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D Explanation: Static routing can be used to define an exit point from a router when no other routes are available or necessary. This is called a default route. QUESTION 242 Under which circumstance should a network administrator implement one-way NAT? A. when the network must route UDP traffic B. when traffic that originates outside the network must be routed to internal hosts C. when traffic that originates inside the network must be routed to internal hosts D. when the network has few public IP addresses and many private IP addresses require outside access Answer: B Explanation: NAT operation is typically transparent to both the internal and external hosts. Typically the internal host is aware of the true IP address and TCP or UDP port of the external host. Typically the NAT device may function as the default gateway for the internal host. However the external host is only aware of the public IP address for the NAT device and the particular port being used to communicate on behalf of a specific internal host. NAT and TCP/UDP "Pure NAT", operating on IP alone, may or may not correctly parse protocols that are totally concerned with IP information, such as ICMP, depending on whether the payload is interpreted by a host on the "inside" or "outside" of translation. As soon as the protocol stack is traversed, even with such basic protocols as TCP and UDP, the protocols will break unless NAT takes action beyond the network layer. IP packets have a checksum in each packet header, which provides error detection only for the header. IP datagrams may become fragmented and it is necessary for a NAT to reassemble these fragments to allow correct recalculation of higher-level checksums and correct tracking of which packets belong to which connection. The major transport layer protocols, TCP and UDP, have a checksum that covers all the data they carry, as well as the TCP/UDP header, plus a "pseudo-header" that contains the source and destination IP addresses of the packet carrying the TCP/UDP header. For an originating NAT to pass TCP or UDP successfully, it must recompute the TCP/UDP header checksum based on the translated IP addresses, not the original ones, and put that checksum into the TCP/UDP header of the first packet of the fragmented set of packets. The receiving NAT must recompute the IP checksum on every packet it passes to the destination host, and also recognize and recompute the TCP/UDP header using the retranslated addresses and pseudo-header. This is not a completely solved problem. One solution is for the receiving NAT to reassemble the entire segment and then recompute a checksum calculated across all packets. The originating host may perform Maximum transmission unit (MTU) path discovery to determine the packet size that can be transmitted without fragmentation, and then set the don't fragment (DF) bit in the appropriate packet header field. Of course, this is only a one-way solution, because the responding host can send packets of any size, which may be fragmented before reaching the NAT.

QUESTION 243 Which component of a routing table entry represents the subnet mask? A. routing protocol code B. prefix C. metric D. network mask Answer: D Explanation: IP Routing Table Entry Types An entry in the IP routing table contains the following information in the order presented: Network ID. The network ID or destination corresponding to the route. The network ID can be class-based, subnet, or supernet network ID, or an IP address for a host route. Network Mask. The mask that is used to match a destination IP address to the network ID. Next Hop. The IP address of the next hop. Interface. An indication of which network interface is used to forward the IP packet. Metric. A number used to indicate the cost of the route so the best route among possible multiple routes to the same destination can be selected. A common use of the metric is to indicate the number of hops (routers crossed) to the network ID. Routing table entries can be used to store the following types of routes: Directly Attached Network IDs. Routes for network IDs that are directly attached. For directly attached networks, the Next Hop field can be blank or contain the IP address of the interface on that network. Remote Network IDs. Routes for network IDs that are not directly attached but are available across other routers. For remote networks, the Next Hop field is the IP address of a local router in between the forwarding node and the remote network. Host Routes. A route to a specific IP address. Host routes allow routing to occur on a per-IP address basis. For host routes, the network ID is the IP address of the specified host and the network mask is 255.255.255.255. Default Route. The default route is designed to be used when a more specific network ID or host route is not found. The default route network ID is 0.0.0.0 with the network mask of 0.0.0.0. QUESTION 244 When a router makes a routing decision for a packet that is received from one network and destined to another, which portion of the packet does it replace? A. Layer 2 frame header and trailer B. Layer 3 IP address C. Layer 5 session D. Layer 4 protocol Answer: A Explanation: Router Switching Function (1.2.1.1) A primary function

of a router is to forward packets toward their destination. This is accomplished by using a switching function, which is the process used by a router to accept a packet on one interface and forward it out of another interface. A key responsibility of the switching function is to encapsulate packets in the appropriate data link frame type for the outgoing data link. NOTE: In this context, the term "switching" literally means moving packets from source to destination and should not be confused with the function of a Layer 2 switch. After the router has determined the exit interface using the path determination function, the router must encapsulate the packet into the data link frame of the outgoing interface. What does a router do with a packet received from one network and destined for another network? The router performs the following three major steps: Step 1. De-encapsulates the Layer 3 packet by removing the Layer 2 frame header and trailer. Step 2. Examines the destination IP address of the IP packet to find the best path in the routing table. Step 3. If the router finds a path to the destination, it encapsulates the Layer 3 packet into a new Layer 2 frame and forwards the frame out the exit interface.

QUESTION 245 On which type of device is every port in the same collision domain? A. a router B. a Layer 2 switch C. a hub D. switch E. a Layer 3 switch Answer: C Explanation: Collision domain A collision domain is, as the name implies, a part of a network where packet collisions can occur. A collision occurs when two devices send a packet at the same time on the shared network segment. The packets collide and both devices must send the packets again, which reduces network efficiency. Collisions are often in a hub environment, because each port on a hub is in the same collision domain. By contrast, each port on a bridge, a switch or a router is in a separate collision domain.

QUESTION 246 Which statement about routing protocols is true? A. Link-state routing protocols choose a path by the number of hops to the destination. B. OSPF is a link-state routing protocol. C. Distance-vector routing protocols use the Shortest Path First algorithm. D. IS-IS is a distance-vector routing protocol. Answer: B Explanation: Link State Routing Protocols Link state protocols are also called shortest-path-first protocols. Link state routing protocols have a complete picture of the network topology. Hence they know more about the whole network than any distance vector protocol. Three separate tables are created on each link state routing enabled router. One table is used to hold details about directly connected neighbors, one is used to hold the topology of the entire internetwork and the last one is used to hold the actual routing table. Link state protocols send information about directly connected links to all the routers in the network. Examples of Link state routing protocols include OSPF - Open Shortest Path First and IS-IS - Intermediate System to Intermediate System. There are also routing protocols that are considered to be hybrid in the sense that they use aspects of both distance vector and link state protocols. EIGRP - Enhanced Interior Gateway Routing Protocol is one of those hybrid routing protocols.

QUESTION 247 Which technology supports the stateless assignment of IPv6 addresses? A. DNS B. DHCPv6 C. DHCP D. autoconfiguration Answer: D Explanation: Stateless Auto Configuration is an important feature offered by the IPv6 protocol. It allows the various devices attached to an IPv6 network to connect to the Internet using the Stateless Auto Configuration without requiring any intermediate IP support in the form of a Dynamic Host Configuration Protocol (DHCP) server. <http://ipv6.com/articles/general/Stateless-Auto-Configuration.htm>

QUESTION 248 Which feature allows a device to use a switch port that is configured for half-duplex to access the network? A. CSMA/CD B. IGMP C. port security D. split horizon Answer: A Explanation: Ethernet began as a local area network technology that provided a half-duplex shared channel for stations connected to coaxial cable segments linked with signal repeaters. In this appendix, we take a detailed look at the half-duplex shared-channel mode of operation, and at the CSMA/CD mechanism that makes it work. In the original half-duplex mode, the CSMA/CD protocol allows a set of stations to compete for access to a shared Ethernet channel in a fair and equitable manner. The protocol's rules determine the behavior of Ethernet stations, including when they are allowed to transmit a frame onto a shared Ethernet channel, and what to do when a collision occurs. Today, virtually all devices are connected to Ethernet switch ports over full-duplex media, such as twisted-pair cables. On this type of connection, assuming that both devices can support the full-duplex mode of operation and that Auto-Negotiation (AN) is enabled, the AN protocol will automatically select the highest-performance mode of operation supported by the devices at each end of the link. That will result in full-duplex mode for the vast majority of Ethernet connections with modern interfaces that support full duplex and AN.

QUESTION 249 Which function enables an administrator to route multiple VLANs on a router? A. IEEE 802.1X B. HSRP C. port channel D. router on a stick Answer: D

QUESTION 250 Which dynamic routing protocol uses only the hop count to determine the best path to a destination? A. IGRP B. RIP C. EIGRP D. OSPF Answer: B Explanation: Determining the best path involves the evaluation of multiple paths to the same destination network and selecting the optimum or shortest path to reach that network. Whenever multiple paths to the same network exist, each path uses a different exit interface on the router to reach that network. The best path is selected by a routing protocol based on the value or metric it uses to determine the distance to reach a network. A metric is the quantitative value used to measure the distance to a given network. The best path to a network is the path with the lowest metric. Dynamic routing protocols typically use their own rules and metrics to build and update routing tables. The routing algorithm generates a value, or a metric, for each path through the network. Metrics can be based on either a single characteristic or several characteristics of a path. Some routing protocols can base route selection on

multiple metrics, combining them into a single metric. The following lists some dynamic protocols and the metrics they use: Routing Information Protocol (RIP): Hop count Open Shortest Path First (OSPF): Cisco routers use a cost based on cumulative bandwidth from source to destination Enhanced Interior Gateway Routing Protocol (EIGRP): Bandwidth, delay, load, reliability

QUESTION 251 What is one requirement for interfaces to run IPv6? A. An IPv6 address must be configured on the interface. B. An IPv4 address must be configured. C. Stateless autoconfiguration must be enabled after enabling IPv6 on the interface. D. IPv6 must be enabled with the `ipv6 enable` command in global configuration mode. Answer: A Explanation: To use IPv6 on your router, you must, at a minimum, enable the protocol and assign IPv6 addresses to your interfaces.

QUESTION 252 Which destination IP address can a host use to send one message to multiple devices across different subnets? A. 172.20.1.0 B. 127.0.0.1 C. 192.168.0.1 D. 239.255.0.1 Answer: D Explanation: Multicast is a networking protocol where one host can send a message to a special multicast IP address and one or more network devices can listen for and receive those messages. Multicast works by taking advantage of the existing IPv4 networking infrastructure, and it does so in something of a weird fashion. As you read, keep in mind that things are a little confusing because multicast was "shoe-horned" in to an existing technology. For the rest of this article, let's use the multicast IP address of 239.255.0.1. We'll not worry about port numbers yet, but make a mental note that they are used in multicast. We'll discuss that later.

QUESTION 253 Which MTU size can cause a baby giant error? A. 1500 B. 9216 C. 1600 D. 1518 Answer: C Explanation: Standard Ethernet frame MTU is 1500 bytes. This does not include the Ethernet header and Cyclic Redundancy Check (CRC) trailer, which is 18 bytes in length, to make the total Ethernet frame size of 1518. In this document, MTU size or packet size refers only to Ethernet payload. <http://www.cisco.com/c/en/us/support/docs/switches/catalyst-4000-series-switches/29805-175.html>

QUESTION 254 Which entity assigns IPv6 addresses to end users? A. ICANN B. APNIC C. RIR D. ISPs Answer: D Explanation: Before going forward that far it is important to note that like IPv4, the placement of the devices that will be allocated with IPv6 addresses can affect the numbers and the method of assignment. If the IPv6 addresses in question will be used solely for the internal purposes of a business and do not need to be directly routable to the public Internet, then the Unique Local IPv6 range (RFC 4193) and assignment method can be used; these would be the equivalent of RFC 1918 IPv4 private address ranges. If, however, the IPv6 addresses are intended to be directly routable on the public Internet, a range must be assigned (just like with IPv4) by an Internet Service Provider (ISP), or a Regional Internet Registry (RIR) if allocating for an ISP. As of this writing, the Unique Local address range includes all addresses that fall under the `FC00::/7` prefix (they begin with '1111110' in binary), while the Global Unicast address range includes all addresses that fall under the `2000::/3` prefix (they begin with '001' in binary). Global Unicast ranges are divided by a number of different entities; at the top of these entities is Internet Corporation for Assigned Names and Numbers (ICANN) who assigns addresses to the RIR's (for all regional registries except APNIC), who will in turn assign addresses to ISP's who will in turn assign addresses to End Users (EU).

QUESTION 255 Which option is the default switch port port-security violation mode? A. shutdown B. protect C. shutdown vlan D. restrict Answer: A Explanation: Shutdown--This mode is the default violation mode; when in this mode, the switch will automatically force the switchport into an error disabled (`err-disabled`) state when a violation occurs. While in this state, the switchport forwards no traffic. The switchport can be brought out of this error disabled state by issuing the `errdisable recovery cause CLI` command or by disabling and reenabling the switchport. Shutdown VLAN--This mode mimics the behavior of the shutdown mode but limits the error disabled state the specific violating VLAN.

QUESTION 256 Which statement about the inside interface configuration in a NAT deployment is true? A. It is defined globally B. It identifies the location of source addresses for outgoing packets to be translated using access or route maps. C. It must be configured if static NAT is used D. It identifies the public IP address that traffic will use to reach the internet. Answer: B Explanation: This module describes how to configure Network Address Translation (NAT) for IP address conservation and how to configure inside and outside source addresses. This module also provides information about the benefits of configuring NAT for IP address conservation. NAT enables private IP internetworks that use nonregistered IP addresses to connect to the Internet. NAT operates on a device, usually connecting two networks, and translates the private (not globally unique) addresses in the internal network into legal addresses before packets are forwarded onto another network. NAT can be configured to advertise to the outside world only one address for the entire network. This ability provides additional security by effectively hiding the entire internal network behind that one address. NAT is also used at the enterprise edge to allow internal users access to the Internet and to allow Internet access to internal devices such as mail servers.

QUESTION 257 Which value is indicated by the next hop in a routing table? A. preference of the route source B. IP address of the remote router for forwarding the packets C. how the route was learned D. exit interface IP address for forwarding the packets Answer: B Explanation: From official Odom cisco book is Routes for remote subnets typically list both an outgoing interface and next-hop router IP address. Routes for subnets that connect directly to the router list only the outgoing interface, because packets to these destinations do not need to be sent to another router.

QUESTION 258 Which option is a valid hostname for a switch? A. Switch-Cisco B. Switch-Cisco! C. SwitchCisco D. SwitchCisc0 Answer:

DExplanation: Hostnames can't start with a number, and can't have special characters (bangs/exclamation) (but can have a dash). A starts with a number. B has a bang at the end. C starts with a number. Only D is correct. QUESTION 259 Which component of the routing table ranks routing protocols according to their preferences? A. administrative distance B. next hop C. metric D. routing protocol code Answer: A Explanation: Administrative distance - This is the measure of trustworthiness of the source of the route. If a router learns about a destination from more than one routing protocol, administrative distance is compared and the preference is given to the routes with lower administrative distance. In other words, it is the believability of the source of the route. QUESTION 260 Which statement about unicast frame forwarding on a switch is true? A. The TCAM table stores destination MAC addresses B. If the destination MAC address is unknown, the frame is flooded to every port that is configured in the same VLAN except on the port that it was received on. C. The CAM table is used to determine whether traffic is permitted or denied on a switch D. The source address is used to determine the switch port to which a frame is forwarded Answer: B Your focus should be getting the best dumps to prepare for 100-105 exam. That is where Lead2pass comes in. We have collected an extensive library of exam dumps from Cisco certification. 100-105 new questions on Google Drive:

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