



Exam : 646-057

Title : Routing and Switching AM Exam

Ver : 10.10.06

QUESTION 1:

What does the Catalyst 6500 Network Analysis Module (NAM) do? (Choose two)

- A. Gives real-time traffic analysis.
- B. Relays network host performance metrics.
- C. Provides full WAN performance monitoring.
- D. Provides application performance monitoring,
- E. Runs outside the switch Cisco's nGenius Real Time Monitor Server.

Answer: A, D

Explanation:

The Network Analysis Module (NAM), an integrated and powerful traffic monitoring solution for the high-performance Catalyst 6500 Series switches and Cisco 7600 Series routers, enables network managers to gain application level visibility into network traffic with the ultimate goal of improving performance, reducing failures, and maximizing returns on network investment. The new generation NAMs are available in two hardware versions, NAM-1 and NAM-2, to meet diverse network analysis needs in scalable switching and routing environments running at gigabit speeds. The NAMs come with an embedded, web based, Traffic Analyzer, which provides full scale remote monitoring and troubleshooting capabilities accessible through a web browser.

When deployed at remote branch offices, the NAMs provide unique advantage to perform remote troubleshooting and traffic analysis through its Web-based Traffic Analyzer without having to send personnel or to haul large amounts of data to the central site.

Reference:

http://www.cisco.com/en/US/products/hw/modules/ps2706/products_data_sheet09186a00800a2c89.html#wp1002150

QUESTION 2:

In the Catalyst 6500, what provides support for analog voice devices and fax machines?

- A. FlexWAN Module
- B. 24-port FXS Module
- C. VG200 Gateway Card
- D. Access Gateway Module

Answer: B

Explanation:

The analog interface module provides enterprises with the ability to connect legacy analog telephony equipment such as phones, speaker phones, and faxes to Cisco Catalyst(r) 6000 switches.

The Catalyst FXS Analog Interface Module integrates legacy analog devices into the campus multiservice network within Cisco AVVID (Architecture for Voice, Video, and Integrated Data). (See Figure 1.) By providing legacy analog devices with access to the benefits of the campus multiservice network, the useful life

and thus the return on investment (ROI) of these devices can be maximized. Migration to a fully converged multiservice network is also simplified.

Figure 1 The Catalyst FXS Analog Interface Module enhances the telephony features and functionality of the award-winning Catalyst family of switches.



http://www.cisco.com/en/US/products/hw/modules/ps2797/products_data_sheet09186a0080092370.html

QUESTION 3:

What are three major product applications for the Catalyst 3550 Series? (Choose three)

- A. Core
- B. Desktop
- C. Aggregation
- D. Stacking/clustering
- E. Server farm switching
- F. Layer 2 cache-based switching

Answer: B, C, D

QUESTION 4:

Why are Catalyst 2950 Series switches ideal for small businesses?

- A. Their modularity allows for incremental expansion.
- B. They provide a low cost entry point for data networking.
- C. Their components are the same as the Catalyst 3550 Series.
- D. They can support all business applications, including IP phones and wireless.

Answer: B

QUESTION 5:

The Catalyst 2950 Series runs _____.

- A. Catalyst OS and is managed using CiscoWorks.
- B. Catalyst OS and has built-in management software.
- C. Cisco IOS software and is managed using CiscoWorks.
- D. Cisco IOS software and has built-in management software.
- E. Catalyst OS or Cisco IOS software and is managed using CiscoWorks.
- F. Catalyst OS or Cisco IOS software and has built-in management software.

Answer: D

The Cisco Catalyst 2950 Series Switch is a fixed-configuration, stackable standalone switch that provides wire-speed Fast Ethernet and Gigabit Ethernet connectivity. This switch offers two distinct sets of software features and a range of configurations to allow small, midsize, and enterprise branch offices and industrial environments to select the right combination for the network edge. Standard Image Software offers Cisco IOS Software functions for basic data, voice, and video services. For networks with requirements for additional security, advanced quality of service (QoS), and high availability, Enhanced Image Software delivers intelligent services such as rate limiting and security filtering for deployment at the network edge.

<http://www.cisco.com/en/US/products/hw/switches/ps628/index.html>

QUESTION 6:

Cisco's low-end Catalyst 2900 Family consists of models with port densities ranging from _____ Ethernet ports.

- A. 12 to 24 10/100
- B. 12 to 48 10/100
- C. 12 to 80 10/100
- D. 24 to 80 10/100

Answer: C

Explanation:

Figure 1

Catalyst 2980G-A: Performance, Density, and Software Consistency



Dedicated 80-Port 10/100 for the Wiring Closet

The Catalyst 2980G-A is a fixed-configuration, Layer 2 Ethernet switch with 80 RJ-45 10/100 ports and two-Gigabit Ethernet uplink ports with modular GBIC interfaces. The full functionality and connectivity in a compact package eliminates the need for extra modules, cabling, or configuration in many small- to medium-sized enterprise wiring closets.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps606/products_data_sheet09186a0080092688.html

QUESTION 7:

Which Catalyst switch can be used as the core of a star configuration to connect up to eight switches and

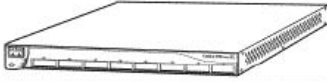

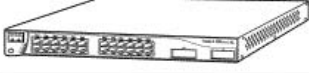
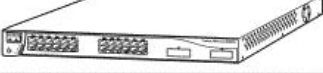

deliver 2-Gbps, full-duplex bandwidth between the core and each connected switch?

- A. Catalyst 3508-XL
- B. Catalyst 2950-24
- C. Catalyst 3550-24
- D. Catalyst 3550-48

Answer: A

Explanation:

Figure1-1 Catalyst3500 SeriesXL Switches

Switch	Description	
WS-C3508G-XL	8 GBIC ¹ -based gigabit module slots	
WS-C3512-XL	12 autosensing 10/100 Ethernet ports 2 GBIC-based gigabit module slots	
WS-C3524-XL	24 autosensing 10/100 Ethernet ports 2 fixed GBIC-based gigabit module slots	
WS-C3524-PWR-XL	24 autosensing 10/100 inline-power Ethernet ports 2 GBIC-based gigabit module slots	
WS-C3548-XL	48 autosensing 10/100 Ethernet ports 2 GBIC-based gigabit module slots	

1. GBIC = Gigabit Interface Converter

WS-C3508G-XL includes 8 Gigabit module slots so it can be used as a core switch with 8-switches connected in a star configuration.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps637/products_installation_guide_chapter09186a00801ab94c.html

QUESTION 8:

Which product family offers the optimal price point for 10/100 connectivity?

- A. Catalyst 2950
- B. Catalyst 3550
- C. Catalyst 4000
- D. Catalyst 6500

Answer: A

QUESTION 9:

Cisco's most scalable, native, multi-device management architecture is available through _____.

- A. CWSI
- B. Switch stacking
- C. Switch clustering
- D. SNMP on Cisco multilayer switches

Answer: C

Explanation:

Cisco switch clustering technology is a set of software features available to all Catalyst 3500 XL, 2900 XL, 2950, 3550, and Catalyst 1900/2820 Standard and Enterprise Edition switches. Clustering technology gives the functionality to manage up to 16 switches simultaneously, using a single IP address. For redundancy, a second switch can be assigned an IP address, and the overall cluster can then be managed using a single virtual IP address. If the primary command switch fails, the backup or secondary command switch seamlessly takes over the management of the cluster while a user still accesses the cluster via the virtual IP address.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps607/products_tech_note09186a008011766b.shtml

QUESTION 10:

Which Catalyst 3500 series is ideal for aggregating a group of 10/100 or Gigabit Ethernet switches or Gigabit Ethernet servers?

- A. Catalyst 3550-24
- B. Catalyst 3550-48
- C. Catalyst 3508-XL
- D. Catalyst 3524-PWR-XL

Answer: C

QUESTION 11:

Which is an internetworking market driver?

- A. The proliferation of local servers.
- B. The increase in large, centralized servers.
- C. The decreasing cost of service provider connectivity.
- D. The increased local processing power of client desktops.

Answer: B

QUESTION 12:

Which product available for the Catalyst 6500 switch can be used to perform network engineering planning, design modifications, capacity planning, and fault isolation?

- A. CWSI

- B. CiscoView
- C. CiscoWorks 2000
- D. Network Analysis Module (NAM)

Answer: D

Explanation:

Fault Isolation and Troubleshooting

Using the NAMs, network managers can set thresholds and alarms on various network parameters such as increased

utilization, severe application response delays, and voice quality degradation, and be alerted to potential problems. The

NAMs provide comprehensive views on applications, hosts, voice, quality of service (QoS), and so on, to isolate faults or malfunctions in the network.

Capacity Planning and Other Extended Applications

The data from the NAMs across the network can be collected by NetScout nGenius Real-Time Monitor, a component of

the CiscoWorks LAN Management Solution (LMS) to provide consolidated views of network traffic (Figure 8). The

NAMs serve as data sources for several other standards-based applications for a variety of purposes including capacity

planning, long-term historical reporting and trending, anomaly-based threat detection, etc.

Reference:

http://www.cisco.com/en/US/products/hw/modules/ps2706/products_data_sheet09186a00800a2c89.html#wp1002157

QUESTION 13:

Cisco's wiring closet switches are generally deployed in which area of the network?

- A. Core
- B. Access
- C. Distribution
- D. Aggregation points

Answer: B

QUESTION 14:

What are characteristics of Cisco multilayer switches?

- A. Multicast, security, load-sharing capabilities
- B. Diverse interfaces, high port densities, redundancy
- C. High availability options, modularity, multi-level security options
- D. Multi-protocol routing, traffic management techniques, policy networking

Answer: D

QUESTION 15:

Which three are considered to be current LAN market drivers? (Choose three)

- A. Service provider costs
- B. Networked applications
- C. Bandwidth consumption
- D. Network security policies
- E. Network equipment costs
- F. Service provider offerings

Answer: B, C, D

QUESTION 16:

In a large campus network, which product best serves the distribution layer because it offers high densities of Fast and Gigabit Ethernet ports?

- A. Cisco 7500 Series
- B. Catalyst 4000 Series
- C. Catalyst 6500 Series
- D. Catalyst 8500 Series

Answer: C

QUESTION 17:

You are using the Catalyst 6500 Series at the core layer in a large campus to provide server load balancing and CEF.

Which software is recommended?

- A. Catalyst OS
- B. Multilayer OS
- C. Supervisor IOS
- D. Distributed IOS

Answer: A

QUESTION 18:

Which two Cisco products support Gigabit EtherChannel for uplinks to the backbone and are appropriate for a wiring closet in a medium campus network? (Choose two)

- A. Catalyst 2950G Series
- B. Catalyst 3550 Series
- C. Catalyst 3900 Series
- D. Catalyst 4000 Series
- E. Catalyst 5000 Series

Answer: D, E

QUESTION 19:

Which Cisco product should be recommended for a large campus backbone where high densities of Gigabit Ethernet, Gigabit EtherChannel, and multimodule channeling are required?

- A. Catalyst 5000 Series
- B. Catalyst 6500 Series
- C. Catalyst 7500 Series
- D. Catalyst 8500 Series

Answer: B

QUESTION 20:

In a large campus design, the server aggregation complex is best served by which Cisco Catalyst switches?

- A. Catalyst 3550 or Catalyst 4000
- B. Catalyst 4000 or Catalyst 8500
- C. Catalyst 4000 or Catalyst 6500
- D. Catalyst 6500 or Catalyst 8500

Answer: D

QUESTION 21:

Which statement about TACACS is true?

- A. TACACS is designed to prevent unauthorized switch throughput activity.
- B. TACACS is a security protocol that monitors network access to the Internet.
- C. TACACS is a VPN access protocol that secures a specific campus LAN segment.
- D. TACACS controls who can access a router in a privileged or non-privileged mode.

Answer: D

Explanation:

Terminal Access Security

Terminal access security refers to securing access to the router and includes control over access to privilege EXEC (enable) mode and, therefore, configuration mode on the router. An unauthorized user

with access to configuration mode could compromise all resources inside the network.

Typically, you want administrators to have access to your router, you do not want other users on your local area network or those dialing in to the network to have access to the router.

Users can access a router by dialing in from outside the network through an asynchronous port, connecting from outside the network through a serial port, or connecting via a terminal or workstation from within the local network.

You protect access to your router terminal by performing the following tasks, which are described in the "Configuring Terminal Access Security" chapter:

1. Configure Login Authentication
2. Protect Access to Privilege EXEC Mode
3. Encrypt Passwords by Using the service password-encryption Command
4. Configure Multiple Privilege Levels
5. Configure Identification Support

The Cisco router exchanges user authentication information with a TACACS+ or RADIUS database on the security server by transmitting TACACS+ or RADIUS packets across the network.

The CiscoSecure product from Cisco Systems, Inc. is an example of a remote security database server.

CiscoSecure is a UNIX security daemon solution in which the administrator creates a database that identifies network users and defines their privileges. CiscoSecure uses a central database that stores user and group profiles with authentication and authorization information.

Network Access Security

Network access security controls access to network devices from outside the network.

With network access security, you can also configure additional levels of verification required to authenticate users. With TACACS + and CiscoSecure, for example, if a user enters the correct password, the system can then prompt for additional information, such as the user's date of birth, mother's maiden name, and so on.

You can use any of the following tools to control access to network devices:

1. Static passwords
2. Basic login authentication on a local database
3. TACACS and extended TACACS
4. Challenge Handshake Access Protocol (CHAP)
5. Password Authentication Protocol (PAP)

Authorization allows you to define user parameters such as user privilege levels and network filters. For example, you can assign an access control list (ACL) to a user to restrict the user from accessing certain other network locations.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1824/products_configuration_guide_chapter09186a0080087e84.html

QUESTION 22:

With which two can Gigabit EtherChannel be used? (Choose two)

- A. Hubs
- B. Routers
- C. Printers
- D. Switches
- E. Desktop PCs

F. Wireless access points

Answer: B, D

QUESTION 23:

What is the primary function of the Policy Feature Card (PFC) in the Catalyst 6500 Family?

- A. To provide security policy verification.
- B. To enhance the MFSC's ability to prioritize traffic.
- C. To provide Layer 3 switching with security services.
- D. To identify user applications and classify traffic with the appropriate priority level.

Answer: C

Explanation:

The Multilayer Switch Feature Card (MSFC2) For the Catalyst(r) 6500 Series delivers high performance multilayer switching and intelligent network services for both service provider and enterprise environments. The MSFC2, in combination with the Policy Feature Card (PFC), provides IP, IPX(r) and IP Multicast switching.

The MSFC2 is a Cisco IOS(r) router in a compact package and, when used in combination with the PFC, provides intelligent multilayer switching for the Catalyst 6000 Family in a single slot solution.

Key Features:

- * Delivers a broad array of Cisco IOS software services
- * Provides intelligent services with Cisco IOS software
- * Provides hardware based layer three switching for IP, IPX and IP Multicast; improved control plane performance; and support for large routing tables
- * Provides multimedia services such as CGMP, IGMP, and PIM, security services such as access lists and encryption, and CoS enablers such as RSVP and WFQ
- * Supports redundancy when redundant MSFC2 equipped supervisors are deployed

Reference:

<http://www.cisco.com/en/US/products/hw/modules/ps2797/ps698/index.html>

QUESTION 24:

What is Spanning Tree Protocol (STP)?

- A. A routing management protocol that links all switches in a VLAN.
- B. A switching protocol that reduces datagram overhead in networks.
- C. A routing protocol that perform path determination for VLAN traffic.
- D. A link management protocol that provides path redundancy in networks.

Answer: D

Explanation:

Spanning-Tree Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via multiple paths. Spanning-Tree Protocol implements the 802.1D IEEE algorithm by exchanging BPDU messages with other switches to detect loops, and then removes the loop by shutting down selected bridge interfaces. This algorithm guarantees that there is one and only one active path between two network devices.

Reference:

http://www.cisco.com/en/US/tech/CK389/CK621/tech_protocol_family_home.html

QUESTION 25:

For what is IP multicast used?

- A. Multimedia transmission only over the Internet.
- B. Multimedia applications over the Internet and intranet.
- C. Multimedia applications only over a corporate intranet.
- D. Multimedia and e-mail broadcasts over a corporate intranet.

Answer: B

Explanation:

IP Multicast is a bandwidth-conserving technology that reduces traffic by simultaneously delivering a single stream of information to thousands of corporate recipients and homes. Applications that take advantage of multicast technologies include video conferencing, corporate communications, distance learning, and distribution of software, stock quotes, and news.

Traditional IP communication allows a host to send packets to a single host (unicast transmission) or to all hosts (broadcast transmission). IP multicast provides a third scheme, allowing a host to send packets to a subset of all hosts (group transmission). These hosts are known as group members.

Packets delivered to group members are identified by a single multicast group address. Multicast packets are delivered to a group using best-effort reliability, just like IP unicast packets.

The multicast environment consists of senders and receivers. Any host, regardless of whether it is a member of a group, can send to a group. However, only the members of a group receive the message.

A multicast address is chosen for the receivers in a multicast group. Senders use that address as the destination address of a datagram to reach all members of the group.

Membership in a multicast group is dynamic; hosts can join and leave at any time. There is no restriction on the location or number of members in a multicast group. A host can be a member of more than one multicast group at a time.

How active a multicast group is and what members it has can vary from group to group and from time to time.

A multicast group can be active for a long time, or it may be very short-lived. Membership in a group can change constantly. A group that has members may have no activity.

Routers executing a multicast routing protocol, such as Protocol-Independent Multicast (PIM), maintain forwarding tables to forward multicast datagrams. Routers use the Internet Group Management Protocol (IGMP) to learn whether members of a group are present on their directly attached subnets. Hosts join multicast groups by sending IGMP report messages.

Many multimedia applications involve multiple participants. IP multicast is naturally suitable for this communication paradigm.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_chapter09186a00800d6b79.html

<http://www.cisco.com/warp/public/732/Tech/multicast/>

QUESTION 26:

VLAN trunking is accomplished in multi-vendor networks using the IEEE 802.1q standard. An all-Cisco network can accomplish VLAN trunking using Cisco's proprietary_____.

- A. Inter Switch Link (ISL)
- B. VLAN Trunk Protocol (VTP)
- C. Dynamic Trunk Protocol (DTP)
- D. Cisco VLAN Tagging Protocol (CVTP)

Answer: A

Explanation:

Trunks are used to carry traffic belonging to multiple VLANs between devices over the same link. A device can determine which VLAN the traffic belongs to by its VLAN identifier. The VLAN identifier is a tag that is encapsulated with the data. ISL and 802.1q are two types of encapsulations used to carry data from multiple VLANs over trunk links.

ISL is a Cisco proprietary protocol for interconnecting multiple switches and maintaining VLAN information as traffic goes between switches. ISL provides VLAN trunking capabilities while maintaining full wire speed performance on Ethernet links in full-duplex or half-duplex mode. ISL operates in a point-to-point environment and will support up to 1000 VLANs. In ISL, the original frame is encapsulated and an additional header is added before the frame is carried over a trunk link. At the receiving end, the header is removed and the frame is forwarded to the assigned VLAN. ISL uses Per VLAN Spanning Tree(PVST) which runs one instance of Spanning Tree Protocol (STP) per VLAN. PVST allows to optimize root switch placement for each VLAN and supports load balancing of VLANs over multiple trunk links.

Reference:

http://www.cisco.com/en/US/tech/ CK3 89/ CK3 90/technologies_tech_note09186a0080094665.shtml

QUESTION 27:

Which two can be used to associate network devices with a VLAN? (Choose two)

- A. NAT
- B. User ID
- C. MAC address
- D. Physical switch location

Answer: B, C

Explanation:

Assigning Switch Ports to a VLAN

VLANs are often associated with IP subnetworks. For example, all the end stations in a particular IP subnet

belong to the same VLAN. Traffic between VLANs must be routed. Port VLAN membership on the switch is assigned manually on a port-by-port basis. When you assign switch ports to VLANs using this method, it is known as port-based, or static, VLAN membership.

A VLAN created in a management domain remains unused until you assign one or more switch ports to the VLAN. If you specify a VLAN that does not exist, the VLAN is created and the specified ports are assigned to it.

With VMPS, you can dynamically assign switch ports to VLANs based on the source 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. When you enable VMPS, a MAC address-to-VLAN mapping database downloads from a Trivial File Transfer Protocol (TFTP) server to the VMPS server, and the VMPS server begins to accept client requests. VMPS remains enabled, regardless whether you reset or power cycle the switch.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps663/products_configuration_guide_chapter09186a008012238c.htm

QUESTION 28:

What is the primary benefit of QoS?

- A. It protects the integrity of the data as they traverse the network.
- B. It solves the problem of congestion caused by oversubscription.
- C. It ensures that voice traffic always receives highest queue priority.
- D. It ensures that end-to-end bandwidth is dedicated for time sensitive applications.

Answer: D

QUESTION 29:

Who typically owns the LAN and WAN links in an Enterprise network?

- A. The Enterprise owns the LAN links and the WAN links.
- B. The Service Provider owns the LAN links and the WAN links.
- C. The Enterprise owns the LAN links and the Service Provider owns the WAN links.
- D. The Enterprise owns the WAN links and the Service Provider owns the LAN links.

Answer: C

QUESTION 30:

Which WAN solution is the most cost-effective to meet the data connectivity requirements of a mid-size company with offices in five different cities?

- A. ATM WAN with a full mesh of soft PVCs.
- B. Voice/data WAN with a DTP ring at the central site.
- C. Frame Relay WAN in a hub-and-spoke architecture.

D. Leased line WAN with a partial mesh of fractional T1s.

Answer: C

QUESTION 31:

A remote branch office has a requirement for frequent two-way video conferencing with the headquarters location.

Which broadband access solution is best suited to meet this requirement?

- A. G.SHDSL
- B. Business Class ADLS
- C. Single-channel ISDN BRI
- D. Cable modem with dedicated bandwidth option

Answer: D

QUESTION 32:

What contributes to the increase in traffic on corporate WANs?

- A. Local/remote traffic ratios shifting from 80/20 to 90/10.
- B. Increased overhead required by advanced routing protocols.
- C. Growth of mobile users with direct access to the HQ campus backbone.
- D. New applications and multiservice networking being extended to branch offices.

Answer: D

QUESTION 33:

Which Cisco router series best meets Enterprise and Service Provider WAN edge requirements for scalable bandwidth, feature-rich support, and flexible connectivity options in a compact form factor?

- A. Cisco 3600 Series
- B. Cisco 3700 Series
- C. Cisco 7200 Series
- D. Cisco 7500 Series

Answer: C

Explanation:

Benefits of the Cisco 7200 series routers include:

- * Unparalleled Cisco IOS-based IP/MPLS feature support (QoS, Broadband Agg, Security, Multiservice, MPLS, and more)
- * Broad range of flexible, modular interfaces (from DS0 to OC12)
- * Support for Fast Ethernet, Gigabit Ethernet, Packet Over Sonet and more

- * Fully modular design in a 3RU footprint
- * Full L2TP and PPP termination support
- * Support for up to 16,000 broadband subscriber sessions with the NPE-G1
- * Service Accelerator using Cisco PXF technology
- * Multi-protocol support
- * Low initial investment
- * Scalability and flexibility; ideal for network re-deployment

Reference:

<http://www.cisco.com/en/US/products/hw/routers/ps341/index.html>

QUESTION 34:

The Catalyst 6500 Family of switches supports high availability by allowing which three components to be hot swappable? (Choose three)

- A. Chassis
- B. Switch bus
- C. Switch fabric
- D. Power supplies
- E. Supervisor engine
- F. All optional modules

Answer: C, D, E

QUESTION 35:

What enables the Cisco 7500 Series routers to provide high performance through distributed IP services?

- A. VIP and CEF
- B. VIP and VTP
- C. VPN and CEF
- D. VXR and CDP

Answer: A

Explanation:

Distributed Services

The Cisco 7500 Series provides a wide variety of services that can be distributed across multiple VIP processing engines. Table 1 provides a summary of the distributed services.

Table 1 Distributed Services	
Service	Features
Basic Switching	<ul style="list-style-type: none">▪ Cisco Express Forwarding (CEF)▪ IP fragmentation▪ Fast EtherChannel

Connectivity Services

When building an intranet or extranet, connectivity is a fundamental requirement upon which all the other services are built. The Cisco 7500 Series router provides high packet-forwarding performance by distributing the switching operation to the VIP. Distributed CEF ensures that the VIP is always able to provide the maximum packet throughput.

CEF is a non-cache-based switching mode for IP packets. Historically, all switching modes (except process switching) on Cisco routers have been cache-based. In cache-based switching, the first packet of a flow is sent up to process level, where its destination address is compared with the routing table to obtain forwarding information. Then a route cache entry with the corresponding forwarding information is built so those subsequent packets of the same flow can be fast-switched based on the route cache.

Reference:

http://www.cisco.com/en/US/products/hw/routers/ps359/products_white_paper09186a0080092233.shtml#wp1002293

QUESTION 36:

Which Cisco routers use the Parallel Express Forwarding (PXF) processor to provide accelerated services without degrading performance?

- A. Cisco 7300 and Cisco 7200 with NPE-400
- B. Cisco 7300 and Cisco 7513 with RSP16
- C. Cisco 7400 and Cisco 7200 with NSE-1
- D. Cisco 7400 and Cisco 7200 with NPE-400

Answer: C

Explanation:

Cisco Express Forwarding per-packet load balancing originally was supported in platforms that use software-based forwarding. Such

platforms include the 2600, 3600, and 7200 series. Per-packet load balancing is now supported in hardware using Parallel Express

Forwarding (PXF) on the 7200 series with a NSE-1, and 10000 series. On the Catalyst 6000 series, the Cisco IOS Cisco Express

Forwarding ip load-sharing per-packet, ip cef accounting per-prefix, and ip cef accounting non-recursive commands on the MSFC2

apply only to traffic that is Cisco Express Forwarding-switched in software on the MSFC2. The commands do not affect traffic that is

hardware Layer 3-switched on the PFC2 or on DFC-equipped switching modules.

Parallel Express Forwarding (PXF) technology embedded in the Cisco 7401 is the key for delivering line rate performance and

the features required in today's managed CPE environment.

Reference:

http://www.cisco.com/en/US/tech/CK8_27/CK8_31/technologies_tech_note09186a0080094806.shtml

QUESTION 37:

Which statement is true about a campus network as bandwidth scales from Fast Ethernet to Fast EtherChannel

to Gigabit Ethernet?

- A. Addressing and policy configurations may not need to change.
- B. QoS on the LAN is no longer required because bandwidth is not an issue.
- C. Required addressing and policy configuration changes are easy to implement.
- D. Spanning Tree Protocol (STP) can replace OSPF in the backbone due to the speed of convergence.

Answer: A

QUESTION 38:

Certkiller .com with a medium-size campus requires flexible 10/100/1000 wiring closet connectivity as well as Layer 2/3/4switching.

Which Cisco product should you recommend?

- A. Catalyst 2950 Series
- B. Catalyst 3550 Series
- C. Catalyst 4000 Series
- D. Catalyst 6500 Series

Answer: C

QUESTION 39:

Which Cisco product should be recommended for a wiring closet of the distribution layer requiring up to 240 ports of any combination of Gigabit or Fast Ethernet, copper, and fiber interfaces?

- A. Catalyst 3550 Series
- B. Catalyst 4000 Series
- C. Catalyst 5500 Series
- D. Catalyst 8500 Series

Answer: B

QUESTION 40:

A small campus network design collapses the distribution, core, and server switching functions into a single-tier backbone.

Which Cisco product should you recommend to provide multilayer functionality and mid-range density in the wiring closet?

- A. Catalyst 2900 Series
- B. Catalyst 3500 Series
- C. Catalyst 4000 Series
- D. Catalyst 6500 Series

Answer: B

QUESTION 41:

Certkiller .com with a small campus supporting 30 users wants to upgrade their wiring closet connectivity using a Layer 2 switch with a Gigabit Ethernet uplink.

Which Cisco product provides a cost-effective solution?

- A. Catalyst 2691G
- B. Catalyst 2912G
- C. Catalyst 2948G
- D. Catalyst 3550-12G

Answer: C

QUESTION 42:

Which Catalyst switch should be recommended to support wiring closet 10/100 Ethernet port densities of 300-250 ports for a large Enterprise campus?

- A. Catalyst 6506
- B. Catalyst 6509
- C. Catalyst 6509-NEB
- D. Catalyst 6513

Answer: B

QUESTION 43:

Which are two characteristics of Layer 3 switches not usually found in traditional routers? (Choose two)

- A. Packet forwarding function is done in hardware (ASICs).
- B. They provide high-speed switching and high interface density.
- C. They support a broad range of protocols for WAN aggregation.
- D. A variety of metrics stored in ASICs is used for path determination.

Answer: A, B

QUESTION 44:

Which three design considerations are generally included at the access layer of the three-level hierarchical campus network design? (Choose three)

- A. VLAN routing
- B. Media transitions

- C. Scalable port density
- D. QoS to prioritize traffic
- E. Redundant high-speed uplinks

Answer: A, C, E

QUESTION 45:

You need to equip a wiring closet to provide network access for 40 workstations, 40 IP telephones, and 10 wireless access points.

Which Catalyst switch would meet the need?

- A. Catalyst 4003
- B. Catalyst 4006
- C. Catalyst 4912G
- D. Catalyst 4908G-L3

Answer: B

Explanation:

The Catalyst 4006 chassis offers:

- * Flexible six-slot modular chassis, with one slot reserved for a supervisor engine and five remaining slots for switched port modules
- * Three power supply bays that support redundant (option), load-sharing, fault-tolerant AC or DC power supplies
- * Hot-swappable fan tray bay
- * Familiar Catalyst 6000/5000 look and feel with consistent interfaces and indicators
- * Up to 240 10/100 or 100-FX Fast Ethernet ports, with dual Gigabit Ethernet Uplink ports, can be installed into one chassis
- * Up to 240 10/100/1000BaseT triple-speed auto-sensing ports or 240 1000BASE-LX ports
- * Up to 48 million packets-per-second throughput for Layer2/3/4 traffic, with 64 Gbps switching bandwidth
- * Advanced Quality of Service (QOS) and Bandwidth Management
- * Modular chassis flexibility and the variety of module speed mixes
- * Optional integrated WAN and voice services

Cisco Systems(r) pioneered the provision of inline power over Ethernet with the Cisco Catalyst switches. The Cisco Catalyst 4006 extends this inline power capability to all wiring closets and the branch office while maintaining the value of a modular architecture.

The Cisco Catalyst 4006 provides the inline power directly from the Fast Ethernet module. To support the new demand for phone power with the inline power feature, Cisco has developed an auxiliary DC power shelf that supplies the Cisco Catalyst 4006 with the 48 VDC required to power IP phones.

Figure 5

The Cisco Catalyst 4000 Inline Power Solution Prepares the Infrastructure for Convergence and Simplifies IP Telephony Deployment



By providing auxiliary power from a supply external to the switching chassis, customers have the added flexibility of being able to prepare for IP telephony deployment without affecting the form factor or price or performance characteristics of the Cisco Catalyst 4006. With inline power 10/100BASE-TX switching line cards, shown in the Cisco Catalyst 4006 chassis in Figure 5 above, the infrastructure is ready for inline power and positioned for deploying IP phones. Inline power is enabled at the appropriate time with the addition of the Cisco Catalyst 4000 Auxiliary DC Power Shelf.

Reference:

http://www.cisco.com/en/US/products/hw/modules/ps2797/products_white_paper09186a00800924e1.shtml

QUESTION 46:

Which three are commonly used as a backbone architecture in campus LANs? (Choose three)

- A. ATM
- B. Ethernet
- C. Fast Ethernet
- D. Gigabit Ethernet
- E. Fast FiberChannel
- F. Gigabit Token Ring

Answer: A, C, D

QUESTION 47:

Which three products compete with the Cisco SOHO and CISCO 800 series in the small office and telecommuter markets? (Choose three)

- A. Intel 8100
- B. Netopia 5100
- C. Huawei 3600 Series
- D. ADC Kentrox Pacesetter
- E. Lucent Ascend Max 75/85
- F. Nortel/Bay Passport Series 400

Answer: A, D, E

QUESTION 48:

How many LAN ports can the integrated switching modules on the Cisco 3700 Series branch office platform

support? (Choose two)

- A. 8 ports
- B. 16 ports
- C. 18 ports
- D. 32 ports
- E. 36 ports

Answer: B, E

QUESTION 49:

Which five WAN interfaces are supported on the Cisco 1700 Series access routers? (Choose five)

- A. ATM
- B. ADSL
- C. G.SHDSL
- D. ISDN BRI
- E. Frame Relay
- F. Leased line at T1/E1

Answer: B, C, D, E, F

Explanation:

Cisco 1700 Series WAN Modules

WAN Interface Cards (WICs)	
WIC-1T	1-Port Serial WAN Interface Card
WIC-2T	2-Port Serial WAN Interface Card
WIC-4ESW	Cisco 4-Port Fast Ethernet Switch WAN Interface Card
WIC-2A/S	2-Port Async/Sync Serial WAN Interface Card
WIC-1DSU-T1-V2	1-Port T1/Fractional T1 DSU/CSU WAN Interface Card
WIC-1DSU-56K4	1-port 4-WIRE 56/64 KBPS DSU/CSU WAN INTERFACE CARD
WIC-1B-U-V2	1-Port ISDN with NT-1 WAN Interface Card (dial and leased line)
WIC-1B-S/T	1-Port ISDN WAN Interface Card (dial and leased line)
WIC-1ADSL-I-DG	1-port ADSLoISDN WAN Interface Card with Dying Gasp
WIC-1ADSL-DG	1-port ADSL WAN Interface Card with Dying Gasp
WIC-1SHDSL	1-Port G.SHDSL WAN INTERFACE CARD
WIC-1AM	1-port Analog Modem WAN Interface Card
WIC-2AM	Two-port Analog Modem WAN Interface Card
WIC-1ENET	One-Port Ethernet WAN Interface Card

Reference:

http://www.cisco.com/en/US/products/hw/routers/ps221/products_relevant_interfaces_and_modules.html

QUESTION 50:

What are two benefits of Cisco Easy VPN Server on the Cisco 1700 Series routers? (Choose two)

- A. Reduces the complexity of VPN deployments.
- B. Includes QoS features that prioritize VPN traffic.
- C. Eliminates remote site administration and support requirements.
- D. Supports VPN clients that implement the IETF VPN Remote standard.
- E. Supports mobile workers running Cisco VPN Client software and laptops.

Answer: A, E

QUESTION 51:

A telecommuter customer plans to obtain broadband service from their local cable provider. Which Cisco product should you recommend?

- A. Cisco uBR925
- B. Cisco 829-uBR
- C. Cisco uBR7111
- D. Cisco 1710 with Cable WIC

Answer: A

QUESTION 52:

Why is the Cisco Router Web SetUp Tool important for the Cisco SOHO Series and Cisco 800 Series routers?

- A. It is the only way for these routers to be configured.
- B. It enables automatic configuration from the hub site router.
- C. It enables simplified setup and supports advanced configurations.
- D. It automatically retrieves stored configurations from the Cisco website.

Answer: C

QUESTION 53:

Which three VPN features are supported on the Cisco 1700 Series modular access routers? (Choose three)

- A. IPSec multicast
- B. Site-to-site VPNs
- C. Crypto support for multiple languages
- D. Easy VPN Server and Easy VPN Remote
- E. VPN hardware module for wire-speed IPSec 3DES encryption

Answer: B, E, F

QUESTION 54:

Which Cisco multiservice access router supports Fast Ethernet, 3 WIC slots, 2 AIM slots on board, and 16-port Etherswitch in a 2RU form factor?

- A. Cisco 2691
- B. Cisco 3640
- C. Cisco 3660
- D. Cisco 2651X

Answer: A

QUESTION 55:

Which feature on the Cisco SOHO and Cisco 800 Series routers offer security and the ability for multiple users to share a single IP address from the service provider?

- A. ACL/CLI
- B. PAT/NAT
- C. PAP/CHAP
- D. DSCP/CRTP

Answer: B

QUESTION 56:

Which three Catalyst switches should be deployed when inline power is required to IP phones or wireless access points? (Choose three)

- A. Catalyst 2950
- B. Catalyst 2980
- C. Catalyst 4003
- D. Catalyst 4006
- E. Catalyst 6509
- F. Catalyst 3524-PWR-XL

Answer: D, E, F

QUESTION 57:

The 3Com Office Connect Remote 511/521 ISDN routers compete directly with which Cisco product(s)?

- A. Cisco 800 Series
- B. Cisco 675 and 678
- C. Cisco uBR 900 Series

D. Cisco SOHO 70 Series

Answer: A

QUESTION 58:

Which network traffic pattern was Cisco Express Forwarding (CEF) designed to address?

- A. Higher number of unique flows with longer flow durations.
- B. Homogenization of traffic flows with longer flow durations.
- C. Higher number of unique flows with shorter flow durations.
- D. Homogenization of traffic flows with shorter flow durations.

Answer: C

QUESTION 59:

What does the Catalyst 6500 Network Analysis Module (NAM) provide?

- A. Software-based "sniffing".
- B. Export of data to be standard reports software.
- C. Single module coverage for an entire network.
- D. Scalable performance, standards-based, easy to use, cost effective.

Answer: D

QUESTION 60:

Where does Cisco recommend the Catalyst 4006 be used?

- A. The core of large enterprises.
- B. Distribution layers of large enterprises.
- C. Wiring closets and small branch offices.
- D. Large branch offices and enterprise aggregation points.

Answer: C

QUESTION 61:

Which three intelligent QoS services do Catalyst core switches have? (Choose three)

- A. IP Precedence
- B. Intrusion detection
- C. Gigabit EtherChannel
- D. Multiple queues with WRR
- E. Congestion techniques such as WRED

Answer: A, D, E

QUESTION 62:

With Gigabit EtherChannel, port bundles can be aggregated to provide _____ Gbps total bandwidth on a single logical link between devices.

- A. 16
- B. 24
- C. 32
- D. 64

Answer: A

QUESTION 63:

Why is IEEE 802.1q important to Cisco?

- A. It is the industry standard for end-to-end QoS.
- B. It allows Cisco IOS software to run on non-Cisco equipment.
- C. It extends Cisco QoS to non-Cisco equipment on a session basis.
- D. It allows Cisco QoS to interact seamlessly on non-Cisco equipment.

Answer: D

QUESTION 64:

Which statement about multicast and broadcast is true?

- A. Multicast guarantees datagram delivery, whereas broadcasts do not.
- B. Multicast is connection-based, whereas broadcasts are connectionless.
- C. Multicast sends one message that is routed only to subscribers, whereas broadcasts send messages to every client on the network.
- D. Multicast sends a separate message from the source to every subscriber client, whereas broadcasts send one message for all network clients.

Answer: C

QUESTION 65:

VLAN are characterized by _____.? (Choose two)

- A. A Layer 2 foundation
- B. A Layer 3 foundation.
- C. Logical subsets of devices within a MAC-bridged LAN.

D. Physical subsets of devices within a MAC-bridged LAN.

Answer: A, C

QUESTION 66:

What is inter-VLAN communication conducting through?

- A. Layer 3 routing
- B. Layer 2 routing only
- C. Layer 2 switching only
- D. Layer 2 and 3 switching

Answer: A

QUESTION 67:

What does VLAN trunking do?

- A. Provides higher bandwidth links between switches.
- B. Allows VLAN members to reside on multiple switches.
- C. Provided direct administrative connectivity to any VLAN device.
- D. Attaches VLAN tags to each packet to identify the native VLAN switch.

Answer: B

QUESTION 68:

Which three do the Cisco 2600 Series access routers use to support over 50 interfaces? (Choose three)

- A. PA
- B. NM
- C. CIP
- D. VIC
- E. WIC
- F. AIM-COMPR2

Answer: A, B, E

QUESTION 69:

What service can be supported on the Cisco 1751 and Cisco 1760 with SRST?

- A. Scalable RTP Transport.
- B. IP telephony services at a small branch office.
- C. Survivable Remote Secure VoFR and VoIP services.

D. Secure Redundant Scalable Telephony over VoATM.

Answer: C

QUESTION 70:

Which Cisco router series offers a range of solutions for a telecommuter who requires ISDN BRI support?

- A. SOHO 70 Series modular routers.
- B. Cisco 800 Series modular routers.
- C. SOHO 70 Series fixed configuration routers.
- D. Cisco 800 Series fixed configuration routers.

Answer: D

QUESTION 71:

A corporate branch office with 75 users needs multiservice connectivity back to headquarters. Minimal user growth is expected.

Which Cisco product should you recommend?

- A. Cisco 828
- B. Cisco 1721
- C. Cisco 1751
- D. Cisco 2651

Answer: C

QUESTION 72:

The Cisco 1700 Series access routers are modular.

What does modular mean?

- A. They have slots for various interface cards and can be easily upgraded.
- B. They can use the same AIM service modules as the Cisco 2600 Series.
- C. They can be easily moved around a site due to their desktop form factor.
- D. Up to four Cisco 1700s can be stacked and managed as a single module.

Answer: A

QUESTION 73:

What is a weakness of the Efficient Speedstream 8600 when compared to the Cisco 1700 Series?

- A. No support for analog voice ports.

- B. Lack of network management features.
- C. Lack of dual WAN for load sharing and backup.
- D. Lack of modular WAN interfaces to support different xDSL technologies.

Answer: B

QUESTION 74:

Why is the fixed LAN port on the Cisco 800 series routers 10baseT?

- A. Small LAN hubs and switched only support 10baseT.
- B. There is not enough room on the back to include a 100baseT port.
- C. Standard Ethernet provides sufficient capacity for small office LANs.
- D. This ensures no packets are dropped as they are routed to the high-speed WAN uplink.

Answer: C

QUESTION 75:

Which three security features are standard on the Cisco 3600 Series branch office routers? (Choose three)

- A. IDS
- B. ACLs
- C. DiffServ
- D. IOS Firewall
- E. McAfee NetShield
- F. Easy VPN Remote

Answer: B, D, F

Not C: DiffServ is not a security feature. It is a QoS mechanism.

QUESTION 76:

Which three key features distinguish the Cisco 800 Series from the Cisco SOHO70 Series? (Choose three)

- A. G.SHDSL
- B. VPN support
- C. Lock and key
- D. Advanced QoS
- E. T1/E1 serial port
- F. Field-upgradable memory

Answer: A, B, F

QUESTION 77:

Huawei is a fast rising competitor to Cisco's branch office routers in specific theaters. What are three advantages of using Cisco over Huawei? (Choose three)

- A. Faster CPU clock speed.
- B. Lower initial purchase price.
- C. Field upgradeable memory options.
- D. Advanced QoS and security features.
- E. A rich set of WAN interfaces and modular configuration options.

Answer: C, D, E

QUESTION 78:

Which Cisco Catalyst switch provides a cost-effective solution for wiring closet applications requiring 40-60 ports of Fast Ethernet and dual Gigabit Ethernet uplinks?

- A. Catalyst 2980G
- B. Catalyst 3550
- C. Catalyst 4006
- D. Catalyst 5505

Answer: A

QUESTION 79:

A wiring closet switching solution for a large campus needs to maximize redundant uplink bandwidth to the distribution switched.

Which key capability should be included on the wiring closet switch?

- A. Fast EtherChannel
- B. Gigabit EtherChannel
- C. Dynamic Packet Transport
- D. Dual Gigabit Ethernet links running Spanning Tree Protocol (STP)

Answer: B

QUESTION 80:

Which three features of the Catalyst 6500 Series maximize fault tolerance and redundancy to create a highly-available multilayer core backbone? (Choose three)

- A. Rapid spanning tree
- B. Redundant Supervisor Modules
- C. Multimode Cisco EtherChannel

- D. Redundant Route Switch Modules
- E. Automatic Protection Switching (APS)
- F. Hot Standby Switching Protocol (HSSP)

Answer: B, D, E

QUESTION 81:

Certkiller .com with a large campus network currently has a router and hub topology and ATM switches in the core. They want to implement a multilayer switching solution on the core and eventually migrate from ATM to Gigabit Ethernet.

Which Cisco product should you recommend?

- A. Catalyst 5000 Series
- B. Catalyst 6500 Series
- C. Catalyst 7500 Series
- D. Catalyst 8500 Series

Answer: D

QUESTION 82:

Which Cisco Catalyst switch should be used for a large campus server farm requiring high-availability features and needing to scale to high-density Gigabit Ethernet?

- A. Catalyst 4000 Series
- B. Catalyst 5000 Series
- C. Catalyst 6500 Series
- D. Catalyst 8500 Series

Answer: C

QUESTION 83:

Certkiller .com is looking for a WAN core router that offers:

1. Distributed switching
2. Distributed services
3. Redundancy for the primary processor

Which Cisco product should be proposed?

- A. Cisco 7315
- B. Cisco 7505
- C. Cisco 7507
- D. Cisco 7601

Answer: D

QUESTION 84:

Which Cisco product is the highest performance 1 RU router on the market?

- A. Cisco 7140
- B. Cisco 7202VXR
- C. Cisco 7304
- D. Cisco 7401

Answer: D

Explanation: Per the Cisco website, "The Cisco 7400 Series Internet Router is the highest performance single-rack unit (RU) router on the market."

QUESTION 85:

What is the primary purpose of a WAN edge router when used for WAN aggregation?

- A. Aggregate leased lines from multiple locations to the service provider network or the Internet.
- B. Aggregate broadband and remote dial up subscriber for tunneling into a Virtual Private Network.
- C. Aggregate high-density LAN connections, apply services, and pass traffic to the full mesh WAN core.
- D. Aggregate traffic from Enterprise WAN edge gateways and gatekeepers to the PSTN or the Internet.

Answer: A

QUESTION 86:

Which two are characteristics of Cisco switches with routing capabilities? (Choose two)

- A. High WAN port density
- B. Layers 2 and 4-7 switching
- C. Normally used at the network core
- D. High level of performance per port

Answer: C, D

QUESTION 87:

When comparing the Catalyst 2950 to the Catalyst 6500, the price per port on the Catalyst 2950 is _____.

- A. Lower
- B. Higher
- C. Relatively the same
- D. Dependent upon the software options loaded on the Catalyst 2950

Answer: A

QUESTION 88:

In order to contain costs, many corporations are leveraging their _____ to run critical business applications.

- A. Intranets
- B. Extranets
- C. Service providers
- D. Supply chain partners

Answer: A

QUESTION 89:

Which two are LAN market drivers? (Choose two)

- A. Equipment prices
- B. Networked applications
- C. Bandwidth consumptions
- D. Processing power of client desktops

Answer: BC

QUESTION 90:

Which campus network component can dynamically decide whether to route or switch incoming traffic based on data link and network addresses?

- A. Router
- B. Layer 2 switch
- C. Layer 3 switch
- D. PXF processor

Answer: C

QUESTION 91:

What is an important reason for campus LAN traffic patterns to move from the 80/20 model to the 20/80 traffic model?

- A. The deployment of high performance multilayer switched.
- B. Corporate intranets and distributed multimedia applications.
- C. 20% of the users on campus networks generating 80% of the traffic.

D. The move away from server farms back to distributed workgroup servers.

Answer: B

QUESTION 92:

Which two are benefits of deploying Layer 2 LAN switched in campus network wiring closets? (Choose two)

- A. Dedicated bandwidth to the desktop.
- B. More efficient use MAC address space.
- C. Minimization or elimination of collision domains.
- D. Redundancy to the desktop due to spanning tree.
- E. Inter-VLAN communications enabled at the wiring closets.

Answer: A, C

QUESTION 93:

In large campus design, separate devices operate at which three layers in the hierarchical design model? (Choose three)

- A. Core layer
- B. Access layer
- C. Network layer
- D. Transport layer
- E. Application layer
- F. Distribution layer

Answer: A, B, F

QUESTION 94:

In the large campus network, which are the most appropriate product choices for the distribution and the core?

- A. Catalyst 6500 for distribution, Catalyst 6500 or 8500 for the core.
- B. Catalyst 3550 for distribution, Catalyst 6500 or 8500 for the core.
- C. Catalyst 4000 for distribution, Catalyst 4000 or 6500 for the core.
- D. Catalyst 2950 for distribution, Catalyst 3550 or 6500 for the core.

Answer: A

QUESTION 95:

In a medium-sized campus network, the distribution and core layers collapsed into a single tier.

What is the most appropriate wiring closet and core combination?

- A. Catalyst 3550 for the wiring closet, Catalyst 4000 for the core.
- B. Catalyst 4000 for the wiring closet, Catalyst 6500 for the core.
- C. Catalyst 3550 for the wiring closet, Catalyst 6500 for the core.
- D. Catalyst 2950 for the wiring closet, Catalyst 4000 for the core.

Answer: B

QUESTION 96:

Which Cisco product offers the most cost effective solution in a campus network that requires multi-protocol connectivity for ATM, SONET, and IP?

- A. Catalyst 3550
- B. Catalyst 4000
- C. Catalyst 6500
- D. Catalyst 8500

Answer: B

QUESTION 97:

What is the general guideline for the recommended Cisco Product at the access layer in large campus networks?

- A. The customer may choose the density and price/port appropriate to their network needs.
- B. The Catalyst 6500 Series is the preferred choice in all cases because of port density and features.
- C. The Catalyst 4000 Series is the preferred choice in all cases because of its modularity and form factor.
- D. The Catalyst 3550 Series and Catalyst 2950 Series with clustering provide the most scalable access solution for any size network.

Answer: A

QUESTION 98:

What provides an end-to-end solution, simplifying management, QoS, multicast and security policies when deployed on all switched and routers?

- A. 802.1q
- B. FlexWAN
- C. Cisco IOS
- D. Catalyst OS

Answer: C

QUESTION 99:

What is made possible by the Catalyst 6500 256 Gbps crossbar switch fabric on a line card called the Switch Fabric Module?

- A. Backplane bandwidth can be doubled by installing a second Switch Fabric Module.
- B. Future bandwidth enhancements can be deployed by replacing the Switch Fabric Module.
- C. Backplane bandwidth is scalable by upgrading the processor on the Switch Fabric Module.
- D. The Supervisor Engine can be eliminated from the forwarding path of packets flows, eliminating a traffic bottleneck.

Answer: B

QUESTION 100:

What must a Catalyst 4006 have to support inline power required for IP telephones and wireless access points? (Choose three)

- A. An RPS 300.
- B. A commercial uninterruptible supply (UPS).
- C. An external power shelf with at least two power supplies.
- D. A Power Entry Module (PEM) in the existing power bay of the 4006.
- E. The switching line card that supplies power to the phone or access points over category 5 cabling.

Answer: C, D, E

QUESTION 101:

Which Catalyst 6500 architecture is most appropriate for enterprise customers that require a lot of bandwidth?

- A. Cache-based switching
- B. Distributed cache-based switching
- C. Distributed Cisco Express Forwarding-based switching
- D. Centralized Cisco Express Forwarding-based switching

Answer: D

QUESTION 102:

Why is the Catalyst 6500 Family switch the most advanced in the industry?

- A. It provides up to 224 Mbps of backbone bandwidth.
- B. It provides intelligent network services at wire speeds.
- C. Its modularity allows growth to 1152 10/100 Ethernet ports.
- D. Redundant and hot swappable components provide unequalled availability.

Answer: B

QUESTION 103:

In the Catalyst 6500 switch, multiple IDS modules may be used _____.

- A. But traffic latency increases with each additional IDS module.
- B. With each IDS module dedicated to monitor specific channels.
- C. With load balancing among modules allowing scalable traffic monitoring.
- D. But the resulting degradation of packet forwarding performance should be considered before deployment.

Answer: C

QUESTION 104:

The Catalyst 4003 and 4006 switched leverage the software code base of the _____.

- A. Catalyst 2950 Family
- B. Catalyst 3550 Family
- C. Catalyst 6500 Family
- D. Catalyst 8500 Family

Answer: C

QUESTION 105:

What does the Cisco Assure Intrusion Detection System (IDS) Module used in the Catalyst 6500 Family do? (Choose two)

- A. Sets full attack signatures.
- B. Provides de-centralized, switch-based policy management.
- C. Protects revenue streams with real-time detection of denial-of-service attacks.
- D. Eliminates future denial-of-service attacks by disabling the destination of the attack.
- E. Automatically enables network traffic egress through the firewall when an intrusion is detected.

Answer: A, C

QUESTION 106:

Which product provides low cost, mid-range switched Gigabit Ethernet aggregation to workstations or servers?

- A. Catalyst 4003
- B. Catalyst 4006

- C. Catalyst 4912G
- D. Catalyst 4908G-L3

Answer: C

QUESTION 107:

Which device extends deployment of the Catalyst 6500 Family to the WAN edge?

- A. FlexWAN Module
- B. 24-port FXS Module
- C. Switch Fabric Module
- D. Access Gateway Module

Answer: A

QUESTION 108:

ADSL is a popular broadband service offering from service providers.
Which three are characteristic of ADSL? (Choose three)

- A. Always on service providing 7x24 network access.
- B. Available virtually anywhere dial access is available.
- C. High-speed delivery of services over conventional telephone wires.
- D. Dedicated bandwidth end-to-end from the remote site to the central site.
- E. High-speed uplink (640 kbps to 2.4 mbps) for frequent large file uploads.
- F. High-speed downlink (1.5 mbps to 8 mbps) for frequent large file downloads.

Answer: A, C, F

QUESTION 109:

What are two key benefits of using a Frame Relay WAN solution? (Choose two)

- A. It required fewer WAN links then leased line.
- B. Fixed size frames ensure predictable latency.
- C. A wide variety of routers have Frame Relay interfaces.
- D. It enables an easy migration to an MPLS VPN for enterprises.
- E. Advanced QoS is provided by the Service Provider at no charge.

Answer: A, C

QUESTION 110:

Why are advanced QoS features often implemented on multiservice WAN links?

- A. To minimize delay and reduce jitter for voice traffic.
- B. To eliminate jitter for high priority data applications.
- C. To avoid packet fragmentation and prioritize large packet flows.
- D. To complement advanced security features implemented on the LAN.

Answer: A

QUESTION 111:

What three major trends are driving the market for more powerful routers in corporate branch offices?
(Choose three)

- A. Traffic prioritization on low-speed WAN links.
- B. Increasing requirement for network security.
- C. Rapid growth of Gigabit Ethernet to the desktop.
- D. Rapid adoption of Linux as a viable OS for laptops.
- E. Convergence of voice and data on a single network.
- F. The move toward multiprotocol-routed WAN backbones.

Answer: A, B, E

QUESTION 112:

The Catalyst 2950 switch is best positioned for which network architecture layer?

- A. Core
- B. Access
- C. Distribution
- D. Server aggregation

Answer: B

QUESTION 113:

Which Catalyst switches are used mostly for desktop connectivity?

- A. Catalyst 2950 and Catalyst 4000
- B. Catalyst 2950 and Catalyst 3550
- C. Catalyst 3550 and Catalyst 4000
- D. Catalyst 4000 and Catalyst 6500

Answer: B

QUESTION 114:

Which web-based router management tool is available as a standard feature on all Cisco Integrated

Services Routers?

- A. QPM
- B. SDM
- C. CRWS
- D. CiscoWorks
- E. Cisco Access Router Manager

Answer: B

QUESTION 115:

Why are Cisco LAN products categorized into families?

- A. To ensure network compatibility.
- B. To organize them by price/performance ratios.
- C. To provide correlation with the network architecture layers.
- D. To facilitate selection of the most appropriate product for the situation.

Answer: D

QUESTION 116:

What is employed in stack configuration connections to insure against a single point of failure?

- A. GBIC spanners
- B. Redundant CBICs
- C. A start configuration
- D. Loopback connections

Answer: D

QUESTION 117:

The Redundant Power Supply (RPS) 300 system supplies internal power supply redundancy for up to _____ Catalyst 2980G-A and Catalyst 3524-PWR-XL switches.

- A. two
- B. four
- C. six
- D. eight

Answer: C

QUESTION 118:

Using Switch Clustering on the Catalyst 2950 and 3550 switched, users can manage over ____ ports from a single IP address.

- A. 192
- B. 240
- C. 288
- D. 380

Answer: D

QUESTION 119:

Which is a benefit of Catalyst 2950 Series switches?

- A. The support Layer 2-5 switching.
- B. They can be clustered and stacked.
- C. Modularity provides investment protection.
- D. They share the same operating system as all Catalyst switched.

Answer: B

QUESTION 120:

The Gigastack GBIC may be used to cascade up to ____ Catalyst 2950 and/or 3550 switches.

- A. 6
- B. 7
- C. 8
- D. 9

Answer: D

QUESTION 121:

Which statement best describes SDM 2.0?

- A. Includes other management functions such as NAM Traffic Analyzer.
- B. Provides real-time validation of application usage of WAN bandwidth using NetFlow.
- C. Ships automatically with all ISR security bundles.
- D. Offers the industry-leading security management tool that is available for all Cisco router and Catalyst switch platforms.

Answer: C

QUESTION 122:

How many different feature-set options does Cisco IOS Release 12.3 have?

- A. 4
- B. 8
- C. 12
- D. 24
- E. 44

Answer: B

QUESTION 123:

How many additional DSPs are required when ordering voice bundles on a Cisco Integrated Services Router platform?

- A. none
- B. one
- C. two
- D. three
- E. four

Answer: A

QUESTION 124:

What are the two main enhancements to the new Cisco 2800/3800 Integrated Services Router platforms? (Choose two.)

- A. built-in voice services
- B. integrated security features
- C. 100 percent WIC backward compatibility
- D. 100 percent NM backward compatibility
- E. NME-X slots to support the PVDM2 modules

Answer: A, B

QUESTION 125:

The USB port on the Cisco Integrated Services Router will be used for what purpose in the future?

- A. to offer console port access
- B. to offer AUX port access
- C. to offer storage of security credentials
- D. to connect a Wireless USB Network Adapter
- E. to connect to a real-time clock (hardware calendar)

Answer: C

QUESTION 126:

Which two components are included with every Cisco Integrated Services Router entry-level security bundle? (Choose two.)

- A. router
- B. AIM-VPNII
- C. PVDM
- D. Cisco IOS Advanced Security

Answer: A, D

QUESTION 127:

What is the maximum number of telephones supported by the Cisco 3845 Integrated Services Router using Cisco CallManager Express 3.2?

- A. 200
- B. 210
- C. 220
- D. 240

Answer: D

QUESTION 128:

What is the maximum DRAM size supported on a Cisco 3845 Integrated Service Router?

- A. 256 MB
- B. 512 MB
- C. 1 GB
- D. 2 GB

Answer: C

QUESTION 129:

Which two routers support internal voice integration? (Choose two.)

- A. Cisco 831 Ethernet Broadband Router
- B. Cisco 1721 Modular Access Router
- C. Cisco 1841 Integrated Service Router
- D. Cisco 2801 Integrated Service Router

E. Cisco 3825 Integrated Service Router

Answer: D, E

QUESTION 130:

How many voice bundles are available for all Cisco Integrated Service Router platforms?

- A. three
- B. four
- C. six
- D. eight

Answer: B

QUESTION 131:

Which solution that is used to prevent vulnerable and noncompliant hosts from accessing the network is included in every Cisco Integrated Service Router security bundle?

- A. NBAR
- B. NAC
- C. NetFlow
- D. IPS
- E. Easy VPN

Answer: B

QUESTION 132:

Which statement best describes SRST?

- A. implements voice compression to save bandwidth on WAN connections
- B. enables branch locations for voice and toll bypass
- C. enables bran locations for voice with centralized Cisco CallManager
- D. implements VPN acceleration
- E. implements voice encryption

Answer: C

QUESTION 133:

How many security bundles are available for every Cisco Integrated Service Router Plattform?

- A. three
- B. four

- C. six
- D. eight

Answer: A

QUESTION 134:

Which two router platforms support both Cisco inline power and 802.3af? (Choose two.)

- A. Cisco 1800 Series Integrated Service Router
- B. Cisco 2600 Series Multiservice Platforms
- C. Cisco 2800 Series Integrated Service Router
- D. Cisco 3600 Series Multiservice Platforms
- E. Cisco 3800 Series Integrated Service Router

Answer: C, E

QUESTION 135:

What is the significance of the number 128 in the fair-queue 128 router command?

- A. It is the priority value for the interface.
- B. It is the minimum bandwidth level for the queue.
- C. It is the maximum bandwidth allocation for the queue.
- D. It is the number of queues that will be allocated from memory.
- E. It is the maximum number of messages that will be queued for a traffic type.

Answer: E

Explanation:

fair-queue (WFQ)

To enable weighted fair queueing (WFQ) for an interface, use the fair-queue interface configuration command.

To disable weighted fair queueing for an interface, use the no form of this command.

fair-queue[congestive-discard-threshold[dynamic-queues[reservable-queues]]]

no fair-queue

Syntax Description

congestive-discard-threshold	(Optional) Number of messages allowed in each queue. The default is 64 messages, and a new threshold must be a power of 2 in the range 16 to 4096. When a conversation reaches this threshold, new message packets are discarded.
------------------------------	---

dynamic-queues	(Optional) Number of dynamic queues used for best-effort conversations (that is, a normal conversation not requiring any special network services). Values are 16, 32, 64, 128, 256, 512, 1024, 2048, and 4096. See Table 3 and Table 4 in the fair-queue (class-default) command for the default number of dynamic queues.
reservable-queues	(Optional) Number of reservable queues used for reserved conversations in the range 0 to 1000. The default is 0. Reservable queues are used for interfaces configured for features such as Resource Reservation Protocol (RSVP).

fair-queue(class-default)

To specify the number of dynamic queues to be reserved for use by the class-default class as part of the default class policy, use the fair-queue policy-map class configuration command. To delete the configured number of dynamic queues from the class-default policy, use the no form of this command.

fair-queue[number-of-dynamic-queues]

no fair-queue [number-of-dynamic-queues]

Syntax Description

number-of-dynamic-queues	(Optional) A power of 2 number in the range of 16 to 4096 specifying the number of dynamic queues.
--------------------------	--

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_command_reference_chapter09186a0080080794.h

QUESTION 136:

Which two traffic queuing methods are enabled by default on Cisco routers? (Choose two)

- A. FIFO
- B. Priority
- C. Custom
- D. Weighted Fair

Answer: A, D

QUESTION 137:

Which commands displays information on multilink bundles that are active?

- A. show multilink
- B. show ppp status
- C. show mlppp status
- D. show ppp multilink
- E. show ppp negotiation

Answer: D

Explanation:

show ppp multilink

To display bundle information for the Multilink PPP bundles, use the show ppp multilink command in EXEC mode.

show ppp multilink

Syntax Description

This command has no arguments or keywords.

Command Modes

EXEC

Command History

Release	Modification
11.2	This command was introduced.

Examples

The following is the output when no bundles are on a system:

Router# show ppp multilinkNo active bundlesThe following is the output when a single Multilink PPP bundle (named

rudder) is on a system:

Router# show ppp multilinkBundle rudder, 3 members, first link is BRI0: B-channel 10 lost fragments, 8 reordered, 0 unassigned, sequence

0x1E/0x1E rcvd/sentThe following is the output when two active bundles are on a system. Subsequent bundles would be displayed below the previous bundle.

Router# show ppp multilinkBundle rudder, 3 members, first link is BRI0: B-Channel 1 0 lost fragments, 8 reordered, 0 unassigned, sequence

0x1E/0x1E rcvd/sentBundle dallas, 4 members, first link is BRI2: B-Channel 1 0 lost fragments, 28 reordered, 0 unassigned, sequence 0x12E/0x12E rcvd/sent

Table95 show ppp multilink Field Descriptions

Field	Description
Bundle	Configured name of the multilink bundle.
1 member	Number of interfaces in the group.
Master link is Virtual-Access1	Multilink bundle virtual interface.
Bundle under BAP control	Multilink bundle is controlled

	and bandwidth is allocated by BACP.
Dialer Interface is Dialer1	Name of the interface that dials the calls.
1/255 load	Load on the link in the range 1/255 to 255/255. (255/255 is a 100% load.)
Member links: 1	Number of child interfaces.
BRI0:1	Identity of the child interface. Link 1 is using physical interface BRI 0:1.
Discriminators Local Remote BRI0:1 24 1	LCP link discriminators, which are identifiers negotiated for each link in the bundle. This information is specific to BACP. BACP uses these discriminators to determine which link to drop during negotiations.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_command_reference_chapter09186a0080080d

QUESTION 138:

Multilink PPP can improve throughput and reduce latency by using which two features? (Choose two)

- A. Adding 8 kbps to each B channel for 16 kbps in-band management.
- B. Load balancing based on an XOR of the Layer 2 addresses in the packets.
- C. Bandwidth aggregation by splitting packets and sending the fragments over parallel circuits.
- D. Initializing the second B channel when the first B channel reaches a specified bandwidth utilization.

Answer: C, D

QUESTION 139:

What is the EIGRP multicast flow timer?

- A. The timer after which EIGRP stops forwarding multicast data traffic.
- B. The timeout timer after which EIGRP retransmits, unicasting the neighbor not in CR mode.
- C. The time interval between consecutive received EIGRP hello intervals.
- D. The time interval between consecutive transmitted EIGRP hello intervals.
- E. The timeout timer after which EIGRP retransmits, unicasting the neighbor in CR mode.

Answer: B

Explanation:

Table49 show ip eigrp interfaces Field Descriptions	
Field	Description
Interface	Interface over which EIGRP is configured.
Peers	Number of directly connected EIGRP neighbors.
Xmit Queue Un/Reliable	Number of packets remaining in the Unreliable and Reliable transmit queues.
Mean SRTT	Mean smooth round-trip time (SRTT) interval (in seconds).
Pacing Time Un/Reliable	Pacing time used to determine when EIGRP packets should be sent out the interface (unreliable and reliable packets).
Multicast Flow Timer	Maximum number of seconds in which the router will send multicast EIGRP packets.
Pending Routes	Number of routes in the packets in the transmit queue waiting to be sent.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps5207/products_command_reference_chapter09186a00801a80

QUESTION 140:

What is NOT a BGP attribute?

- A. Origin
- B. Weight
- C. Local_pref
- D. Community
- E. Cluster_list

Answer: E

Reference:http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/bgp.htm

QUESTION 141:

Which BGP attribute are "well known"?

- A. Next-hop
- B. Aggregator
- C. AS-path
- D. Atomic-aggregate
- E. MED

Answer: A, C, E

Reference: http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/bgp.htm

QUESTION 142:

With which two Cisco IOS Firewall security features is the authentication proxy compatible? (Choose two)

- A. Cisco router
- B. NAT
- C. PAT
- D. CBAC
- E. RADIUS
- F. TACACS+

Answer: B, D

QUESTION 143:

What does a half-open TCP session on the Cisco IOS Firewall mean?

- A. Session was denied.
- B. Firewall detected return traffic.
- C. Session has not reached the established state.
- D. Three-way handshake has been completed.

Answer: C

QUESTION 144:

What does CBAC on the Cisco IOS Firewall do with the application-layer protocol session information it gets from TCP and UDP packets?

- A. Creates temporary openings in the firewall's ACLs to allow return traffic and additional data connections for permissible sessions.
- B. Provides additional visibility at intranet, extranet, and Internet perimeters.
- C. Protects the network from internal and external attacks and threats.
- D. Creates specific security policies for each user.

Answer: A

QUESTION 145:

How many VLANs can a single RSM support?

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

Answer: C

Explanation:

The RSM supports interVLAN routing for up to 256 VLANs.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps679/products_configuration_guide_chapter09186a008007e8

QUESTION 146:

You enter the set ip route command to configure a default route in which platform?

- A. Catalyst 2900XL
- B. Catalyst 3500XL
- C. Catalyst 5000
- D. Catalyst 12000

Answer: C

Explanation:

The switch sends all off-network IP traffic to the primary default gateway. If connectivity to the primary gateway is lost, the switch attempts to use the backup gateways in the order they were configured. The switch sends periodic ping messages to determine whether each default gateway is up or down. If connectivity to the primary gateway is restored, the switch resumes sending traffic to the primary.

To specify one or more default gateways, perform this task in privileged mode:

	Task	Command
Step1	Configure a default IP gateway address for the switch.	set ip route default gateway [metric] [primary]
Step2	(Optional) Configure additional default gateways for the switch.	set ip route default gateway [metric] [primary]
Step3	Verify that the default gateways appear correctly	show ip route

	in the IP routing table.	
--	--------------------------	--

This example shows how to configure three default gateways on the switch and how to verify the default gateway configuration:

```
Console> (enable) set ip route default 10.1.1.10
```

```
Route added.
```

```
Console> (enable) set ip route default 10.1.1.20
```

```
Route added.
```

```
Console> (enable) set ip route default 10.1.1.1 primary
```

```
Route added.
```

```
Console> (enable)
```

```
Console> (enable) show ip route
```

```
Fragmentation Redirect Unreachable
```

```
-----  
enabled enabled enabled
```

```
The primary gateway: 10.1.1.1
```

```
Destination Gateway RouteMask Flags Use Interface
```

```
-----  
default 10.1.1.1 0x0 UG 6 sc0
```

```
default 10.1.1.20 0x0 G 0 sc0
```

```
default 10.1.1.10 0x0 G 0 sc0
```

```
10.0.0.0 10.1.1.100 0xff000000 U 75 sc0
```

```
default default 0xff000000 UH 0 sl0
```

```
Console> (enable)
```

```
Reference:
```

```
http://www.cisco.com/en/US/products/hw/switches/ps679/products\_configuration\_guide\_chapter09186a008007f7b
```

QUESTION 147:

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:

You can configure a port with any one of these modes for each protocol group: on, off, or auto. If the configuration is set to on, the port receives all the flood traffic for that protocol. If the configuration is set to off, the port does not receive any flood traffic for that protocol.

If the configuration is set to auto, a port becomes a member of the protocol group only after the device connected to the port transmits packets of the specific protocol group. The switch detects the traffic, adds the

port to the protocol group, and begins forwarding flood traffic for that protocol group to that port.

Autoconfigured ports are removed from the protocol group if the attached device does not transmit packets for that protocol within 60 minutes. Ports are also removed from the protocol group when the supervisor engine detects that the link is down on the port.

The Port Aggregation Protocol (PAgP) facilitates the automatic creation of EtherChannels by exchanging packets between Ethernet ports. PAgP packets are exchanged only between ports in auto and desirable modes. Ports configured in on or off mode do not exchange PAgP packets. The protocol learns the capabilities of port groups dynamically and informs the other ports. After PAgP identifies correctly matched EtherChannel links, it groups the ports into an EtherChannel. The EtherChannel is then added to the spanning tree as a single bridge port.

EtherChannel includes four user-configurable modes: on, off, auto, and desirable. Only auto and desirable are PAgP modes. You can modify the auto and desirable modes with the silent and non-silent keywords. By default, ports are in auto silent mode.

Table6-1 describes EtherChannel modes.

Table6-1 EtherChannel Modes	
Mode	Description
on	Mode that forces the port to channel without PAgP. With the on mode, a usable EtherChannel exists only when a port group in on mode is connected to another port group in on mode.
off	Mode that prevents the port from channeling.
auto	PAgP mode that places a port into a passive negotiating state, in which the port responds to PAgP packets it receives but does not initiate PAgP packet negotiation. (Default)
desirable	PAgP mode that places a port into an active negotiating state, in which the port initiates negotiations with other ports by sending PAgP packets.
silent	Keyword that is used with the auto or desirable mode when no traffic is expected from the other device to prevent the link from being reported to the Spanning Tree Protocol as down.

	(Default)
non-silent	Keyword that is used with the auto or desirable mode when traffic is expected from the other device.

Both the auto and desirable modes allow ports to negotiate with connected ports to determine if they can form an EtherChannel, based on criteria such as port speed, trunking state, and VLAN numbers.

Ports can form an EtherChannel when they are in different PAgP modes as long as the modes are compatible: A port in desirable mode can form an EtherChannel successfully with another port that is in desirable or auto mode.

A port in auto mode can form an EtherChannel with another port in desirable mode.

A port in auto mode cannot form an EtherChannel with another port that is also in auto mode, because neither port will initiate negotiation.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps708/products_configuration_guide_chapter09186a008007fb

QUESTION 148:

You must configure an Ethernet trunk between two Cisco switches.

Which three statements about the trunk link are true? (Choose three)

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

Answer: A, B, C

Explanation:

Trunks are used to carry traffic belonging to multiple VLANs between devices over the same link. A device can determine which VLAN the traffic belongs to by its VLAN identifier. The VLAN identifier is a tag that is encapsulated with the data. ISL and 802.1q are two types of encapsulations used to carry data from multiple VLANs over trunk links.

ISL is a Cisco proprietary protocol for interconnecting multiple switches and maintaining VLAN information as traffic goes between switches. ISL provides VLAN trunking capabilities while maintaining full wire speed performance on Ethernet links in full-duplex or half-duplex mode. ISL operates in a point-to-point environment and will support up to 1000 VLANs. In ISL, the original frame is encapsulated and an additional header is added before the frame is carried over a trunk link. At the receiving end, the header is removed and the frame is forwarded to the assigned VLAN. ISL uses Per VLAN Spanning Tree (PVST) which runs one instance of Spanning Tree Protocol (STP) per VLAN. PVST allows to optimize root switch placement for each VLAN and supports load balancing of VLANs over multiple trunk links.

802.1Q is the IEEE standard for tagging frames on a trunk and supports upto 4096 VLANs.

In 802.1Q, the trunking device inserts a four-byte tag into the original frame and recomputes the Frame Check Sequence (FCS) before sending the frame over the trunk link. At the receiving end, the tag is removed and the frame is forwarded to the assigned VLAN. 802.1Q does not tag frames on the native VLAN. It tags all other frames transmitted and received on the trunk. While configuring 802.1 trunk, you must make sure that the same native VLAN is configured on both sides of the trunk. IEEE 802.1Q defines a single instance of spanning tree running on the native VLAN for all the VLANs in the network which is called Mono Spanning Tree (MST). This lacks the flexibility and load balancing capability of PVST available with ISL. However, PVST+ offers the capability to retain multiple Spanning Tree topologies with 802.1Q trunking.

Reference:

http://www.cisco.com/en/US/tech/CK389/CK390/technologies_tech_note09186a0080094665.shtml

QUESTION 149:

Which command do you use to check the trunking mode on Catalyst 3500XL switches?

- A. show trunk
- B. show vtp mode
- C. show interface
- D. show interface switchport

Answer: D

QUESTION 150:

What are two functions of VTP? (Choose two)

- A. It propagates global VLAN information.
- B. It maps mixed-media to Ethernet VLANs.
- C. It sets trunk priority levels of adjacent switches.
- D. It adjusts VLAN interswitch links for parallel load sharing.
- E. It maps the noncontiguous switch fabric across the global VLAN.

Answer: A, B

QUESTION 151:

You are configuring a VLAN trunk on Fast Ethernet.

Which two trunking modes negotiate correctly when bringing up a trunk link? (Choose two)

- A. Off
- B. Auto
- C. Negotiate
- D. Desirable
- E. Nonnegotiate

Answer: B, D

QUESTION 152:

What are two methods to maintain a consistent VLAN database in a VTP domain? (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

QUESTION 153:

Which three actions configure multilayer switching on the multilayer switching route processor? (Choose 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. Configuring the MLS management interface

Answer: A, D, E

QUESTION 154:

Type the MLS-SE command used on the Catalyst 5000 that displays the contents of the MLS cache. (Do not use abbreviated syntax)

Answer: show mls entry

Explanation:

showmlsentry

Use the show mls entry command to display IP and IPX MLS cache entries.

showmls entry [ip] [qos] [rp ip_addr] [destination ip_addr_spec] [source ip_addr_spec] [flow protocol src_port dst_port]

show mls entry [ipx] [rp ip_addr] [destination ipx_addr_spec] [source ipx_addr_spec]

Syntax Description

ip	(Optional) Keyword that specifies to display IP MLS cache entries.
qos	(Optional) Keyword that specifies QoS entries.
rp	(Optional) Keyword that specifies the MLS-RP.

ip_addr	(Optional) IP address or host name of the MLS-RP.
destination	(Optional) Keyword that specifies the destination IP address.
ip_addr_spec	(Optional) Full IP address or a subnet address.
source	(Optional) Keyword that specifies the source IP address.
flow	(Optional) Keyword that specifies additional flow information (protocol family and protocol port pair) to be matched.
protocol	(Optional) Protocol family; valid values include tcp, udp, icmp, or a decimal number for other protocol families.
src_port	(Optional) Source protocol port.
dst_port	(Optional) Destination protocol port.
ipx	(Optional) Keyword that specifies to display IPX MLS cache entries.
ipx_addr_spec	(Optional) Full IPX address or a network address.

Defaults

The default displays all IP and IPX MLS cache entries.

Reference:

http://www.cisco.com/univercd/cc/td/doc/product/lan/cat5000/rel_5_5/cmd_ref/sh_ml_n.htm#13066

QUESTION 155:

What does an MLS-SE do when it receives an MLSP hello message?

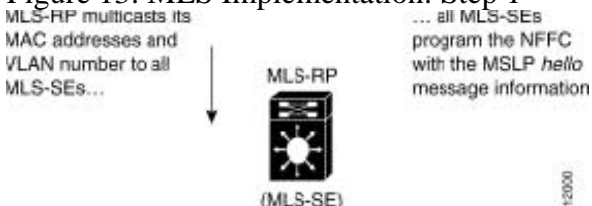
- A. Responds with another MLSP hello message.
- B. Forwards it based on its multicast configuration.
- C. Records the MAC addresses and VLAN IDs in its CAM table.
- D. Discards it because MLSP messages are intended for MLS-RPs.

Answer: C

Explanation:

Step1 The MLSP informs the Catalyst 5000 series switch of the MLS-RP MAC addresses used on different VLANs and the MLS-RP's routing and access-list changes. Through this protocol, the MLS-RP multicasts its MAC and VLAN information to all MLS-SEs. When the MLS-SE hears the MLSP hello message indicating an MLS initialization, the MLS-SE is programmed with the MLS-RP MAC address and its associated VLAN number (see Figure 13).

Figure 13: MLS Implementation: Step 1



Step2 In Figure 14, host A and host B are located on different VLANs. Host A initiates a data transfer to host B. When host A sends the first packet to the MLS-RP, the MLS-SE recognizes this packet as a candidate packet for Layer 3 switching because the MLS-SE has learned the MLS-RP's destination MAC address and VLAN through MLSP. The MLS-SE learns the Layer 3 flow information (such as the destination address, source address, and protocol port numbers), and forwards the first packet to the MLS-RP. A partial MLS entry for this Layer 3 flow is created in the MLS cache.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_chapter09186a00800ca6

QUESTION 156:

Which statement about multilayer switching is true?

- A. All Layer 3 routing logic is executed in ASICs on the switch.
- B. The MLS switch software is enhanced to take over all functions of the router.
- C. The switch caches the ARP table, routing table, and access lists with frequent updates from the router.
- D. The MLS switch compares incoming packets with cached Layer 3 information and forwards it to the appropriate port.

Answer: D

Explanation:

Introduction to Multilayer Switching

Layer 3 protocols, such as IP and Internetwork Packet Exchange (IPX), are connectionless---they deliver each packet independently of each other. However, actual 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. Communication from a client to a server and from the server to the client are separate flows. For example, Hypertext Transfer Protocol (HTTP) Web packets from a particular source to a particular destination are a separate flow from File Transfer Protocol (FTP) file transfer packets between the same pair of hosts.

Flows can be based on only Layer 3 addresses. This feature allows IP traffic from multiple users or applications to a particular destination to be carried on a single flow if only the destination IP address is used to identify a flow.

The NFFC maintains a Layer 3 switching table (MLS cache) for the Layer 3-switched flows. The cache also includes entries for traffic statistics that are updated in tandem with the switching of packets. After the MLS cache is created, packets identified as belonging to an existing flow, can be Layer 3-switched based on the cached information. The MLS cache maintains flow information for all active flows. When the Layer 3-switching entry for a flow ages out, the flow statistics can be exported to a flow collector application.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_chapter09186a00800ca6

QUESTION 157:

What is the default aging time for MLS cache entries for which a flow is established?

- A. 3 seconds
- B. 64 seconds
- C. 128 seconds
- D. 256 seconds
- E. 300 seconds

Answer: D

Explanation:

!--- By default, MLS is enabled on the switch. Multilayer switching aging time = 256 seconds
Multilayer switching fast aging time = 0 seconds, packet threshold = 0
Current flow mask is Destination flow
Configured flow mask is Destination flow
Total packets switched = 8

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps708/products_configuration_example09186a00800ab513.sht

QUESTION 158:

Which router command shows the configuration of Fair Queuing?

- A. show queue
- B. show fair-queue
- C. show queue config
- D. show running-config

Answer: D

QUESTION 159:

Which queuing method dynamically provides fair bandwidth allocation to all network traffic?

- A. FIFO
- B. WFQ
- C. Priority
- D. Custom

Answer: B

Explanation:

Weighted fair queueing (WFQ) and Distributed WFQ (DWFQ)--Segregates traffic into flows and then schedules traffic onto the outputs to meet specified bandwidth allocation or delay bounds.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800ca6

QUESTION 160:

Which command displays the number of members in a bundle and the bundle to which a link belongs?

- A. show multilink
- B. show ppp status
- C. show mlppp status
- D. show ppp multilink
- E. show ppp negotiation

Answer: D

Explanation:

show ppp multilink

To display bundle information for the Multilink PPP bundles, use the show ppp multilink command in EXEC mode.

Command History

Release	Modification
11.2	This command was introduced.

Examples

The following is the output when no bundles are on a system:

Router# show ppp multilinkNo active bundlesThe following is the output when a single Multilink PPP bundle (named rudder) is on a system:

Router# show ppp multilinkBundle rudder, 3 members, first link is BRI0: B-channel 10 lost fragments, 8 reordered, 0 unassigned, sequence

0x1E/0x1E rcvd/sentThe following is the output when two active bundles are on a system. Subsequent bundles would be displayed below the previous bundle.

Router# show ppp multilinkBundle rudder, 3 members, first link is BRI0: B-Channel 1 0 lost fragments, 8 reordered, 0 unassigned,

sequence 0x1E/0x1E rcvd/sentBundle dallas, 4 members, first link is BRI2: B-Channel 1 0 lost fragments, 28 reordered, 0 unassigned, sequence

0x12E/0x12E rcvd/sent

The following example shows output when a stack group has been created. On stack group member systema, Multilink PPP bundle hansolo has bundle interface Virtual-Access4. Two child interfaces are joined to this bundle interface. The first is a local PRI channel (serial 0:4), and the second is an interface from stack group member systemb.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_command_reference_chapter09186a00

QUESTION 161:

Which two statements about Multilink PPP are true? (Choose two)

- A. MLP is most effective with ISDN.
- B. MLP splits packets and sends fragments over multiple links.
- C. Timing is critical because MLP does not support sequencing.
- D. MLP uses a round-robin algorithm to send unfragmented individual packets across multiple lines.

Answer: A, B

Explanation:

Multilink PPP (MLPPP) is a method of splitting, recombining, and sequencing datagrams across multiple logical data links.

MLP support for interleaving can be configured on virtual templates, dialer interfaces, and ISDN BRI or PRI interfaces. To configure interleaving, perform the following steps:

Step 1

Configure the dialer interface, BRI interface, PRI interface, or virtual interface template, as defined in the relevant Cisco IOS documents.

Step 2

Configure MLP and interleaving on the interface or template.

Reference:

http://www.cisco.com/en/US/tech/CK543/CK762/CK763/tech_protocol_home.html

http://www.cisco.com/en/US/products/sw/iosswrel/ps1835/products_configuration_guide_chapter09186a00800b75d2.html

QUESTION 162:

BGP synchronization means:

- A. A BGP router can only advertise an eBGP-learned route if the route is in the BGP table with a metric of 0.
- B. A BGP router can only advertise an eBGP-learned route if the route is in the routing table as an IGP route.
- C. A BGP router can only advertise an iBGP-learned route if the route is in the routing table of all its iBGP neighbors.
- D. A BGP router can only advertise an iBGP-learned route if the route is in the BGP table but not in the routing table.
- E. A BGP router can only advertise an iBGP-learned route if the route is in the routing table as an IGP route.

Answer: E

Explanation:

A BGP router with synchronization enabled will not advertise iBGP-learned routes to other eBGP peers if it is not able to validate those

routes in its IGP. Assuming that IGP has a route to iBGP-learned routes, the router will announce the iBGP routes to eBGP peers.

Otherwise the router treats the route as not being synchronized with IGP and does not advertise it. Disabling synchronization using the

no synchronization command under router BGP prevents BGP from validating iBGP routes in IGP.

Reference:

http://www.cisco.com/en/US/tech/ CK3 65/ CK8 0/technologies_tech_note09186a00800945ff.shtml

QUESTION 163:

Indicating with (1) MED, (2) local-preference, (3) AS-path, (4) weight and (5) origin-code, what is the correct chronological order of the previous five tiebreakers used by BGP during its own best route selection's process?

- A. 1,2,3,4,5
- B. 4,1,2,5,3
- C. 4,2,3,5,1
- D. 4,3,1,5,2
- E. 1,4,3,2,5

Answer: C

QUESTION 164:

Where are access profiles stored with the authentication proxy features of the Cisco IOS Firewall?

- A. PIX Firewall
- B. Cisco router
- C. Cisco VPN Concentrator
- D. Cisco Secure ACS authentication server

Answer: D

QUESTION 165:

Which three thresholds does CBAC on the Cisco IOS Firewall provide against DoS attacks? (Choose three)

- A. Member of half-open session based upon time.
- B. Total number of half-open TCP or UDP sessions.
- C. Number of fully open sessions based upon time.
- D. Number of half-open TCP-only sessions per host.
- E. Total number of fully open TCP or UDP sessions.
- F. Number of fully open TCP-only sessions per host.

Answer: A, B, D

QUESTION 166:

What does CBAC on the Cisco IOS Firewall do?

- A. Creates specific security policies for each user.
- B. Provides secure, per-application access control access network perimeters.
- C. Provides additional visibility at intranet, extranet, and Internet perimeters.
- D. Protects the network from internal attacks and threats.

Answer: B

Explanation:

Neither Cisco's PIX Firewall, nor the Context-Based Access Control (CBAC) feature of Cisco's IOS Firewall Feature Set, protects hosts against certain denial of service attacks involving fragmented IP packets. This vulnerability does not permit network "breakins". The vulnerability is most severe in configurations involving static Network Address Translation (NAT) entries, or in configurations not involving any use of NAT. The vulnerability is present in Cisco PIX Firewall software up to and including version 4.2(1), and in CBAC versions of Cisco IOS software through 11.2P and 11.3T, and will be present in initial 12.0 revisions of CBAC software.

Stateless packet filtering products, such as the extended access lists available in non-CBAC versions of Cisco IOS software, share the vulnerability because of the inherent limitations of stateless operation. This it is not considered a defect in stateless filtering. More information is in the section on "Stateless Packet Filters" in this document.

This vulnerability will be fixed in Cisco PIX Firewall software version 4.2(2), which is tentatively scheduled for release on or after September 16, 1998. The vulnerability is scheduled to be fixed for CBAC in Cisco IOS software release 12.0(2) and 12.0(3)T, which are tentatively scheduled for release in late November 1998, and in late January 1999, respectively. All schedules are subject to change.

The possibility of IP fragmentation attacks against packet filters, from Cisco and other vendors, has been widely known for a very long time. However, exploitation does not seem to be increasing. Therefore, Cisco does not believe that the majority of its customers are critically exposed by this vulnerability. Cisco is, however, prepared to support any customers who suffer actual attacks, or who have specific reason to think that they are likely to be attacked in this way.

Reference:

http://www.cisco.com/en/US/products/products_security_advisory09186a008011e78d.shtml

QUESTION 167:

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:

If you are using the Cisco IOS command-line interface, use the ip default-gateway [ip_address] command. If you are using Switch Manager, select IP at the Main Menu. You can configure the default gateway on the IP

Management screen.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps607/products_tech_note09186a00800a6923.shtml

QUESTION 168:

You must configure an Ethernet trunk to operate in ISL mode between two Cisco switches. Which two are required at each end of the link for the trunk to operate correctly? (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

QUESTION 169:

How do you specify the trunking encapsulation mode for a port on a Catalyst 5000 switch?

- A. set trunk
- B. set vtp mode
- C. set port mode
- D. set encapsulation

Answer: A

Explanation:

set trunk

Use the set trunk command to configure trunk ports and to add VLANs to the allowed VLAN list for existing trunks.

set trunk mod/port {on | off | desirable | auto | nonegotiate}[vlands] [isl | dot1q | negotiate]

Syntax Description

mod/port	Number of the module and the port on the module.
on	Keyword to force the port to become a trunk port and persuade the neighboring port to become a trunk port. The port becomes a trunk port even if the neighboring port does not agree to become a trunk.
off	Keyword to force the port to become a nontrunk port and persuade the neighboring port to become a nontrunk port. The port becomes a nontrunk port even if the neighboring port does not agree to become a nontrunk port.

desirable	Keyword to cause the port to negotiate actively with the neighboring port to become a trunk link.
auto	Keyword to cause the port to become a trunk port if the neighboring port tries to negotiate a trunk link. This is the default mode for Ether Channel ports.
nonegotiate	Keyword to force the port to become a trunk port but prevent it from sending DTP frames to its neighbor.
isl	(Optional) Keyword to specify an ISL trunk on a Fast or Gigabit Ethernet port.
dot1q	(Optional) Keyword to specify an IEEE 802.1Q trunk on a Fast or Gigabit Ethernet port.
negotiate	(Optional) Keyword to specify that the port become an ISL (preferred) or 802.1Q trunk, depending on the configuration and capabilities of the neighboring port.
vlan	(Optional) VLANs to add to the list of allowed VLANs on the trunk; valid values are from 1 to 1000 and 1025 to 4094.

Defaults

The default port mode is 802.1Q-Native.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps708/products_command_reference_chapter09186a00802dec22.html

QUESTION 170:

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

QUESTION 171:

Which two events happen when deleting a VLAN from a switch? (Choose two)

- A. The configuration changes are immediately loaded to NVRAM.
- B. The ports associated to the deleted VLAN remain in that VLAN until it is reset.
- C. The ports associated to that VLAN remain inactive until it is assigned to another VLAN.
- D. Switches in different VTP domains are notified of the changes and their databases are modified.

Answer: A, C

QUESTION 172:

Which action disables multilayer switching?

- A. Enabling IP security
- B. Clearing the MLS cache
- C. Configuring an output access list.
- D. Disabling TCP header compression

Answer: A

Explanation:

Restrictions on Using IP Router Commands with IP MLS Enabled

Enabling certain IP processes on an interface will affect IP MLS on the interface. Table 3-2 shows the affected commands and the resulting behavior.

Table3-2 IP Router Command Restrictions

Command	Behavior
clear ip route	Clears all MLS cache entries for all switches performing Layer 3 switching for this MSFC.
ip routing	The no form purges all MLS cache entries and disables IP MLS on this MSFC.
ip security (all forms of this command)	Disables IP MLS on the interface.
ip tcp compression-connections	Disables IP MLS on the interface.
ip tcp header-compression	Disables IP MLS on the interface.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps700/products_command_reference_chapter09186a008007f2a8.html

QUESTION 173:

On a Catalyst 5000, what is the purpose of the show mls entry command?

- A. Displays the contents of the MLS cache.
- B. Shows the routing table for the MLS-RP.
- C. Shows the total number of packets switched.
- D. Displays all known MLS-RP and associated information.

Answer: A

Explanation:

show mls entry

Use the show mls entry command set to display state information in the MLS-based Catalyst6000 family switches.

show mls entry [mod] [short | long]

show mls entry ip [mod] [destination ip_addr_spec] [source ip_addr_spec]
[protocol protocol] [src-port src_port] [dst-port dst_port] [short | long]

show mls entry ipx [mod] [destination ipx_addr_spec] [short | long]

show mls entry qos

Syntax Description

mod	(Optional) MSFC module number; valid values are 15 or 16.
short	(Optional) Keyword to display the output with carriage returns.
long	(Optional) Keyword to display the output on one line.
ip	Keyword to specify IP MLS.
destination	(Optional) Keyword to specify the destination IP or IPX address.
ip_addr_spec	(Optional) Full IP address or a subnet address.
source	(Optional) Keyword to specify the source IP or IPX address.
protocol	(Optional) Keyword to specify the protocol type.
protocol	(Optional) Protocol type; valid values can be tcp, udp, icmp, or a decimal number for other protocol families. 0 indicates "do not care."
src-portsrc_port	(Optional) Keyword and variable to specify the number of the TCP/UDP source port (decimal). Used with dst-port to specify the port pair if the protocol is tcp or udp. 0 indicates "do not care."
dst-portdst_port	(Optional) Keyword and variable to specify the number of the TCP/UDP destination port (decimal). Used with src-port to specify the port pair if the protocol is tcp or udp. 0 indicates "do not care."
ipx	Keyword to specify IPX MLS.

ipx_addr_spec	(Optional) Full IPX address or a subnet address.
qos	Keyword to specify QoS.

Reference:

http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/sft_6_1/cmd_ref/sh_ml_n.htm#23985

QUESTION 174:

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:

The Layer 3 entries programmed by the failed MSFC on the active supervisor engine are used until they are gracefully aged out and replaced by the Layer 3 entries populated by the newly active MSFC. This graceful aging occurs over a four-minute period, and allows the newly active MSFC to repopulate the MLS entries using its XTAG value, while concurrently hardware-switching flows yet to be aged. In addition, this process prevents a newly active MSFC from being overwhelmed with initial flow traffic.

Note Each MSFC 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:

http://www.cisco.com/en/US/products/hw/switches/ps700/products_command_reference_chapter09186a00800eb2

QUESTION 175:

Which multilayer switching concept determines how entries are created in the MLS cache?

- A. HSRP
- B. XTAGs
- C. Trunking
- D. Flow masks
- E. Tag switching

Answer: D

Explanation:

Layer3 MMLS Cache

The PFC maintains the Layer3 MLS cache to identify individual IP multicast flows. Each entry is of the form {source IP, destination group IP, source VLAN}. The maximum Multilayer Switching (MLS) cache size is

128K entries and is shared by all MLS processes on the switch (such as IP unicast MLS and IPX MLS). However, a cache exceeding 32K entries increases the probability that a flow will not be switched by the PFC and will get forwarded to the Catalyst6000 family switch.

The PFC populates the MLS cache using information learned from the routers participating in IPMLS.

Whenever the switch receives traffic for a new flow, it updates its multicast routing table and forwards the new information to the PFC. In addition, if an entry in the multicast routing table ages out, the switch deletes the entry and forwards the updated information to the PFC.

The MLS cache contains flow information for all active multilayer-switched flows. After the MLS cache is populated, multicast packets identified as belonging to an existing flow can be Layer3 switched based on the cache entry for that flow. For each cache entry, the PFC maintains a list of outgoing interfaces for the destination IP multicast group. The PFC uses this list to determine on which VLANs traffic to a given multicast flow should be replicated.

IP MMLS Flow Mask

IP MMLS supports a single flow mask, source-destination-vlan. The PFC maintains one MMLS cache entry for each {source IP, destination group IP, source VLAN}. The multicast source-destination-vlan flow mask differs from the IP unicast MLS source-destination-ip flow mask in that, for IP MMLS, the source VLAN is included as part of the entry. The source VLAN is the multicast RPF interface for the multicast flow. Flows are based on the IP address of the source device, the destination IP multicast group address, and the source VLAN.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps700/products_configuration_guide_chapter09186a008007f65

QUESTION 176:

Which three tasks should you perform when configuring Custom Queuing on a router? (Choose three)

- A. Set custom queue filtering for an interface.
- B. Configure the service threshold per queue.
- C. Assign the custom queue list to an interface.
- D. Globally enable custom queuing on the router.

Answer: A, B, C

Explanation:

CQ handles traffic by specifying the number of packets or bytes to be serviced for each class of traffic. It services the queues by cycling through them in round-robin fashion, sending the portion of allocated bandwidth for each queue before moving to the next queue. If one queue is empty, the router will send packets from the next queue that has packets ready to send.

When CQ is enabled on an interface, the system maintains 17 output queues for that interface. You can specify queues 1 through 16. Associated with each output queue is a configurable byte count, which specifies how many bytes of data the system should deliver from the current queue before it moves on to the next queue. Queue number 0 is a system queue; it is emptied before any of the queues numbered 1 through 16 are

processed. The system queues high priority packets, such as keep alive packets and signaling packets, to this queue. Other traffic cannot be configured to use this queue.

For queue numbers 1 through 16, the system cycles through the queues sequentially (in a round-robin fashion), dequeuing the configured byte count from each queue in each cycle, delivering packets in the current queue before moving on to the next one. When a particular queue is being processed, packets are sent until the number of bytes sent exceeds the queue byte count or the queue is empty. Bandwidth used by a particular queue can only be indirectly specified in terms of byte count and queue length.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_chapter09186a00800ca5

QUESTION 177:

Which IOS queuing method ensures that certain protocols are transmitted before others?

- A. FIFO
- B. Priority
- C. Custom
- D. Weighted Fair

Answer: B

Explanation:

How Packets Are Classified for Priority Queueing

A priority list is a set of rules that describe how packets should be assigned to priority queues. A priority list might also describe a default priority or the queue size limits of the various priority queues.

Packets can be classified by the following:

1. Protocol or subprotocol type
2. Incoming interface
3. Packet size
4. Fragments
5. Access list

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_chapter09186a00800ca5

QUESTION 178:

Which two statements are true about Multilink PPP? (Choose two)

- A. It uses packet sequence and load calculation.
- B. It has multi-vendor interoperability, as specified by RFC 1990.
- C. It implements an indexing system that predicts character sequences.
- D. It compresses the 20 byte IP header to a 2 or 4 byte header to reduce overhead.

Answer: A, B

QUESTION 179:

The BGP backdoor command:

- A. Changes the distance of an iBGP route to 20.
- B. Changes the distance of an eBGP route to 200.
- C. Changes the distance of an IGP route to 200.
- D. Changes the distance of an IGP route to 20.
- E. Does not change the distance of the route.

Answer: B

Explanation:

A backdoor network is assigned an administrative distance of 200. The objective is to make Interior Gateway Protocol (IGP) learned routes preferred. A backdoor network is treated as a local network, except that it is not advertised. A network that is marked as a back door is not sourced by the local router, but should be learned from external neighbors. The BGP best path selection algorithm does not change when a network is configured as a back door.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps5187/products_command_reference_chapter09186a008017d

QUESTION 180:

What triggers the authentication proxy on the Cisco IOS Firewall?

- A. User initiates inbound interface.
- B. User initiated login through the firewall.
- C. User initiates an FTP session through the firewall.
- D. User initiates an HTTP session through the firewall.

Answer: D

QUESTION 181:

What is the default for the length of time, in seconds, a DNS name lookup session will still be managed after no activity is registered on the Cisco IOS Firewall?

- A. 5
- B. 30
- C. 60
- D. 3,600

Answer: A

QUESTION 182:

Which device allows communication between VLANs?

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

Answer: B

Explanation:

In switched networks, routers perform broadcast management, route processing and distribution, and provide communications between VLANs. Routers provide VLAN access to shared resources and connect to other parts of the network that are either logically segmented with the more traditional subnet approach or require access to remote sites across wide-area links.

Reference:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios113ed/113ed_cr/switch_c/xcvlan.htm

QUESTION 183:

Which queuing method dynamically provides fair bandwidth allocation to all network traffic?

- A. FIFO
- B. WFQ
- C. Priority
- D. Custom

Answer: B

Explanation:

Flow-based weighted fair queuing (WFQ) controls the ratio of transmission bandwidth allocation among different traffic flows during periods of congestion. Class-based WFQ allocates transmission bandwidth among different traffic flows or QoS groups during periods of congestion.

Reference:

<http://www.cisco.com/univercd/cc/td/doc/product/software/ios111/cc111/dwfq.htm>

QUESTION 184:

How do you specify the trunking encapsulation for a port on a Catalyst 3500XL switch?

- 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:

switchporttrunk encapsulation

Use the switchport trunk encapsulation interface configuration command to set the encapsulation format on the trunk port. Use the no form of this command to reset the format to the default.

switchporttrunk encapsulation {isl|dot1q}

no switchport trunk encapsulation

Syntax Description

isl	Set the encapsulation format to Inter-Switch Link (ISL). The switch encapsulates all received and transmitted packets with an ISL header. The switch filters native frames received from an ISL trunk port.
dot1q	Set the tagging format to IEEE 802.1Q. With this format, the switch supports simultaneous tagged and untagged traffic on a port.

Defaults

The default encapsulation format is ISL.

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps637/products_command_reference_chapter09186a008007ed10.htm

QUESTION 185:

Which link is capable of transporting more than one VLAN through a single switch port?

- A. Ethernet
- B. 802.1d trunk
- C. 802.1q trunk
- D. multispan link

Answer: C

Explanation:

The 802.1Q specification establishes a standard method for inserting VLAN membership information into Ethernet frames.

In a LAN, data link-layer broadcast and multicast traffic is delivered to all end stations, but this traffic cannot go beyond the LAN

boundary. In the past, shared cabling or hubs were the boundaries for LANs. Because network protocols typically rely on broadcast queries to let end stations discover one another, devices on two LANs cannot "see" each other without the help of a network-layer device with ports in both LANs, such as a router. The fact that broadcasts are distributed to all devices in a LAN means LANs cannot become very large. If they do, devices become overburdened with broadcast traffic. The ability of devices in a LAN to discover each other also means servers housing sensitive data should be placed in a LAN separate from the average user, with router filters controlling access. These factors make it critical for network administrators to control LAN boundaries. A VLAN is an administratively configured LAN or broadcast domain. Instead of going to the wiring closet to move a cable to a different LAN, network administrators can accomplish this task remotely by configuring a port on an 802.1Q-compliant switch to belong to a different VLAN. The ability to move end stations to different broadcast domains by setting membership profiles for each port on centrally managed switches is one of the main advantages of 802.1Q VLANs. The switch acts as an intelligent traffic forwarder and a simple network security device. Frames get sent only to the ports where the destination device is attached. Broadcast and multicast frames are constrained by VLAN boundaries so only stations whose ports are members of the same VLAN see those frames. This way, bandwidth is optimized and network security is enhanced. 802.1Q VLANs aren't limited to one switch. VLANs can span many switches, even across WAN links. Sharing VLANs between switches is achieved by inserting a tag with a VLAN identifier (VID) between one and 4,094 into each frame. A VID must be assigned for each VLAN. By assigning the same VID to VLANs on many switches, one or more VLAN (broadcast domain) can be extended across a large network.

Reference:
http://www.xilinx.com/esp/networks_telecom/optical/net_tech/ieee8021q.htm

QUESTION 186:

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 trunk links in 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 name, 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:

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. You make global VLAN configuration changes for the domain using either the command-line interface (CLI) or Simple Network Management Protocol (SNMP).

By default, the Catalyst6000 family switch is in VTP server mode and is in the no-management domain state until the switch receives an advertisement for a domain over a trunk link or you configure a management domain.

If the switch receives a VTP advertisement over a trunk link, it inherits the management domain name and the VTP

configuration revision number. The switch ignores advertisements with a different management domain name or an

earlier configuration revision number.

If you configure the switch as VTP transparent, you can create and modify VLANs but the changes affect only the individual switch.

When you make a change to the VLAN configuration on a VTP server, the change is propagated to all network devices in the VTP

domain. VTP advertisements are transmitted out all trunk connections, including Inter-Switch Link (ISL), IEEE802.1Q, IEEE802.10, and

ATM LAN Emulation (LANE).

VTP maps VLANs dynamically across multiple LAN types with unique names and internal index associations.

Mapping eliminates

excessive device administration required from network administrators.

Reference:

http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/121_8aex/swconfig/vtp.htm

QUESTION 187:

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:

Displaying Entries for a Specific Source AddressTo display MLS entries for a specific source IP address, perform this task in privileged mode:

Task	Command
Show MLS entries for the specified source IP address.	show mls entry ip source [ip_addr]

This example shows how to display MLS entries for a specific source IP address:

Console> (enable) show mls entry ip source 10.0.2.15

Destination-IP Source-IP Prot DstPrt SrcPrt Destination-Mac Vlan

EDst ESrc DPort SPort Stat-Pkts Stat-Bytes Uptime Age

MSFC 172.20.25.1 (Module 15):

172.20.22.14 10.0.2.15 TCP Telnet 37819 00-e0-4f-15-49-ff 51

ARPA ARPA 5/39 5/40 115 5290 00:12:20 00:00:04

MSFC 172.20.27.1 (Module 16):

Total entries:1

Reference:

http://www.cisco.com/en/US/products/hw/switches/ps708/products_configuration_guide_chapter09186a00800eba

QUESTION 188:

Which three are primary components of the Cisco multilayer switching implementation? (Choose three)

- A. Multilayer Trunking Protocol
- B. Multilayer Switching Protocol
- C. Multilayer Switching Cache Engine
- D. Multilayer Switching Switch Engine
- E. Multilayer Switching Route Processor

Answer: B, D, E

Explanation:

The following terminology is used:

* Multilayer Switching-Switching Engine (MLS-SE)-A NetFlow Feature Card (NFFC)-equipped Catalyst 5000 series switch.

* Multilayer Switching-Route Processor (MLS-RP)-A Cisco router with MLS enabled.

* Multilayer Switching Protocol (MLSP)-The protocol running between the MLS-SE and MLS-RP to enable MLS.

Reference:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_configuration_guide_chapter09186a00800ca6

QUESTION 189:

Which three tasks should you perform when configuring Custom Queuing on a router? (Choose three)

- A. Assign a default custom queue.
- B. Set custom queue filtering for a protocol.
- C. Configure the service threshold per queue.
- D. Globally enable custom queuing on the router.

Answer: A, B, C

QUESTION 190:

Which two debugs should you use to find the cause of an unsuccessful PAP negotiation? (Choose two)

- A. debug ppp pap
- B. debug ppp negotiation
- C. debug authentication pap
- D. debug ppp authentication

Answer: B, D

QUESTION 191:

What is the best description for the command ppp authentication pap when configured on both the calling and called router?

- A. One-way authentication
- B. Two-way authentication
- C. One-way encrypted authentication
- D. Two-way encrypted authentication

Answer: B

QUESTION 192:

What is the function of the command bgp deterministic-med?

- A. It makes BGP compare MEDs between different ASs.
- B. It makes default metric count as the worst possible metric.
- C. It makes default metric count as the best possible metric.
- D. It records the entries by neighbor AS.
- E. It records the entries by MED.

Answer: D

QUESTION 193:

If not valid authentication entry exists in the authentication proxy, how does the proxy respond to the HTTP connection request?

- A. Prompting the user for a username.
- B. Prompting the user for a password.
- C. Prompting the user for a username and password.
- D. Sending an alert to the Cisco Secure ACS server.

Answer: C

QUESTION 194:

What does the authentication proxy feature of the Cisco IOS Firewall allow network administrators to do?

- A. Apply specific security policies on a per-user basis.
- B. Use a general policy applied across multiple users.
- C. Use a single security policy that is applied to an entire user group or subnet.
- D. Keep user profiles active even where there is no active traffic from the authenticated users.

Answer: A

QUESTION 195:

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

QUESTION 196:

Which trunking mode prevents DISL or DTP frame from being sent out of a trunk link?

- A. On
- B. Auto
- C. Desirable
- D. Nonegotiate

Answer: D

QUESTION 197:

Which command do you use to check the trunking mode on Catalyst 5000 switches?

- A. show port
- B. show trunk
- C. show vtp domain
- D. show encapsulation

Answer: B

QUESTION 198:

You have several VLAN trunks in Auto and Off modes.

You are entering a new port. You want the port to be in Permanent Trunking mode.

Which mode should you use?

- A. Off
- B. Auto
- C. Desirable
- D. Nonegotiate

Answer: D

QUESTION 199:

Which interface configuration command assigns a VLAN ID to a route processor interface?

- 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

QUESTION 200:

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

QUESTION 201:

The multilayer switching process is based on which concept?

- A. Switch once, route many
- B. Route once, switch many
- C. Route when you can, switch when you must
- D. Separate the functions of routing and switching

Answer: B

QUESTION 202:

Which router command configures Weighted Fair queuing on a router?

- A. router(config)# bandwidth 56
- B. router(config)# fair-queue 64
- C. router(config)# priority fair 8
- D. router(config-if)# fair-queue 128
- E. router(config-if)# priority fair 16

Answer: D

QUESTION 203:

Which IOS command specified the point at which additional B channels are added to the Multilink bundle?

- A. bandwidth
- B. ppp multilink
- C. demand threshold
- D. dialer load-threshold

Answer: D

QUESTION 204:

A company has 2 border routers running BGP to 2 different ISP's. They want to control which path inbound traffic takes without the use of communities.

What is the most important consideration?

- A. Metric
- B. MED
- C. AS-path prepending
- D. Weight

E. Local preference

Answer: C

QUESTION 205:

What happens in the aggressive mode of the CBAC on the Cisco IOS Firewall?

- A. CBAC deletes all half-open sessions.
- B. CBAC re-initiates half-open sessions.
- C. CBAC completed all half-open sessions, making them fully open sessions.
- D. CBAC deletes half-open sessions as required to accommodate new connection requests.

Answer: D

QUESTION 206:

You are configuring a VLAN interface on an internal route processor. You defined the VLAN interface. What should you do next?

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

Answer: D

QUESTION 207:

You are configuring a VLAN trunk over Fast Ethernet. Which trunking mode enables the port to become a trunk if the link partner requests it?

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

Answer: A

QUESTION 208:

You have changed the VTP domain on all your switches. You want to add an interface to the new VTP domain.

Which command should you use on your external route processor?

- A. set domain vtp

- B. mls rp vtp-domain
- C. set mls vtp-domain
- D. mls ext domain vtp

Answer: B

QUESTION 209:

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

QUESTION 210:

Which Catalyst 5000 command causes short-lived flows to age out of the MLS cache more quickly?

- A. ip mls agefast
- B. ip mls agingtime
- C. set mls aginingtime
- D. set mls agingtime fast

Answer: D

QUESTION 211:

For what three conditions are the traffic prioritization features in Cisco IOS best suited? (Choose three)

- A. Low-speed data links that have no congestion.
- B. Bursty WAN links experiencing only temporary congestion.
- C. A connection that has multiple protocols sharing a single data path.
- D. A Frame Relay connection that experiences utilization from 10 to 40%.
- E. A DDR connection that is always connected and runs at 70 to 100% utilization most of the day.

Answer: B, C, E

QUESTION 212:

Which events cause the EIGRP neighbor relationship to be restarted?

- A. Issuing the clear ip route command.
- B. Receiving an update packet with Init flag set from a known, already established neighbor relationship.

- C. Receiving an update packet from an unknown neighbor.
- D. Clearing the IP cache.
- E. Clearing the IP EIGRP neighbor relationship.

Answer: B, E

QUESTION 213:

What does authentication proxy on the Cisco IOS Firewall do?

- A. Creates specific authorization policies for each user with Cisco Secure ACS, dynamic, per-user security and authorization.
- B. Provides additional visibility at intranet, extranet, and Internet perimeters.
- C. Creates specific security policies for each user with Cisco Secure ACS, dynamic, per-user authentication and authorization.
- D. Provides secure, per-application access control across network perimeters.

Answer: C

QUESTION 214:

You must configure an Ethernet trunk to operate in 802.1Q mode between two Cisco switches. What can cause the trunk to operate incorrectly?

- A. An identical duplex at each end of the link.
- B. An identical speed at each end of the link.
- C. A different native VLAN parameter at each end of the link.
- D. A compatible trunking mode shared by the ports connecting the link at either end.

Answer: C

QUESTION 215:

You want to change VLAN information WITHOUT modifying other switches in the same VTP domain. To which mode should VTP be set?

- A. Client
- B. Local
- C. Server
- D. Transparent

Answer: D

QUESTION 216:

Which three are contained in MLS-RP advertisements? (Choose three)

- A. Topology changes
- B. ARP cache changes
- C. Access list information
- D. Route additions and deletions
- E. The MAC addresses used by the MLS-RP interfaces

Answer: C, D, E

QUESTION 217:

Which IP multicast addresses does OSPF use?

- A. 224.0.0.1 and 224.0.0.2
- B. 224.0.0.4 and 224.0.0.5
- C. 224.0.0.5 and 224.0.0.6
- D. 224.0.0.2 and 255.255.255.255
- E. 255.255.255.255

Answer: C

QUESTION 218:

Which command line should you use to configure a port as a trunk port on a Catalyst 3500XL switch?

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

Answer: D

QUESTION 219:

Which command enables multilayer switching globally on the MLS-RP?

- A. mls rp ip
- B. mls enable
- C. mls rp vtp-domain
- D. mls rp management-interface

Answer: A

QUESTION 220:

What is the result of applying an outgoing access list on an interface?

- A. It results in no action taken by the MLS-SE.
- B. It causes all incoming packets to be processed by the MLS-RP.
- C. It purges entries for flows on that interface and does not record new entries.
- D. It forces the MLS-SE to purge all MLS cache entries and to re-learn existing flows.

Answer: D

QUESTION 221:

Which command displays the number of successful and failed calls?

- A. show dialer
- B. show interface
- C. show isdn q931
- D. show isdn active call

Answer: A

QUESTION 222:

What does the Cisco IOS Firewall authentication proxy allow network administrators to do?

- A. Allow users to log into the network.
- B. Apply a general policy across multiple users.
- C. Apply specific security policies on a per-user basis.
- D. Apply a single security policy to an entire user group.

Answer: C

QUESTION 223:

How many VLANs can a single RSM support?

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

Answer: C

QUESTION 224:

When does the MLS-SE create a candidate MLS cache entry? (Choose two)

- A. When it receives a TCP SYN packet.
- B. When an MSL cache entry did not exist for the flow.

- C. When the frame was destined 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, C

QUESTION 225:

What type of EIGRP packets carry the Init flag embedded?

- A. Hello
- B. Update
- C. Query
- D. Reply
- E. Ack

Answer: B

QUESTION 226:

When used with the IOS Firewall, what does CBAC use for inspection rules to configure on per-application protocol basis?

- A. Alerts and audit trails
- B. ODBC filtering
- C. Tunnel, transport modes, or both
- D. Stateful failover

Answer: A

QUESTION 227:

Which two parameters are distributed by VTP advertisements? (Choose two)

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

Answer: B, D

QUESTION 228:

Which statement is true about VTPs and VLAN consistency?

- A. Routers assist in propagating VTP information to ensure consistency.

- B. A switch can reside in multiple VTP domains to ensure no duplication.
- C. A switch listens to VTP advertisements from its own domain and other domains.
- D. A switch listens to VTP advertisements from its own domain and ignores other domains.

Answer: D

QUESTION 229:

Which command removes certain VLANs from an existing trunk link?

- A. set vlan
- B. clear vtp
- C. clear port
- D. clear trunk

Answer: D

QUESTION 230:

You have just been given a large transport network to configure. No interface on the network is below DS-3. There are four OC-3 POS interfaces, two OC-12 POS interfaces, two OC-3 ATM, two DS-3s and one GigE required at each router location.

Which router can support this one chassis and get 10 routers in a 40 RU rack?

- A. Cisco 7200
- B. Cisco 7300
- C. Cisco 7400
- D. Cisco 7500

Answer: B

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QUESTION 231:

Which two routers support the use of Etherswitch modules and provide power to IP phones with the use of an external power supply? (Choose two)

- A. Cisco 2650
- B. Cisco 2691
- C. Cisco 3725
- D. Cisco 3745

Answer: A, B

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QUESTION 232:

Which feature of the EZ VPN Remote makes it desirable to have Proxy DNS server support for the PCs attached to the VPN?

- A. Client mode with connect auto.
- B. Client mode with connect manual.
- C. Network Extension mode with connect auto.
- D. Network Extension mode with connect manual.

Answer: B

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QUESTION 233:

The NAT/PAT translation and access-list configurations that are created by the CiscoEasy VPN Remote feature are not written to either the startup-configuration or running-configuration files.

Which two commands can you use to display these configurations? (Choose two)

- A. show access-lists
- B. show IP NAT Statistics
- C. show IP NAT Translations
- D. show access-list configuration

Answer: A, B

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QUESTION 234:

You work as a network consultant at Certkiller . You have been asked by a client to help company employees connect with an ISP so that they can gain access to the Internet. The employees will use VPN software on their PCs to access the corporate network through the Internet. No cable, DSL, or ISDN is available since these employees work in very remote locations. The company still wants continuous access and are willing to pay for an analog phone line for each employee.

Which Cisco 800 series router should you recommend?

- A. Cisco 803
- B. Cisco 804
- C. Cisco 805
- D. Cisco 806

Answer: C

The 805 is the only one you can connect a modem to.

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QUESTION 235:

You work as a network consultant at Certkiller . You have been asked by a client to help company employees connect with an ISP so that they can gain access to the Internet. The employees will use VPN software on their PCs to access the corporate network through the Internet. No cable or DSL is available so you must use ISDN.

The telco does NOT supply NT1s, there will be two PCs connecting and a printer at each location, and each location will have an analog fax machine.

Which Cisco 800 series router should you recommend?

- A. Cisco 801
- B. Cisco 802
- C. Cisco 803
- D. Cisco 804

Answer: D

802 meets the requirements because of the ISDN U however it does not have enough ports. The 803 will not work because it is ISDN S/T and requires a NT1.

http://www.cisco.com/en/US/products/hw/modules/ps3129/products_tech_note09186a00800ab514.shtml

QUESTION 236:

EZ VPN is configured in Client mode with manual connection.

What is the behavior of the router when the VPN connection is down but the router is still operational and attached to the Internet?

- A. The router has no connection since the VPN is down.
- B. The router will permit Internet access but continues to attempt to attach to the VPN.
- C. The user cannot get out to the Internet because the router continues to attempt to attach to the VPN.
- D. The router works normally and the VPN connection is dormant until the user initiates the VPN again.

Answer: D

QUESTION 237:

You are using the CRWS tool to set up EZ VPN.

Which type of connection type for the VPN will be created?

- A. Manual
- B. Automatic
- C. Temporary
- D. Permanent

Answer: B

QUESTION 238:

What is a reason for creating VLANs on switches?

- A. To simplify management
- B. To simplify configuration
- C. To enhance Layer 2 functionality
- D. To create smaller broadcast domains

Answer: D

QUESTION 239:

Bridging LANs helps to alleviate collisions in a CSMA/CD environment by reducing the size of the collision domain.

However, it fails to address which problem?

- A. Excessive CRC errors
- B. Media-type mismatches
- C. Flooding of BPDU frames
- D. Excessive broadcast frames

Answer:

QUESTION 240:

Where can you modify a VLAN name on a switch? (Choose two)

- 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

QUESTION 241:

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

Speed and duplex it set to auto be default.

QUESTION 242:

Certkiller requires a device that can connect 26 users in one building and can connect to their main campus via EIGRP.

Which device supports this capability?

- A. 4000 with SUP 1
- B. 6500 with SUP 1a
- C. 2950 with SI software
- D. 3550 with EMI software

Answer: D

A, B seem to be too large of switches, C only goes up to 24 ports in Standard Image

QUESTION 243:

Using the Cisco three level design strategy, how many tiers are present in small campus networks?

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

Answer: B

Small campus locations will likely have a two-tier design with wiring closet component (Ethernet access layer) and a backbone core (collapsed core and distribution layers).

http://www.cisco.com/en/US/netsol/ns340/ns394/ns147/ns17/networking_solutions_package.html

QUESTION 244:

What does the autoselect feature of a Cisco access server allow?

- A. The selection of IP packets for routing .
- B. A configured process to start automatically.
- C. Serial interfaces to sense incoming modem calls.
- D. Users to preselect which protocol they want to use.

Answer: B

The autoselect ppp command configures the Cisco IOS software to allow a PPP session to start up automatically on these selected lines

http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_feature_guide09186a0080080efc.html

Incorrect
C, D don't seem possible

QUESTION 245:

Which two Cisco products provide gigabit Ethernet and gigabit EthernetChannel to the backbone?
(Choose two)

- A. 2950
- B. 3550
- C. 3700
- D. 4000

Answer: A, B

http://www.cisco.com/en/US/products/hw/switches/ps628/products_white_paper09186a008009268A.shtml

QUESTION 246:

Which three benefits do both dial-up and broadband solutions provide? (Choose three)

- A. Flexibility
- B. Affordable cost
- C. Easy setup and administration
- D. Easy access from retail shopping areas

Answer: A, B, C

QUESTION 247:

The Catalyst 2950 allows for future expansion through its _____.

- A. Modularization
- B. IOS capabilities
- C. Internal AIM slot
- D. Gigabit Ethernet ports

Answer: D

QUESTION 248:

Which are dedicated WAN design types?

- A. DSL, SMDS, and ISDN
- B. Modems, X.25, and ISDN
- C. Cable, SMDS, and modem

D. Leased line, Frame Relay, and voice/data

Answer: D

Reference is Cisco Partners website.

QUESTION 249:

What trends influence the market for more powerful WANs?

- A. Speed and distance
- B. Prioritization and speed
- C. Speed and integration of voice and data
- D. Integration of voice and video, and the need for prioritization.

Answer: D

QUESTION 250:

Which Cisco product supports multilayer switching across SONET?

- A. 3550
- B. 6500
- C. 7600
- D. 8500

Answer: D

QUESTION 251:

Which two routing protocols does the FWSM support? (Choose two)

- A. ISIS
- B. BGP
- C. Static
- D. OSPF
- E. EIGRP

Answer: D, ?

Documentation says RIP and OSPF, RIP is not an option

QUESTION 252:

How many security levels are available on the Firewall Services module?

- A. 1
- B. 20

- C. 50
- D. 100
- E. 1000

Answer: D

http://www.cisco.com/univercd/cc/td/doc/product/lan/cat6000/cfgnotes/78_14450.htm

QUESTION 253:

The Catalyst 4500 family offers which layer(s) of nonblocking switching?

- A. Layer 2
- B. Layer 2/3
- C. Layer 2/3/4
- D. Layer 2/3/4/5

Answer: B

http://www.cisco.com/en/US/products/hw/switches/ps4324/prod_bulletin09186a00801304df.html

QUESTION 254:

CMS enables fast deployment of networks with the use of the _____ tool.

- A. Software Upgrade
- B. Fault Management
- C. Access Control List
- D. Configuration Cloning

Answer: D

http://www.cisco.com/warp/public/cc/pd/si/casi/ca3550/prodlit/cclms_ds.htm

QUESTION 255:

Which Native IOS feature supports a forwarding approach that eliminates the supervisor from touching a frame for forwarding decisions?

- A. FIB
- B. MLS
- C. CEF
- D. DCEF

Answer: C

QUESTION 256:

How many packets per second does the Cisco 7200 with NPE-400 support?

- A. 375,000 pps
- B. 400,000 pps
- C. 500,000 pps
- D. 750,000 pps

Answer: B

The NPE-### corresponds to the pps rate

QUESTION 257:

Which three can the 7200 support? (Choose three)

- A. 2 AC power supplies
- B. 1 AC power supply only
- C. 1 DC power supply only
- D. 1 AC and 1 DC power supply

Answer: A, B, C

AC and DC cannot be mixed

QUESTION 258:

Which additional ports does the single port OC-48c/STM-16 POS card have?

- A. 2 Gigabit Ethernet ports
- B. 4 Gigabit Ethernet ports
- C. 2 OC-12c/STM-4 POS ports
- D. 4 OC-12c/STM-4 POS ports

Answer: C

Guess by looking at the picture of the card on the Cisco website

QUESTION 259:

The Cisco 7400 uses the same processor as which 7200 engine?

- A. NSE 1
- B. NSE 3
- C. NPE 225
- D. NPE 300
- E. NPE 400

Answer: A

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QUESTION 260:

Network Services provide hardware-based data compression and encryption in the Cisco 7500 series and is done in the _____.

- A. VIM
- B. SSP
- C. Service adapters
- D. Route switch processor

Answer: C

QUESTION 261:

Which two compression algorithms does link compression support? (Choose two)

- A. Stac
- B. MNP5
- C. Huffman
- D. Predictor
- E. Van Jacobson

Answer: A, C

QUESTION 262:

Which is designed for use by service providers?

- A. 4003
- B. 4006-NEBs
- C. 6509-NEBs
- D. 6506 w/IOS ver 7

Answer: C

<http://www.cisco.com/en/US/products/hw/switches/ps708/ps712/index.html>

QUESTION 263:

Which two Catalyst 6500 components are hot-swappable? (Choose two)

- A. RAM
- B. GBICs
- C. Switch fabric
- D. PFC daughter card

Answer: B, D

QUESTION 264:

Usually, redundancy in the core is achieved with _____.

- A. PFC
- B. CDP
- C. VRRM
- D. HSRP

Answer: D

QUESTION 265:

How many FastEthernet ports are available on the Catalyst 4000?

- A. 96
- B. 124
- C. 132
- D. 224
- E. 240

Answer: E

<http://www.cisco.com/en/US/products/hw/switches/ps663/ps668/index.html>

QUESTION 266:

Which two trunking methods are supported by the Cisco 2600 series? (Choose two)

- A. ISL
- B. LANE
- C. 802.1q
- D. 802.10

Answer: A, C

QUESTION 267:

Which type of trunking does the 1721 router support?

- A. 802.10
- B. ISL only
- C. 802.1q only
- D. ISL and 802.1q

Answer: C

http://www.cisco.com/en/US/products/hw/routers/ps221/products_data_sheet09186a00800920ec.html

QUESTION 268:

What does the Cisco 3725 have?

- A. 2 network module slots, 3 VWIC slots, and 2 AIM slots
- B. 1 network module slot, 3 VWIC slots, and 2 AIM slots
- C. 3 network module slots, 2 VWIC slots, and 2 AIM slots
- D. 2 network module slots, 3 VWIC slots, and 3 AIM slots

Answer: B

http://www.cisco.com/en/US/products/hw/routers/ps282/prod_presentation0900aecd800b1da5.html

QUESTION 269:

Which two features or benefits do the Cisco 800 series routers offer? (Choose two)

- A. Support for voice and fax ports.
- B. The high speed of ISDN for access.
- C. Support for a wide range of routing protocols.
- D. Support for multiple Frame Relay simultaneous connections.

Answer: A, B

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QUESTION 270:

Which router interface configuration command identifies an inside NAT interface?

- A. ip nat inside
- B. ip nat map inside
- C. ip address inside
- D. ip nat permit inside

Answer: A

QUESTION 271:

Which three are disadvantages of NAT? (Choose three)

- A. It cannot be used with firewalls.
- B. It introduces switching path delays.
- C. It increases security vulnerabilities.
- D. It complicates packet troubleshooting.

E. It breaks applications that use embedded addresses.

Answer: B, D, E

Incorrect Answers:A, it can be used with firewalls, C, it actually decreases security vulnerabilities.

QUESTION 272:

Exhibit:

```
ip nat pool nat1 61.56.2.1 61.56.2.254
netmask 255.255.255.0
ip nat inside source list 1 pool nat1
!
interface Ethernet0
ip address 10.1.1.10 255.255.255.0
ip nat inside
!
interface Serial10
ip address 75.15.2.1 255.255.255.0
ip nat outside
!
access-list 1 permit 10.1.1.0 0.0.0.255
```

Which NAT configuration is shown in the exhibit?

- A. Static
- B. Dynamic
- C. Overlapping
- D. Overloading
- E. TCP Load Distribution

Answer:

QUESTION 273:

Using switch clustering, how many ports can users manage from a single IP address?

- A. 240
- B. 380
- C. 500
- D. 680
- E. 800

Answer: B

With Cisco Switch Clustering, users can manage over 380 ports from a single IP address, and connect up to 16 switches, regardless of physical location, with a broad range of Ethernet, Fast Ethernet, and Gigabit Ethernet media

<http://www.cisco.com/en/US/products/hw/switches/ps637/index.html>

QUESTION 274:

Which Catalyst product is designed to replace hubs in the wiring closet?

- A. 1950
- B. 2950
- C. 3550
- D. 5000

Answer: C

The Catalyst 3550 Series can serve as both a powerful access layer switch for medium enterprise wiring closets, as a backbone switch for mid-sized networks, and also for the edge of metro access networks.

<http://www.cisco.com/en/US/products/hw/switches/ps646/ps3814/index.html>

QUESTION 275:

Port security on a 3550 switch allows a network administrator to lock a port based on_____.

- A. User name
- B. IP address
- C. MAC address
- D. VLAN membership

Answer: C

http://www.cisco.com/en/US/products/hw/switches/ps646/products_system_message_guide_chapter09186a0080115b72

QUESTION 276:

Which Catalyst Switch has modules tailored for VOIP?

- A. 2950
- B. 3550
- C. 4000
- D. 6500

Answer:

QUESTION 277:

How many models does the Catalyst 6500 have?

- A. 2
- B. 3
- C. 4

- D. 6
- E. 7

Answer: C
6503, 6506, 6509, 6513

QUESTION 278:

In which Catalyst model does the FlexWAN module work?

Answer:

QUESTION 279:

Which module provides server monitoring capabilities?

- A. IDS
- B. NAM
- C. VLAN
- D. FlexWAN

Answer: B

QUESTION 280:

Certkiller .com is looking for a new switch that will support their 100 users and IP telephony. Which product should you recommend?

- A. 2950
- B. 3550
- C. 4003
- D. 6500

Answer: D

QUESTION 281:

A Company is installing more than 300 workstations that need simultaneous access to the Internet. The company has a single class C block of IP address for the new workstations. How can the company ensure Internet access for all of the workstation?

Answer: NAT
OR: PAT

QUESTION 282:

Which two are valid parameters to the "ip nat pool" command on a router? (Choose two)

- A. netmask
- B. source static
- C. Start IP Address
- D. inside/outside

Answer: A, C
netmask, Name, Start IP Add

QUESTION 283:

Which statement about TCP/IP header compression is true?

- A. ?
- B. ?
- C. It uses the stac compression algorithm.
- D. ?

Answer:

QUESTION 284:

~~~ They require three 100BaseT interfaces for the headquarters location....lowest price Router ?

- A. 2650
- B. 2691
- C. 3725
- D. 3745

Answer: A

---

**QUESTION 285:**

The Unity protocol supports only ISAKMP policies that use \_\_\_IKE negotiation. So the IPSec server being used with the Cisco Ez VPN Remote must be configured for this group?

- A. Group1
- B. Group2
- C. Group3
- D. Group7

Answer: B

---

**QUESTION 286:**

What are the two modes of operation for the Ez VPN Remote? (Choose two)

- A. Client mode with NAT/PAT
- B. Client mode without NAT/PAT
- C. Network Extension mode with PAT
- D. Network Extension mode without PAT

Answer: A, D

[http://www.cisco.com/en/US/netsol/ns340/ns394/ns171/ns27/networking\\_solutions\\_white\\_papers\\_list.html](http://www.cisco.com/en/US/netsol/ns340/ns394/ns171/ns27/networking_solutions_white_papers_list.html)

-client mode : Traffic from the remote host is forwarded after applying Network Address Translation/Port Address Translation (NAT/PAT).

-Network Extension mode : Addresses of the remote hosts are routable on the network without applying NAT/PAT.

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**QUESTION 287:**

What is the default IP address for the CRWS tool as accessed from the inside port of the Cisco SOHO or Cisco 800 series routers?

- A. 10.0.0.1
- B. 10.10.0.1
- C. 10.10.10.1
- D. 10.10.10.10

Answer: C

[http://www.cisco.com/en/US/products/hw/routers/ps380/products\\_quick\\_start09186a00800ea6d5.html](http://www.cisco.com/en/US/products/hw/routers/ps380/products_quick_start09186a00800ea6d5.html)

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**QUESTION 288:**

The 2600 series router supports VOIP and VoFR on\_\_\_\_\_.

- A. T1 only
- B. E1 and H1
- C. T1 and E1
- D. D1 nad T1

Answer: C

---

**QUESTION 289:**

The Cisco uBR925\_\_\_\_.(Choose two)

- A. is a high-speed cable modem
- B. is the final hop for DOCSIS carrier name resolution
- C. provied various services dependong upon the IOS version installed.
- D. attached to cable networks using a special RFI-2 reverse BNC connector.

Answer: A, B

---

**QUESTION 290:**

Which two statements about VLANs and broadcast are true? (Choose 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. Broadcast are dropped at the router interface for each logical network.

Answer: A, D

---

**QUESTION 291:**

Which two are VIP4 improvements? (Choose two)

- A. RRMP
- B. error code correction version 4
- C. the ability to run any routing protocol directly
- D. higher capacity memory modules for rich IP Services.

Answer: B, D

---

**QUESTION 292:**

Which feature of the 7200 supports switching of DS-0 time slots ?

- A. MIX
- B. MSP
- C. MXP
- D. MICX

Answer: A

<http://newsroom.cisco.com/dlls/fspnisapid5bd.html>

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**QUESTION 293:**

Which routing protocol helps the 7200 achieve high reliability?

- A. ISIS
- B. HSRP
- C. OSPF
- D. BGP4

Answer: C

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**QUESTION 294:**

What are two features of the Cisco 7300 ?(Choose two)

- A. is 5 RU high --> 1 or 4 RU
- B. has side-to-side airflow --> Front-back airflow
- C. has optional redundant power
- D. has an optional route processor

Answer: B, C

---

**QUESTION 295:**

Using the Cisco 7600 services, converged data, voice, and video traffic can be transported\_ end-to-end across an interconnected LAN, WAN, and MAN environment?

- A. easily
- B. virtually
- C. remotely
- D. precisely
- E. seamlessly

Answer: E

---

**QUESTION 296:**

Which Supervisor module is focused on a wiring closet scenario?

- A. Su1
- B. Su1A
- C. S2
- D. S2A
- E. e. S2U

Answer: A, D

---

**QUESTION 297:**

To utilize the FWSM with two components are required on the Catalyst 6500 platform?(Choose two)

- A. IOS
- B. CatOS
- C. Su2

D. Su2 with MSFC

Answer: A, D

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**QUESTION 298:**

How do you configure redundancy with the firewall Services module?

- A. HSRP
- B. LAN failover
- C. Secondary IP address
- D. It is not possible

Answer: B