip address sc0
C. set interface sc0
D. set ip manage address

Answer: C
Explanation: The interface sc0 is an internal management interface that is connected to the switching fabric and participates in all of the functions of a normal switch port. Configure an IP address for sc0 by issuing the command **set interface sc0**. This is the correct procedure for Catalyst 4000, 5000, 6000 Switches. Another procedure is for 2900/3500 XL Switches.

Reference: Configuring a Management IP Address on Catalyst Switches for Catalyst 4000, 5000, 6000 and 2900/3500 Series Switches

http://www.cisco.com/warp/public/473/8.html

Incorrect Answers
A, B, D: There are no such commands.

QUESTION NO: 283
You have configured an EtherChannel bundle and it is now operational on a trunk. You are worried that the ports in the bundle could be disabled. What could cause this? (Choose two)

A. disabling port security
B. excessive errors on one port
C. changing VLAN mode to dynamic
D. changing the speed attribute of one port

Answer: C, D
Explanation:
C: Do not configure the ports in an EtherChannel as dynamic VLAN ports. It could adversely affect switch performance.
D: All ports in an EtherChannel should be configured to operate at the same speed and duplex mode (full or half duplex).

Reference: Cisco, Configuring Fast EtherChannel and Gigabit EtherChannel

QUESTION NO: 284
You are required to configure a port for duplex mode on a 2924XL switch. You connect to the switch and reach the CLI. What should you do next?

A. duplex
B. set duplex
C. port duplex
D. set port duplex
E. set duplex port

Answer: A
Explanation: The **duplex** command is to set the port to duplex mode on 1900/2800/2900XL/2924XL switches.

Incorrect Answers

B, C; E: There are no such commands on a 2924XL switch.
D: The **set port duplex** command is to set the port to duplex mode on a Catalyst 5000 Switch.

QUESTION NO: 285
You must disable Cisco Group Management Protocol (CGMP) on your Catalyst 4000 switch. Which IOS command should you issue?

A. no cgmp
B. no ip cgmp
C. set cgmp disable
D. set multicast cgmp disable

Answer: C

Explanation: The **set cgmp** command is used to enable or disable CGMP on the switch.

Syntax: set cgmp {**enable** | **disable**}
This command is used on Catalyst 5000 switches, Catalyst 4000 switches, Catalyst 2926G switches, Catalyst 2948G switches, and Catalyst 2980G switches.

QUESTION NO: 286
You must enable Cisco Group Management Protocol (CGMP) on an interface on your Catalyst 5000 switch. You connect to switch and enter interface configuration mode. Which IOS command should you use?

A. cgmp
B. ip cgmp
C. cgmp enable
D. ip igmp enable cgmp

Answer: B
Explanation: In this scenario CGMP is already enabled on the switch. We must enable it on an interface. The **ip cgmp** interface configuration command is used to enable Cisco Group Management Protocol (CGMP) on an interface

QUESTION NO: 287

A trainee is concerned about the function of the Cisco Group Management Protocol (CGMP). What should you tell her?

A. The router broadcasts CGMP frames to all CGMP-enabled interfaces.
B. The router forwards all IGMP control packets to CGMP-enabled switches.
C. The router adds each multicast host MAC address to its CAM table for the destined port.
D. The router forwards CGMP packets to a well-known address to which all CGMP switches listen.

Answer: D
Explanation: CGMP was first implemented by Cisco to restrain multicast traffic in a layer 2 network. CGMP frames are Ethernet frames with the destination MAC address: 01-00-0c-dd-dd-dd.

Reference: Multicast in a Campus Network: CGMP and IGMP Snooping
http://www.cisco.com/warp/public/473/22.html#CGMP

QUESTION NO 288
Would should you choose if connectivity up to distances of 100km over SMF must be supported?

A. gigastack GBIC
B. 1000BaseZX GBIC
C. 1000BaseSX GBIC
D. 1000BaseLX/LH GBIC

Answer: B
Explanation: The Cisco Gigabit Interface Converter (GBIC) module slots support the following modules to provide flexibility in media and distance options:

- 1000BaseSX GBIC module for fiber connections of up to 550 meters.
- 1000BaseLX/LH GBIC module for fiber connections of up to 10 kilometers.
- 1000BaseZX GBIC module for fiber connections of up to 100 kilometers.
- GigaStack GBIC module for creating a 1-Gbps stack configuration of up to nine Catalyst 3500 XL switches.

Reference: Cisco, GBIC Module Slots

QUESTION NO 289
Your TestKing trainee wants to enable CGMP on a Cisco 5000 switch. What should you tell her?

A. IGMP snooping must also be enabled on the switch.
B. The switch must be configured to receive all IGMP control packets.
C. The switch must have a network connection to a CGMP-enabled router.
D. The ports connected to other CGMP-enabled devices must be statically configured.

Answer: C
Explanation: CGMP must be used when hosts connect to a router via a Catalyst switch. CGMP must be activated on both the router and the switch.

QUESTION NO 290
You are troubleshooting a Cisco 5000 Catalyst switch. You want to determine the number of CGMP packets dropped. Which command should you use?

```
A. show cgmp counters
B. show ip cgmp errors
C. show cgmp statistics
D. show ip cgmp counters
```

Answer: C
Explanation: The **show gmrp statistics** command is used to display GMRP-related statistics for a specified VLAN. Included in the output is **Total GMRP packets dropped**:
Syntax: show gmrp statistics [vlan]

Incorrect Answers
A, B, D: There are no such commands.

QUESTION NO 291
Your TestKint trainee is confused on the difference between set-based commands and IOS-based commands. In particular, he asks you which command he should use on a set-based CLI switch to set the system prompt.
What should you tell him?

```
A. hostname name-string
B. set prompt prompt-string
C. set hostname name-string
```

```
D. set system prompt prompt-string
```

Answer: B
Explanation: On a set-based switch, for example, a Catalyst 5000 switch the **set prompt** *prompt-string* command is used.

Incorrect Answers
A: On an IOS-based switch, for example a1900 switch, the **hostname** *namestring* command is used.
C, D: These commands are not used either on set-based or an IOS-based system.

QUESTION NO 292
You are setting up the Port Aggregation Protocol (PAgp) on a single switch. What could prevent PAgP from function properly? (Select two.)

A. Trunk ports
B. Dynamic VLANS
C. Port duplex mismatch
D. Spanning tree mismatch.

Answer: B, C
Explanation:
B: For PAgP to work, all the ports must be configured with static VLANs.
C: All ports must be the same speed and duplex.

QUESTION NO 293
You are planning an installation of Gigabit Ethernet. Which sort of cabling could be used? (Select two.)

A. Cat-3 UTP
B. Cat-5 UTP
C. RG-58 coax
D. 50 micron MMF
E. 62.5 micron SMF

Answer: B, D
Explanation:
B: 1000BaseT use category 5 UTP.
D: 1000BaseSX use 62.5 and 50-micron MMF

QUESTION NO 294
You are configuring a Catalyst 5000 switch. You want to set the trunking encapsulation mode for a port. Which command should you use?

```
A. Set trunk
B. Set Vtp mode
C. Set port mode
D. Set encapsulation
```

Answer: A
Explanation: The **set trunk** command configures trunking on a port.

Incorrect Answers
B: The **set vtp mode** command sets the VTP mode of the switch.
C, D: There are no such commands.

QUESTION NO 295
A junior TestKing trainee asks you what a VLAN is. What should you tell him?

A. A VLAN is a routed internetwork
B. A VLAN is a single broadcast domain
A. A VLAN is a group of switch ports that communicate through RSM
C. A VLAN is a group of switch ports that are members of the same multicast group.

Answer: B
Explanation: A VLAN implements a single broadcast domain.

Incorrect Answers
A: VLAN operate at layer 2, not at layer 3.
C: A Route Switch Module (RSM) is used for communication between VLANs.
D: Multicast and VLANs are not connected concepts.

QUESTION NO 296

You have just told your trainee that a Catalyst 8500 switch supports layer 3 switching. He is not convinced since he knows that switches work at Layer 2 of the OSI model. He asks you how the switch can accomplish this. What should you tell him?

A. MLS is used.
B. CEF is used.
C. NFFC is used.
D. MSFC is used.

Answer: B
Explanation: Cisco Express Forwarding (CEF) provides Layer 3 switching based on a topology map of the entire network. CEF been developed for the Cisco 12000 Gigabit Switch Router (GSR), the Catalyst 8500, and the Cisco 7500.

QUESTION NO 297
How does the IGMPv1 protocol determine which client on a subnet should respond to a host membership query?

A. The clients use a countdown timer
B. If the query is broadcast , then all clients respond
C. The client with the lowest MAC address responds.
D. The client uses a designated querier election process.

Answer: D
Explanation: For IGMP Version 1, the designated router is elected according to the multicast routing protocol that runs on the LAN.

Note: For IGMP Version 2, the designated querier is the lowest IP-addressed multicast router on the subnet.

QUESTION NO 298
You want to purchase switches that support redundant supervisor engines. Which models should you consider? (Choose two)

A. Catalyst 4000
B. Catalyst 5500
C. Catalyst 6000
D. Catalyst 12000

Answer: B, C
Explanation:
B: The Catalyst 5500 series switches support an optional redundant supervisor engine.
C: Catalyst 6000 family switches support fault resistance by allowing a redundant supervisor engine to take over if the primary supervisor engine fails.

QUESTION NO 299
Your TestKing trainee knows that each switch has a unique 8-byte Bridge ID value. She asks you how this value is determined. What should you tell her?

A. Bridge Priority and MAC address
B. Bridge priority and root Path Cost
C. Management IP address and MAC address
D. Management IP address and Root Path Cost.

Answer: A
Explanation: The bridge ID is a combination of the bridge priority and base MAC address.

QUESTION NO 300
You want to configure your switch with the UplinkFast feature.
What should you take into consideration? (Select two.)

A. It must be used with the PortFast feature enabled.
B. When enabled, it is enabled for the entire switch and all VLANs.
C. It should be configured on all switches, including the root bridge.
D. When the primary Root Port uplink fails, another blocked uplink can be immediately brought up for use.

Answer: B, D
Explanation:
B: All VLANs on the switch are affected and you cannot configure UplinkFast on individual VLANs.
D: When a link fault occurs on the primary root link, UplinkFast transitions the blocked port to a forwarding state. UplinkFast changes the port without passing through the listening and learning phases,

QUESTION NO 301
You want to configure your switch with the PortFast feature.
What should you take into consideration? (Select two.)

A. It increases the forward delay time interval to 30 seconds.
B. It should be enabled on ports connecting to hubs and routers.
C. It should not be enabled on ports with redundant links to another switch.
D. It enables fast connectivity to be established on the access layer port to a booting workstation.

Answer: C, D
Explanation:
C: Portfast on redundant links could cause network loops.
D: PortFast is used to make a point-to-point port almost immediately enter into forwarding state by decreasing the time of the listening and learning states.

Incorrect Answers
A: PortFast decreased the forward delay time.
B: Ideally PortFast should only be used on point-to-point links connected only to workstations or servers.

QUESTION NO 302
Your trainee asks you which MAC address corresponds to the multicast IP address of 224.0.1.55. What should you tell her?

A. 00-00-00-00-01-55
B. 00-01-E0-00-01-37
C. E0-00-01-37-FF-FF
D. 01-00-5E-00-01-37

Answer: D

QUESTION NO 303
You are required to purchase 10 switches. They must all support the VLAN Management Policy Server (VMPS) feature. Which switches would come into consideration? (Choose three)

A. 2900XL series
B. 3500XL series
C. 5000 series

D. 8500 series

Answer: A, B, C
Explanation:
A, B: Catalyst 2900 and 3500 Series XL Features include VMPS.
C: VMPS is present on all Catalyst 5000 Family switches.

Note: The VLAN Management Policy Server (VMPS) service is used to set up a database of MAC addresses that can be used for dynamic addressing of VLANs. VMPS is a MAC-address-to-VLAN mapping database.

QUESTION NO 304
What happens, by default, when a layer 2 switch receives multicast on one of its ports?

A. It blocks multicast traffic on all ports
B. It delivers multicast traffic to all ports
C. It delivers Multicast traffic only to ports that subscribe to it
D. It delivers multicast traffic only to clients that are a member of a multicast group.

Answer: C
Explanation: Multicasts send the frame to only certain networks or subnets and all hosts within that network or subnet.

QUESTION NO 305
You are configuring MLS (multilayer switching) on your Cisco switch. What action could disable MLS?

A. enabling ip security
B. clearing the mls cache
C. configuring an output access list
D. disabling TCP header compression

Answer:
Explanation: There are several configuration options on the router which are not compatible with MLS. These include IP accounting, encryption, compression, IP security, Network Address Translation (NAT), and Committed Access Rate (CAR).

Reference: Troubleshooting IP MultiLayer Switching

http://www.cisco.com/warp/public/473/13.html

QUESTION NO 306
Your TestKing trainee Bob is curios about the Multilayer Swithcing (MLS) cache. What should you tell him?

A. MLS cache entries support unidirectional flows.
B. The MLS-RP stores routing information in the MLS cache.
C. The MLS-SE deletes a cache entry when it detects a TCP FIN ACK
D. The MLS-RP creates MLS cache entries based on known data flows.

Answer: A
Explanation: An MLS cache entry is created for the initial packet of each flow.

Incorrect Answers
B: Routing information is not stored in the MLS cache.
C: The state and identity of the flow are maintained while packet traffic is active; when traffic for a flow ceases, the entry ages out.
D: The MLS-SE, not the MLS-RP creates MLS cache entries.

QUESTION NO 307
You want to remove one particular VLAN from an existing trunk link.
Which IOS command should you use?

```
A. set vlan
B. clear vtp
C. clear port
D. clear trunk
```

Answer: A
Explanation: The **clear vlan** command clears a VLAN.

B: The **clear vtp** command clears VTP statistics.
C: The **clear port** command clears port broadcast suppression
D: The **clear trunk** command clears trunk ports. All VLANs would be cleared.

QUESTION NO 308
You are defining a MLS management interface on the MLS-RP. Your Trainee asks you want the purpose of the MLS management interface is. What should you tell her?

A. It is used to manage the MLS cache.
B. It is used to send and receive MLSP packets.
C. It is used to make routing decisions for the MLS-SE
D. It is used to define the primary route processor in the VTP domain.

Answer: B
Explanation: MLSP packets are sent and received on the management interface. These packets include information on about hardware-switched flows.

QUESTION NO 309
You want multilayer switching to cooperate with input access lists.
Which IOS command should you use to accomplish this goal?

A. ip mls input-acl
B. mls rp ip input-acl
C. set input-acl enable
D. set mls input-acl enable

Answer: B
Explanation: By using the **mls rp ip input-acl** command in addition to normal MLS-RP configuration commands on a router interface, an inbound flowmask is supported.

Incorrect Answers
A, C, D: No such commands.

QUESTION NO 310
You are required to assign a VLAN ID to a route processor interface.
Which command should you use?

```
A. mls vlan vlan-id-number
B. set mls vlan vlan-id-number
C. mls rp vlan-id vlan-id-number
```

```
D. set mls vtp-domain vlan-id-number
```

Answer: C
Explanation: The **mls rp** *vlan-id* [*vlan-id-number*] command assigns the interface the proper VLAN number.

Incorrect Answers
A, D: Can't these commands in this way.
B: There is no **set mls vlan** command.

QUESTION NO 311
You are setting up a large flat network for TestKing inc. In particular you are configuring a Cisco 5000 Catalyst switch. However, there are too much broadcasts on the network and the network traffic is too high. You decide to create VLANs to reduce the broadcasts.
Which hardware will enable you to configure inter-VLAN communication in this scenario?

A. MLS
B. RSM
C. MSFC
D. VLAN bandwidth

Answer: B
Explanation: You can view a Route Switch Module (RSM) as an external router that has several interfaces directly connected into the different VLANs of a Catalyst 5000 switch.

Reference: Troubleshooting InterVLAN Routing on a Catalyst 5000 Switch with RSM
http://www.cisco.com/warp/public/473/56.html

Incorrect Answers
A: Multilayer Switching (MLS)
C: Multilayer Switch Feature Card (MSFC) is a Route Processor (RP).
D: Does not apply

QUESTION NO 312
Exhibit:

```
show port 3/1
```

You use the command shown in the exhibit. The output includes a Giant column which has a value that is greater than 0. You know that the normal value is 0.
What could have caused this non-zero value?

A. IEEE 802.1Q
B. IEEE 802.10
C. misconfigured NIC
D. User configuration

Answer: A
Explanation: The EtherType field identifying the 802.1q frame is inserted into a 802.3 Ethernet frame. Inserting a tag into a frame that already has the maximum Ethernet size creates a 1522 byte frame that can be considered as a "baby giant" by the receiving equipment. This would cause the output of the **show port** command to include a non-zero Giants value.

Note: The **show port** command is used to display port status and counters. Giants denote the number of received giant frames (frames that exceed the maximum IEEE 802.3 frame size) on the port.

Reference: Trunking Between Catalyst 4000, 5000, and 6000 Family Switches Using 802.1q Encapsulation
http://www.cisco.com/warp/public/473/27.html

QUESTION NO 313
Bob, your TestKing trainee, wants to set up some VLANs. He uses a MAC addresses database to assign VLAN membership.
Which type of VLAN has Bob configured?

A. Static VLANs
B. Dynamic VLANs
C. Automatic VLANs
D. Host-based VLANs
E. Source-based VLANs

Answer: B
Explanation: Cisco administrators can use the VLAN Management Policy Server (VMPS) service to set up a database of MAC addresses that can be used for dynamic addressing of VLANs.

Incorrect Answers
A: In a static VLAN, the administrator assigns switch ports to the VLAN, and the association does not change until the administrator changes the port assignment.

C, D, E: No such things.