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**Exam** : **100-105**

**Title** : Cisco Interconnecting Cisco  
Networking Devices Part 1  
(ICND1 v3.0)

**Vendor** : Cisco

**Version** : DEMO

**NO.1** Which IPsec security protocol should be used when confidentiality is required?

- A. PSK
- B. ESP
- C. AH
- D. MD5

**Answer:** B

**NO.2** Which IP address is a private address?

- A. 172.20.14.36
- B. 172.33.194.30
- C. 168.172.19.39
- D. 12.0.0.1
- E. 192.169.42.34

**Answer:** A

Explanation:

Private IP Address Ranges (RFC 1918)

Class	From	To	CIDR Mask	Decimal Mask
Class A (24 Bit)	10.0.0.0	10.255.255.255	/8	255.0.0.0
Class B (20 Bit)	172.16.0.0	172.31.255.255	/12	255.240.0.0
Class C (16 Bit)	192.168.0.0	192.168.255.255	/16	255.255.0.0

**NO.3** Which routing protocol has the smallest default administrative distance?

- A. IS-IS
- B. OSPF
- C. EIGRP
- D. IBGP
- E. RIP

**Answer:** C

Explanation:

<http://www.cisco.com/c/en/us/support/docs/ip/border-gateway-protocol-bgp/15986-admin-distance.html>

Route Source	Default Distance Values
Connected interface	0
Static route	1
Enhanced Interior Gateway Routing Protocol (EIGRP) summary route	5
External Border Gateway Protocol (BGP)	20
Internal EIGRP	90
IGRP	100
OSPF	110
Intermediate System-to-Intermediate System (IS-IS)	115
Routing Information Protocol (RIP)	120
Exterior Gateway Protocol (EGP)	140
On Demand Routing (ODR)	160
External EIGRP	170
Internal BGP	200
Unknown*	255

**NO.4** Which two statements about the default configuration of a Cisco IOS router are true? (Choose two.)

- A. The enable password password and enable secret password are both set to cisco.
- B. The default hostname is Router.
- C. The loopback 0 interface is enabled.
- D. In privileged EXEC mode, the console times out after 10 minutes of inactivity.
- E. The first connected interface becomes the gateway of last resort.
- F. The hostname of the device is displayed in lower-case letters only, even if you specify capital letters.

**Answer:** B,D

**NO.5** Which commands display information about the Cisco IOS software version currently running on a router? (Choose three.)

- A. show protocols
- B. show IOS
- C. show running-config
- D. show flash
- E. show version
- F. show stacks

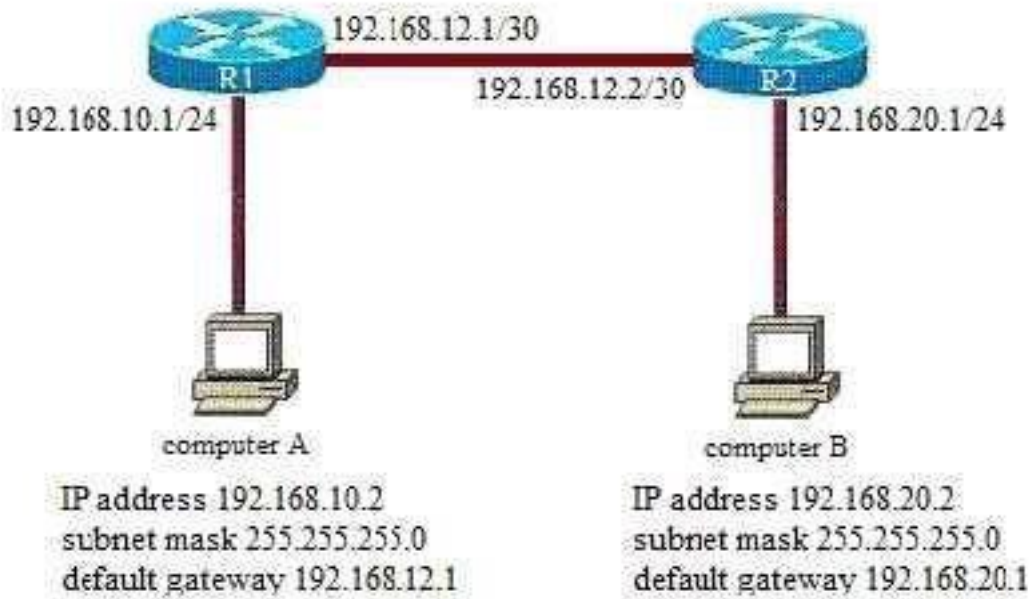
**Answer:** C,D,E

**NO.6** What cable use in star topology? (Choose two)

- A. 10Base-T
- B. 100Base-T
- C. 10 base5
- D. 10 base2

**Answer:** A,B

**NO.7** Refer to the exhibit. You have determined that computer A cannot ping computer B. Which reason for the problem is most likely true?



- A. The computer B subnet mask is incorrect.
- B. The computer A subnet mask is incorrect.
- C. The computer B default gateway address is incorrect.
- D. The computer A default gateway address is incorrect.

**Answer:** D

**NO.8** Refer to the exhibit. Which option describes how SwitchA will handle the frame just received?

SwitchA# **show mac-address-table**

< non-essential output omitted >

```

Destination Address  Address Type  VLAN  Destination Port
-----
00b0.d056.fe4d      Dynamic      1     FastEthernet0/3
00b0.d043.ac2e      Dynamic      1     FastEthernet0/4
00b0.d0fe.ac32      Dynamic      1     FastEthernet0/5
00b0.d0da.cb56      Dynamic      1     FastEthernet0/6
    
```

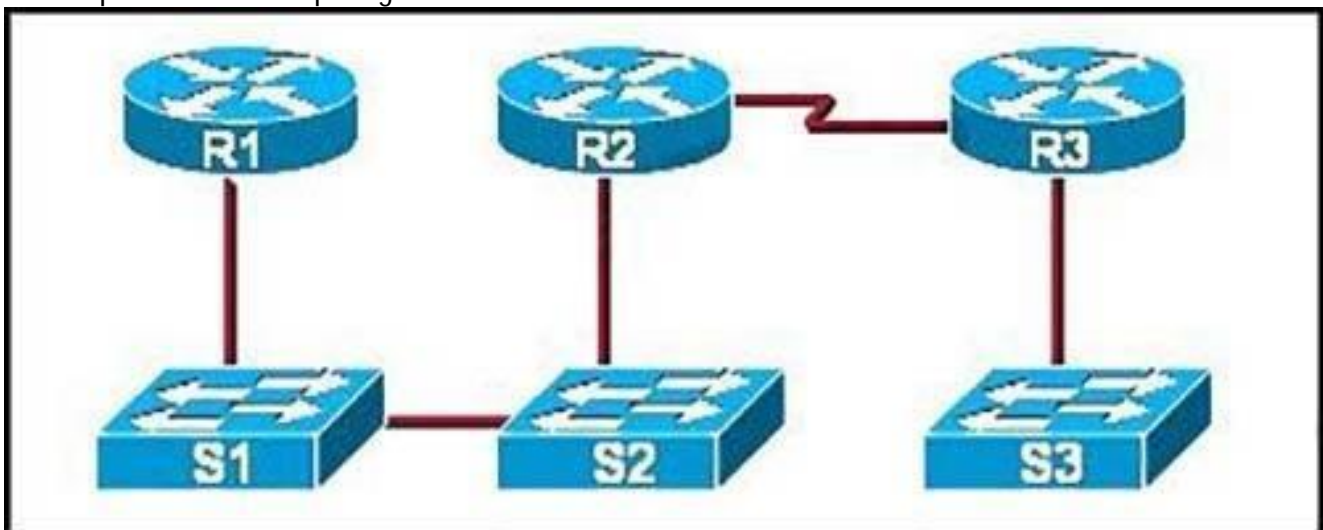
**Frame received by SwitchA:**

Source MAC	Destination MAC	Source IP	Destination IP
00b0.d056.fe4d	00b0.d0da.cb56	192.168.40.5	192.168.40.6

- A. It will forward the frame out of portFa0/3 only.
- B. It will forward the frame out of port Fa0/6 only.
- C. It will drop the frame.
- D. It will flood the frame out of all the ports except Fa0/3.
- E. It will flood the frame out all ports.

**Answer:** B

**NO.9** Refer to the exhibit. If CDP is enabled on all devices and interfaces, which devices will appear in the output of a show cdp neighbors command issued from R2?



- A. R1, S1, S2, R3 and S3
- B. R2 and R3

- C. R1, S1, S2, and R3
- D. R1 and R3
- E. R3 and S2

**Answer:** E

**NO.10** Refer to the exhibit. A user cannot reach any web sites on the Internet, but others in the department are not having a problem. What is the most likely cause of the problem?

```

C:\>ipconfig /all

Windows IP Configuration

    Host Name . . . . . : home-pc
    Primary Dns Suffix . . . . . :
    Node Type . . . . . : Hybrid
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled. . . . . : No

Ethernet adapter Local Area Connection 3:

    Connection-specific DNS Suffix . :
    Description . . . . . : Wired Network Connection
    Physical Address. . . . . : 00-13-CE-9B-33-93
    Dhcp Enabled. . . . . : No
    IP Address. . . . . : 10.10.10.2
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.10.10.1

C:\>
    
```

- A. NAT has not been configured on the router that connects to the Internet.
- B. A DNS server address is not reachable by the P
- C. IP routing is not enabled.
- D. The default gateway is not in the same subnet.
- E. A DHCP server address is not reachable by the PC.

**Answer:** B

**NO.11** Which two conditions must be met before you can perform the password recovery process on a Cisco router? (Choose two)

- A. You must have physical access to the device.
- B. You must connect the console to the router with a rollover cable
- C. You must connect the console to the router with a crossover cable
- D. You must connect the console to the router with a straight-through cable
- E. You must be able establish a Telnet connection to the device.

**Answer:** A,B

**NO.12** Refer to the exhibit. Which feature is enabled by this configuration?

```

R1(config)#ip nat pool cisco 10.1.1.0 10.1.1.50 255.255.255.0
    
```

- A. static NAT translation

- B. a dynamic NAT address pool
- C. a DHCP pool
- D. PAT

**Answer:** B

**NO.13** Which command is used to display the collection of OSPF link states?

- A. show ip ospf link-state
- B. show ip ospf neighbors
- C. show ip ospf database
- D. show ip ospf lsa database

**Answer:** C

Explanation:

The "show ip ospf database" command displays the link states. Here is an example:

Here is the lsa database on R2.

```
R2#show ip ospf database
OSPF Router with ID (2.2.2.2) (Process ID 1)
Router Link States (Area 0)
Link          ID          ADV          Router      Age          Seq#          Checksum      Link          count
2.2.2.2      2.2.2.2    2.2.2.2     793         755         0x80000003   0x004F85     0x004F85     2
10.4.4.4     10.4.4.4   10.4.4.4    776         755         0x80000004   0x005643     0x005643     1
111.111.111.111 111.111.111.111 111.111.111.111 755         755         0x80000005   0x0059CA     0x0059CA     2
133.133.133.133 133.133.133.133 133.133.133.133 775 0x80000005 0x00B5B1 2
Net Link States (Area 0)
Link          ID          ADV          Router      Age          Seq#          Checksum
10.1.1.1      111.111.111.111 111.111.111.111 794         755         0x80000001   0x001EBB
10.2.2.3      133.133.133.133 133.133.133.133 812         755         0x80000001   0x004BA9
10.4.4.1      111.111.111.111 111.111.111.111 755         755         0x80000001   0x007F16
10.4.4.3 133.133.133.133 775 0x80000001 0x00C31F
```

**NO.14** What should be part of a comprehensive network security plan?

- A. Delay deployment of software patches and updates until their effect on end-user equipment is well known and widely reported.
- B. Minimize network overhead by deactivating automatic antivirus client updates.
- C. Allow users to develop their own approach to network security.
- D. Physically secure network equipment from potential access by unauthorized individuals.
- E. Encourage users to use personal information in their passwords to minimize the likelihood of passwords being forgotten.

**Answer:** D

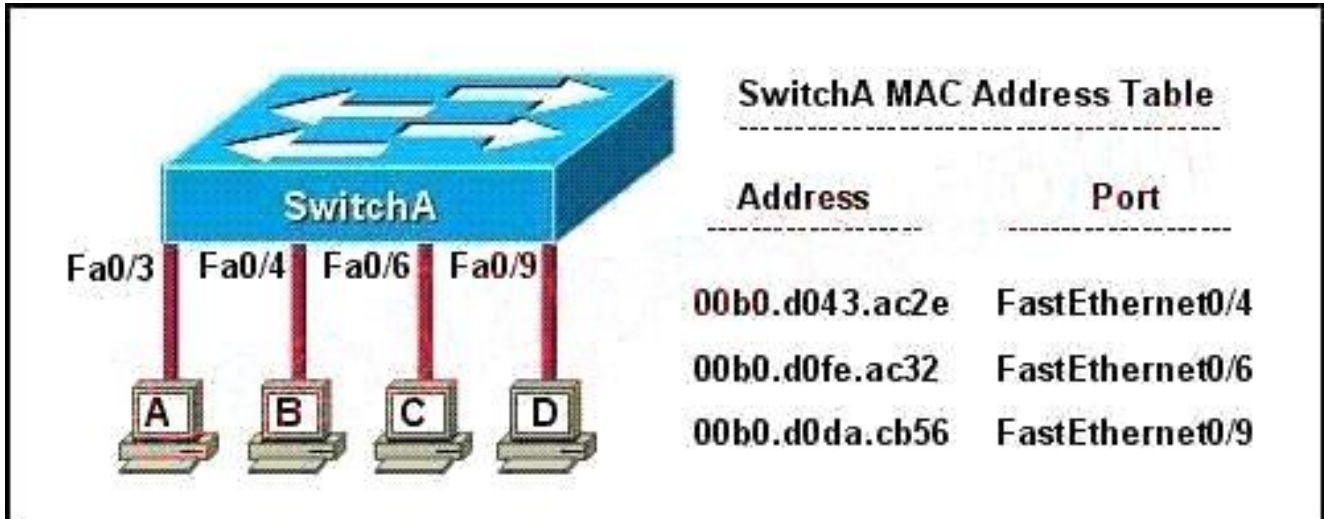
**NO.15** Which IEEE mechanism is responsible for the authentication of devices when they attempt to connect to a local network?

- A. 802.3x
- B. 802.1x
- C. 802.11
- D. 802.2x

**Answer:** B

**NO.16** Refer to the topology and MAC address table shown in the exhibit. Host A sends a data frame to host D.

What will the switch do when it receives the frame from host A?



- A. The switch will discard the frame and send an error message back to host A.
- B. The switch will flood the frame out of all ports except for port Fa0/3.
- C. The switch will add the source address and port to the MAC address table and forward the frame to host D.
- D. The switch will add the destination address of the frame to the MAC address table and forward the frame to host

**Answer:** C

**NO.17** You have configured two hosts that are connected to a single switch, but reside in different VLANs.

Which statement about the configuration is true?

- A. The two hosts can communicate with ICMP.
- B. The two hosts are unable to communicate without a trunk port.
- C. The two hosts are unable to communicate without a hub.
- D. The two hosts are unable to communicate without a router.

**Answer:** D

**NO.18** How does a switch differ from a hub?

- A. A switch operates at a lower, more efficient layer of the OSI model.
- B. A switch decreases the number of broadcast domains.
- C. A switch does not induce any latency into the frame transfer time.
- D. A switch decreases the number of collision domains.
- E. A switch tracks MAC addresses of directly-connected devices.

**Answer:** E

Explanation:

Some of the features and functions of a switch include:

A switch is essentially a fast, multi-port bridge, which can contain dozens of ports. Rather than creating two collision domains, each port creates its own collision domain. In a network of twenty nodes, twenty collision domains exist if each node is plugged into its own switch port. If an uplink port is included, one switch creates twenty-one single-node collision domains. A switch dynamically

builds and maintains a Content-Addressable Memory (CAM) table, holding all of the necessary MAC information for each port. For a detailed description of how switches operate, and their key differences to hubs, see the reference link below.

<http://www.cisco.com/warp/public/473/lan-switch-cisco.shtml>

**NO.19** Which network configuration allows a switch to send traffic from multiple VLANs over a single link to a router that routes between the VLANs?

- A. virtual trunking
- B. spanning-tree
- C. port channel
- D. router-on-a-stick

**Answer:** D

**NO.20** In which two circumstances are private IPv4 addresses appropriate? (Choose two)

- A. on hosts that require minimal access to external resources
- B. on internal hosts that stream data solely to external resources
- C. on the public-facing interface of a firewall
- D. on hosts that communicates only with other internal hosts
- E. to allow hosts inside an enterprise to communicate in both directions with hosts outside the enterprise

**Answer:** A,D

**NO.21** Which dynamic routing protocol uses only the hop count to determine the best path to a destination?

- A. EIGRP
- B. OSPF
- C. IGRP
- D. RIP

**Answer:** D

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

**NO.22** Refer to the exhibit. A network technician is unable to ping from R1 to R2. What will help correct the problem?

```
R1#sh int ser0/1
Serial0/1 is up, line protocol is down
  Hardware is GT96K Serial
  Internet address is 192.1.1.1/30
  MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
R2#sh int serial 0/1
Serial0/1 is up, line protocol is down
  Hardware is GT96K Serial
  Internet address is 192.1.1.2/30
  MTU 1500 bytes, BW 1544 Kbit/sec, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation HDLC, loopback not set
  Keepalive set (10 sec)
```

- A. Ensure that the serial cable is correctly plugged in to the interfaces.
- B. Change the subnet masks of both interfaces to 255.255.255.240.
- C. Apply the clock rate 56000 configuration command to the serial0/1 interface of R1.
- D. Change the address of the serial0/1 interface of R1 to 192.1.1.4.
- E. Configure the serial0/1 interfaces on R1 and R2 with the no shutdown command.

**Answer:** A

**NO.23** A router is deployed with the default factory settings. If a user on the router mistypes a command, which option is the result?

- A. The router recognizes the mistake and discards the request.
- B. The router disables DNS lookup.
- C. The router autocorrects the mistyped command.
- D. The router immediately returns an error message.
- E. The router attempts to resolve the command to an IP address.

**Answer:** E

**NO.24** In which circumstance is static routing most useful?

- A. on a network that experiences frequent link failures
- B. on a large network that must share routes quickly between routers
- C. on a network with frequent routing changes
- D. on a stub network

**Answer:** D

**NO.25** Which command displays the number of times that an individual router translated an inside

address to an outside address?

- A. show ip nat translation
- B. show counters
- C. show ip protocol 0
- D. show ip nat statistics
- E. show ip route

**Answer:** D

**NO.26** Drag and Drop Question

Drag and drop the IPv6 IP addresses from the left onto the correct IPv6 address types on the right.

::	modified EUI-64
2020:1008:0:0:85AB:800:52:734B	multicast
D8:FC:93:FF:FE:D8:05:0A	unicast
FF01::1	unspecified

**Answer:**

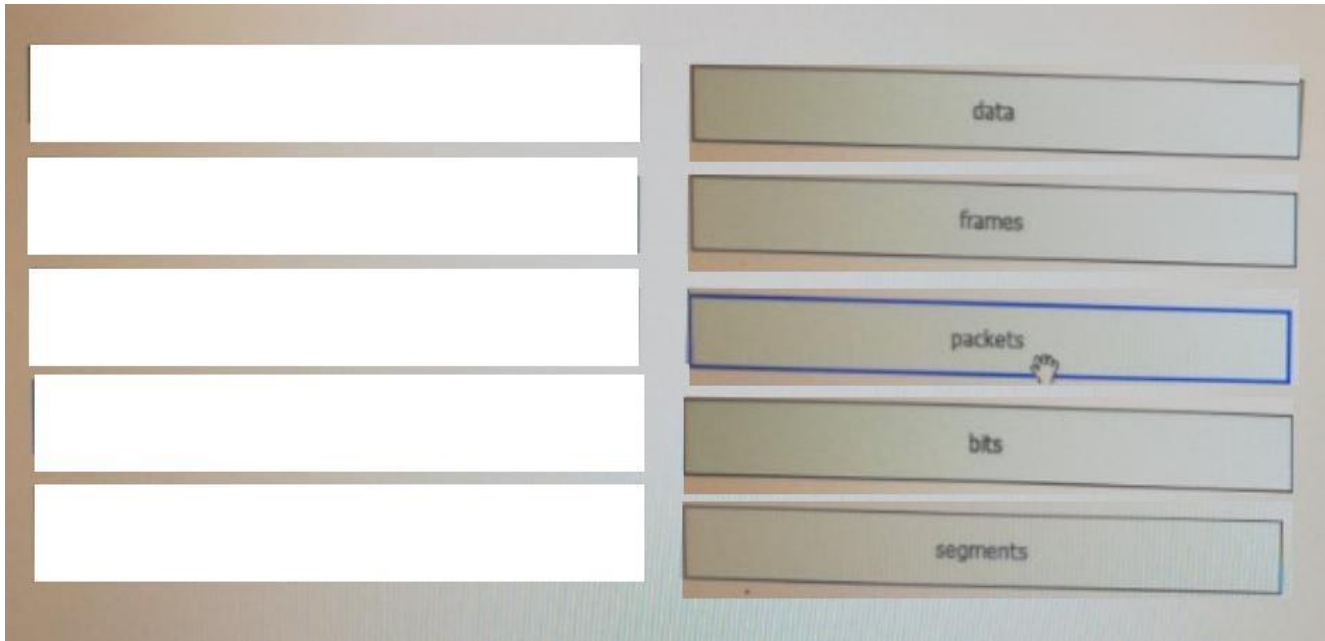
	2020:1008:0:0:85AB:800:52:734B
	FF01::1
	D8:FC:93:FF:FE:D8:05:0A
	::

**NO.27** Drag and Drop Question

Drag and drop the PDUs from the left onto the correct TCP/IP layers on the right.

bits	application layer
data	data link layer
frames	network layer
packets	physical layer
segments	transport layer

**Answer:**



Explanation:

<http://knutsonco.tripod.com/id9.html>

Here, is a table constructed to show you how OSI compares with TCP/IP, and how they both correspond with Encapsulation units (PDUs).

OSI #	OSI Layer Name	TCP/IP #	TCP/IP Layer Name	TCP/IP protocols at each TCP/IP Layer	TCP Utilities	Encapsulation Units (PDUs)
7	Application	4	Application	FTP, HTTP, SMTP DNS, TFTP	Telnet	Data
6	Presentation	4	Application	FTP, HTTP, SMTP DNS, TFTP	Telnet	Data
5	Session	4	Application	FTP, HTTP, SMTP DNS, TFTP	Telnet	Data
4	Transport	3	Transport	TCP	NONE	Segment
3	Network	2	Internet	IP	Ping Trace	Packet
2	Datalink	1	Network Access	NONE	NONE	Frames
1	Physical	1	Network Access	NONE	NONE	Bits

**NO.28** Which IPv6 address type is a public address?

- A. Multicast
- B. Link local
- C. Unique-local
- D. Global unicast

**Answer:** D

**NO.29** Drag and Drop Question

Drag and drop the descriptions of routing protocols from the left onto the correct routing types on the right.

- operates normally regardless of the network size
- provides highly secure routing
- provides predictable routing
- requires minimal resources
- supported on all topologies
- supports automatic rerouting

Dynamic Routing

- 
- 
- 

Static Routing

- 
- 
- 

**Answer:**

Dynamic Routing

- supports automatic rerouting
- operates normally regardless of the network size
- supported on all topologies

Static Routing

- provides highly secure routing
- requires minimal resources
- provides predictable routing

**NO.30** Under which circumstance should a network administrator implement one-way NAT?

- A.** when traffic that originates outside the network must be routed to internal hosts
- B.** when the network has few public IP addresses and many private IP addresses require outside access

C. when the network must route UDP traffic

D. when traffic that originates inside the network must be routed to internal hosts

**Answer:** A

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.