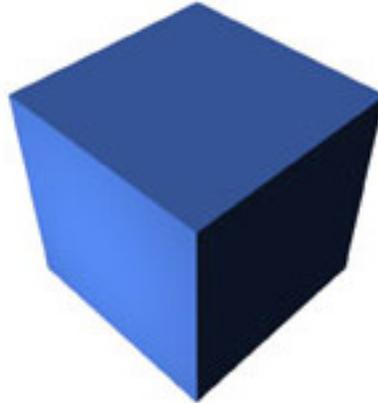


640-607

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Q. 1
Your Ethernet network, 172.30.1.0, shuts down. Which update message is seen in your router's debug ip rip output regarding that network?

- A. subnet 172.30.1.0, metric 0
- B. subnet 172.30.1.0, metric 1
- C. subnet 172.30.1.0, metric 15
- D. subnet 172.30.1.0, metric 16

Answer: D

Explanation: In RIP when a network is not reachable then its metric is changed to 16.

Incorrect Answers:

A is incorrect; this is not a valid metric.

B is incorrect; this metric indicates that the network is up.

C is incorrect; this metric indicates that the network is up.

Q. 2
Which command displays the configuration register setting?

- A. show register
- B. show flash
- C. show boot this IOS command displays the settings of the boot environment variables
- D. show version

Answer: D

Explanation:

The show version command displays version information for the hardware and firmware. This includes the register settings.

Incorrect Answers:

A is incorrect; this is not a valid command.

B is incorrect; the show flash command displays information in relation to router memory and image file.

C is incorrect; the show boot IOS command displays the settings of the boot environment variables.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 128-137.
<http://www.cisco.com/univercd/cc/td/doc/product/lan/c3550/1214ea1/3550cr/ccimtoc.htm>

Q. 3

When setting up Frame Relay for point-to-point subinterfaces, which of the following must not be configured?

- A. The Frame Relay encapsulation on the physical interface
- B. The local DLCI on each subinterface
- C. An IP address on the physical interface
- D. The subinterface type as point-to-point

Answer: C

Explanation:

When setting up Frame Relay for point-to-point subinterfaces it is recommend the network layer address, IP address be removed from the physical interface and assign this network layer address to the subinterface.

Incorrect Answers:

A is incorrect; when establishing a Frame Relay for point-to-point subinterfaces the Frame Relay encapsulation on the physical interface must be configured.

B is incorrect; when establishing a Frame Relay for point-to-point subinterfaces the local DLCI on each subinterface must be configured.

D is incorrect; when establishing a Frame Relay for point-to-point subinterfaces the subinterface must be configured as point-to-point.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 427-429.

Q. 4

Which IOS command is used to associate an ISDN phone number with the next hop router address?

- A. isdn destination number
- B. dialer map
- C. isdn spid1
- D. isdn line number

Answer: B

Explanation:

The dialer map command is used to define one or more dial-on-demand numbers to reach one or more destinations for a particular interface. This is the exact command to associate an ISDN phone number with the next hop router address.

Incorrect Answers:

A is incorrect; this is not a valid command.

C is incorrect; the isdn spid1 command specifies the SPID required for b channel to access the ISDN network when your router makes its call to the local ISDN exchange.

D is incorrect; this is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 397-406.

Q. 5

Exhibit:

```

Hostname: Central
Ph#123-6000,123-6001
SPID1:41044412360001
SPID2:41044412360002
  
```

```

Hostname: Remote
Ph#123-8000,123-8001
SPID1:41055512380001
SPID2:41055512380002
  
```



Central Partial Configuration

```

isdn switch-type basic-ni
username Remote password cisco
interface bri0
  ip address 10.1.1.1 255.255.255.0
  encapsulation ppp
  ppp authentication chap
  isdn spid1 51055512360001
  isdn spid1 51055512360002
  dialer map ip 10.1.1.2 name Remote 1238001
dialer-list 1 protocol ip permit
  
```

Use the partial BRI configuration and graphic shown. Which additional command must be issued on the Central router before interesting traffic will be sent to the Remote router?

- A. (config-if)# dialer-group 1

- B. (config-if)# dialer-list 1
- C. (config-if)# dialer map 1
- D. (config-if)# dialer-route 1

Answer: A

Explanation:

Once the above commands have been entered to enable DDR, then the last step required is to bind the traffic destination to an interface by linking the interesting traffic definition already created. This is done with the dialer-group command. In this case the proper command would be (config-if)# dialer-group 1.

Incorrect Answers:

B is incorrect; the interesting traffic was already identified the first time the dialer-list 1 command was used.

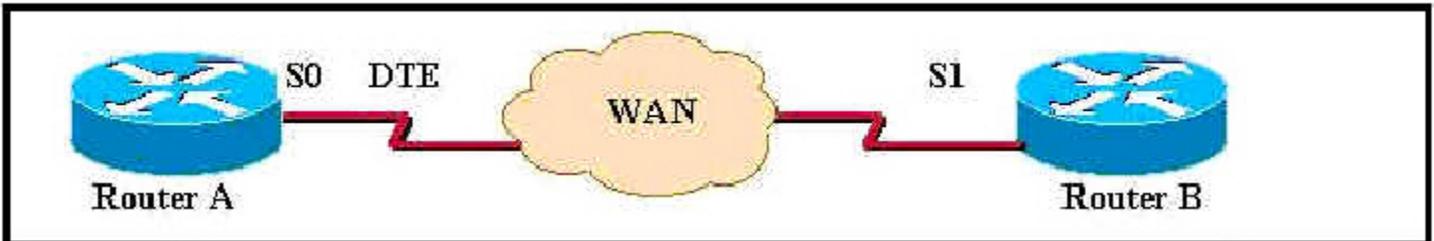
C is incorrect; the dialer map command is used to identify the router to be dialed. In this case this has already been done.

D is incorrect; there is no such thing as a dialer route command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 398-405.

Q. 6

Exhibit:



```
RouterA# show interface s0
Serial 0 is up, line protocol is down
  Hardware is HD64570
  Internet address 10.1.1.1
  Encapsulation HDLC, loopback not set, keepalive set (10sec)
```

Router A is connected to Router B, a non-Cisco router, through the network cloud. Using the command output shown what must be configured on Router A's interface s0 to change the line protocol from down to up?

- A. no shutdown
- B. encapsulation ppp
- C. interface serial point-to-point
- D. clock rate 56000

Answer: B

Explanation: To ensure that the line comes up the encapsulation type must be enabled. This is done with the encapsulation ppp command.

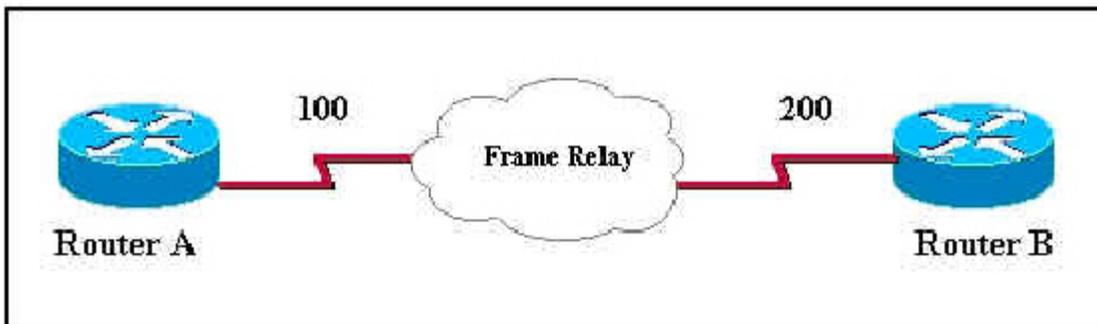
Incorrect Answers:

A is incorrect; the interface is already enable therefore this command in not required.

C is incorrect; the serial interface has already been created, this command would not solve the problem.

D is incorrect; this will only set the clock rate and not bring solve the problem.

Steve McQuerry. *Interconnecting Cisco Network Devices*. (Cisco Press: 2000) pages 381, 105, 432, and 407.

Q. 7**Exhibit:**

Which Frame Relay feature allows the point-to-point Frame Relay PVC between Router A and Router B to be identified at Router A as 100 and at Router B as 200?

- A. Locally significant DLCI
- B. Globally significant DLCI
- C. Locally significant LMI
- D. Globally significant LMI

Answer: A**Explanation:**

The DLCI (Data-Link Connection Identifier) is a number that identifies the logical circuit between the router and the Frame Relay switch. The Frame Relay switch maps the DLCIs between each pair of routers to create a PVC. DLCIs have local significance in that the identifier references the point between the local router and the Frame Relay switch, which it is connected.

Incorrect Answers:

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B is incorrect; as the DLCI are significant to just the two routers involved in the exchange of information it is not proper to refer to globally significant DLCI.

C is incorrect; locally significant LMI is not the answer. LMIs are responsible for managing the connection between the routers and not the assignment of numbers.

D is incorrect; globally significant LMI is not the answer. LMIs are responsible for managing the connection between the routers and not the assignment of numbers.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 414-416.

Q. 8

During encapsulation in which order is information packaged?

- A. Data, Packet, Segment, Frame
- B. Segment, Data, Packet, Frame
- C. Data, Segment, Packet, Frame
- D. Packet, Data, Segment, frame

Answer: C.

Explanation: Data encapsulation is a process in which information is wrapped in the data section of another protocol. In the OSI model each layer encapsulates the layer immediately above as the data flows down the protocol stack. The order of encapsulation is

- | | |
|-------------------------------------|---------|
| 1. Application/Presentation/Session | DATA |
| 2. Transport | SEGMENT |
| 3. Network | PACKET |
| 4. Data Link | FRAMES |
| 5. Physical | BITS |

Incorrect Answers:

A is incorrect; with Data, Packet, Segment, Frame; packet and segment are inverted.

B is incorrect; with Segment, Data, Packet, Frame; data and segment are inverted.

D is incorrect; with Packet, Data, Segment, frame; the only information package in the proper order is frame.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 13.

Q. 9

Exhibit:

```
Router# show ipx interface e0
Ethernet0 is up, line protocol is up
  IPX address is 6F2C.0000.0c5d.b36e, NOVELL_ETHER [up] line-up, RIPPQ:0, SAPPQ: 0
```

```

Delay of this IPX network, in ticks is 1 throughput 0 link delay 0
IPXWAN processing not enabled on this interface.
IPX SAP update interval is 1 minute(s)
IPX type 20 propagation packet forwarding is disabled
Incoming access list is not set
Outgoing access list is not set
IPX helper access list is not set
SAP GNS processing enabled, delay 0 ms, output filter list is not set
SAP Input filter list is not set
SAP Output filter list is not set
SAP Router filter list is not set
Input filter list is not set
Output filter list is not set
Router filter list is not set
Netbios Input host access list is not set
Netbios Input bytes access list is not set
Netbios Output host access list is not set
Netbios Outpus bytes access list is not set
Updates each 60 seconds, aging multiple RIP: 3 SAP: 3
SAP interpacket delay is 55 ms, maximum size is 480 bytes
RIP interpacket delay is 55 ms, maximum size is 432 bytes
IPX accounting is disabled
IPX fast switching is configured (enabled)
RIP packets received 0, RIP packets sent 1
SAP packets received 0, SAP packets sent 1

```

What is the Layer 2 address as shown in the output of the show ipx interface e0 command?

- A. 6F2C
- B. 0000.0c
- C. 5d.b35e
- D. 0c5d.b363
- E. 0000.0c5d.b363
- F. 6F2C.0000.0c5d.b363

Answer: E

Explanation:

An IPX address is composed of two parts: the network number and the node number. For IPX the node number is usually obtain from MAC address of the network interface. In this case the network number is 6F2C and the node number/MAC address is 0000.0c5d.b363

Incorrect Answers:

A is incorrect; 6F2C is the network number which is a layer 3 address.

B is incorrect; this only part of the MAC address thus incorrect.

C is incorrect; this only part of the MAC address thus incorrect.

D is incorrect; this only part of the MAC address thus incorrect.

F is incorrect; this is the IPX address. As stated previously this address is part layer 3 and part layer 2.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 332 and 345-6.

Q. 10

Which devices operate at all seven layers of the OSI model? (Choose three.)

- A. Network host
- B. Network management station
- C. Transceiver
- D. Bridge
- E. Web server
- F. Switch

Answer: A, B, E

Explanation: The three devices that operate at all seven layers of the OSI model are network hosts, network management station and web server. This is how these devices are able to perform their functions.

Incorrect Answers:

C is incorrect; a transceiver is not used in a network environment.

D is incorrect; a bridge is a Layer 2 device.

F is incorrect; a switch is a Layer 2 device.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 21-22.

Q. 11

With the hierarchical numbering of IP addresses what determines the portion of the address that will identify the network number?

- A. Subnet Mask
- B. Dots between octets
- C. Class of first octet
- D. Assignments of DHCP
- E. Address Resolution Protocol

Answer: C.

Explanation:

In general, IP addresses contain two fields: one for the network and another for host. Class A address have a range of 1 to 126 and the network portion of the IP address is restricted to the first eight bits (octet). Class B address have a range of 128 –191.255.0.0 and the network portion of the IP address is contain in the first 2 octets. Class C IP addresses has a range of 192.223.255.255.0 and the network portion of the IP addresses is the first three octets of the IP address. Class D addresses include the range of 224.0.0.0 to 239.255.255.255 and are used for multicast address. Class E addresses have a range of 240.0.0.0 to 247.255.255.255 and are reserved for experimental purposes.

Incorrect Answers:

A is incorrect; although the subnet mask is used by network devices to determine what part of the IP address is used for the network, the subnet and the host address but it is not part of the IP address hierarchy.

B is incorrect; the dots are used for making the IP address readable by humans, but have no determination of the network number.

D is incorrect; DHCP (Dynamic Host Configuration Protocol) provides a mechanism for allocating IP addresses dynamically so that addresses can be reused when hosts no longer need them.

E is incorrect; Address Resolution Protocol (ARP) determines the data link layer address of the destination devices for known destination IP addresses network number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 215-227.

Q. 12

At which OSI layer does data translation and code formatting occur?

- A. Physical
- B. Data link
- C. Network
- D. Transport
- E. Session
- F. Presentation

Answer: F

Explanation:

The presentation layer provides a variety of coding and conversion functions that are applied to application level data. These functions ensure that the data sent from the application layer of one system can be read the application layer of another system.

Incorrect Answers:

A is incorrect; the physical layer is what puts the actual data onto the wire.

B is incorrect; the data link layer is involved in converting bits into bytes, converting bytes into frames and with error detection.

C is incorrect; the network layer provides logical addressing so that routers can perform route determination.

C is incorrect; the transport layer provides delivery of the data and error correction prior to retransmit.

E is incorrect; the session layer is responsible for establishing, managing, and terminating communications sessions between presentation layer entities.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 11-12.

Q. 13

A packet is the protocol data unit for which layer of the OSI model?

- A. Data link
- B. Session
- C. Presentation
- D. Network
- E. Transport

Answer: D

Explanation:

The packet is the encapsulation type of the Network layer.

Incorrect Answers:

A is incorrect, the data unit of the data link layer is the frame.

B is incorrect; the session layer is not involved in the data encapsulation process.

C is incorrect; the presentation layer ensures that the receiving system can read the data and is not involved in encapsulation.

E is incorrect; the transport layer data unit is the segment.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 11-13.

Q. 14

What is the result of segmenting a network with a bridge?

- A. It increases the number of collision domains.
- B. It decreases the number of collision domains.
- C. It increases the number of broadcast domains.
- D. It decreases the number of broadcast domains.

Answer: A.

Explanation:

Bridge networks have the following characteristics: each segment has its own collision domain, all connected devices are part of the same broadcast domain, and all segments must have the same data link layer implementation.

Incorrect Answers:

B is incorrect; when a network is segmented by a bridge the collisions domains increase and not decrease.

C and D are incorrect; the addition of a bridge to a network has no effect on the number of domains.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 23-4.

Q. 15**Exhibit:**

```
Router#show interface serial 0
Serial0 is down, line protocol is down
  Hardware is HD64570
  Internet address is 172.22.5.1/30
  MTU 1500 bytes, BW 1544 Kbit, DLY 20000 usec, rely 255/255, load 1/255
  Encapsulation HDLC, loopback not set, keepalive set (10 sec)
  Last input never, output 00:03:11, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0 (size/max(drops): Total output drops: 0
  Queuing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max active/threshold/drops)
    Conversations 0/2/256 (active/max active/max total)
    Reserved Conversations 0/0 (allocated/max allocated)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
    11 packets output, 476 bytes, 0 underruns
    0 output errors, 0 collisions, 27 interface resets
    0 output buffer failures, 0 output buffers swapped out
    11 carrier transitions
  DCD=down   DSR=down   DTR=down   RTS=down   CTS=down
```

Based on the output of the show interface serial 0 command issued on a DTE router, which OSI layer is most likely source of the problem?

- A. Physical layer
- B. Data layer
- C. Network layer
- D. Transport layer

Answer: A

Explanation:

The key to answering this question is “Serial0 is down”. This indicates that the actual serial interface is down. Thus there is a problem with the physical layer.

Incorrect Answers:

B is incorrect; the exhibit does not indicate a problem with the data link layer.

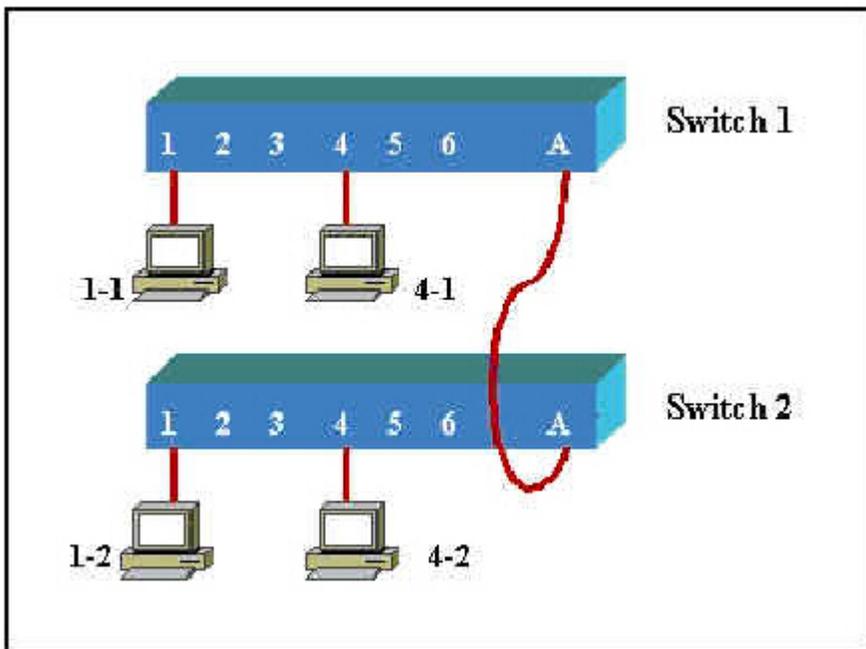
C is incorrect; the exhibit does not indicate a problem with the network layer.

D is incorrect; if the output just indicated that “line protocol is down” then there would be a problem with the line protocol. If this was the only problem then there would’ve been a problem with the transport layer.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 107-110.

Q. 16

Exhibit:



Given the network diagram, assume that ports 1 through 3 are assigned to VLAN1 and ports 4 through 6 are assigned to VLAN2 on each switch. The switches are interconnected over a trunked link.

Which of the following conditions would verify proper VLAN and trunk operation? (Choose three.)

- A. Host 1-1 can ping Host 1-2
- B. Host 1-1 can ping Host 4-2

- C. Host 1-1 can not ping Host 1-2
- D. Host 4-1 can not ping Host 1-2
- E. Host 4-1 can ping Host 4-2

Answer: A, B and E.

Explanation: If hosts from the different VLANs can ping each other then you can confirm the proper VLAN configuration and truck operation.

Incorrect Answers:

C is incorrect; if this occurred this would indicate a problem.

D is incorrect; if this occurred this would indicate a problem.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 191-193.

Q. 17

Which of the following statements are true regarding bridges and switches? (Choose three.)

- A. Switches are primarily software based while bridges are hardware based.
- B. Both bridges and switches forward Layer 2 broadcasts.
- C. Bridges are frequently faster than switches.
- D. Switches have a higher number of ports than most bridges.
- E. Bridges define broadcast domains while switches define collision domains.
- F. Both bridges and switches make forwarding decisions based on Layer 2 addresses.

Answer: B, D, F

Explanation: Switches and bridges are both Data Link layer devices and make their forwarding decision based on Layer 2 addresses. As a result they have a number of similar attributes. Switched have a higher port density.

Incorrect Answers:

A is incorrect; switches are hardware based.

C is incorrect; switches are most often faster than bridges.

E is incorrect; both define broadcast domains.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 21-22.

Q. 18

You need to add a new VLAN, named ACCOUNTS, to your switched network. Which of the following are true regarding configuration of this VLAN? (Choose three.)

- A. The VLAN must be created.

- B. The VLAN must be named.
- C. An IP address must be configured for the ACCOUNTS VLAN.
- D. The desired ports must be added to the new VLAN:
- E. The VLAN must be added to the STP domain.

Answer: A, B, D

Explanation: To add a VLAN there are a number of things that must be done. First it must be created, then named and assigned ports.

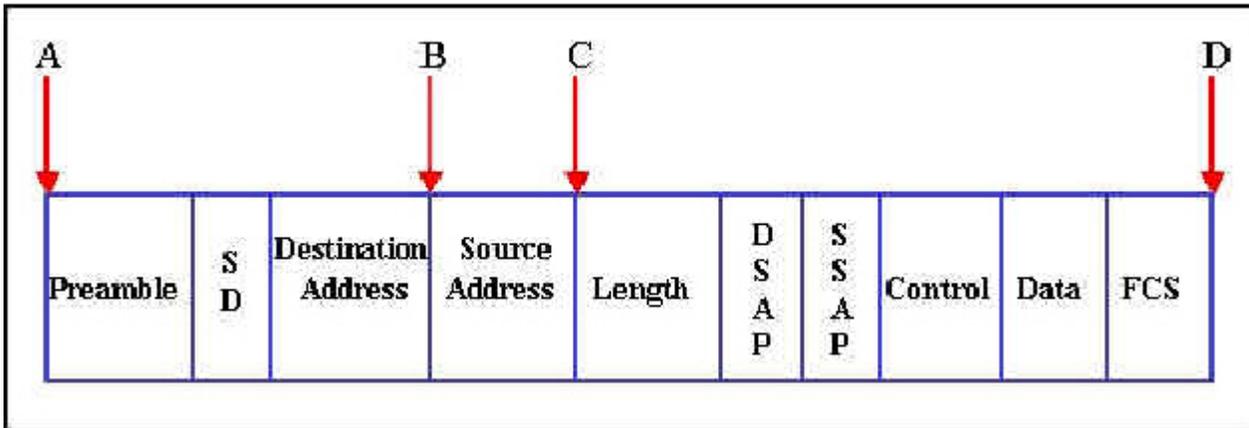
Incorrect Answers:

- C is incorrect; IP addresses do not need to be configured for VLANs.
- D is incorrect; the VLAN does not need to be added to the STP domain.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 195-199.

Q. 19

Exhibit:



At what point in the frame shown in the diagram is the store-and-forward switching decision made?

- A. A
- B. B
- C. C
- D. D

Answer: D

Explanation: When store-and-forward is employed the complete frame must be first received.

Incorrect Answers:

A is incorrect; in a switched environment the frame will not be immediately sent.

B is incorrect; this is the point at which the cut-through mode will start sending a frame.

C is incorrect; this is the point at which the fragment-free mode start sending a frame.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.

Q. 20

Which commands could be used at the command line interface to troubleshoot LAN connectivity problems on a router? (Choose three.)

- A. ping
- B. tracert
- C. ipconfig
- D. show ip route
- E. winipcfg
- F. show interfaces

Answer: A, D, F

Explanation: There are a number of commands that can be used to troubleshoot connectivity problems on a router. The ping command verifies connectivity, the show ip route command shows a great deal of information that is useful for troubleshooting connectivity, and the show interfaces command displays statistics for the network interfaces on the router.

Incorrect Answers:

B is incorrect; tracert is not a valid command. The Cisco command is trace.

C and E are incorrect; these are great Microsoft troubleshooting commands but they are not valid Cisco commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 124, 107-110, and 406-407.

Q. 21

What are the effects of sustained, heavy collisions in CSMA/CD LANs? (Choose three.)

- A. Increased broadcast traffic
- B. Delay
- C. Low throughput
- D. High throughput
- E. Congestion
- F. Higher bandwidth

Answer: B, C, E

Explanation: Whenever there is sustained high collision environment the results are longer delays, congestion and low throughput.

Incorrect Answers:

A is incorrect; this will not increase broadcast traffic.

D is incorrect; due to the collision the throughput will decrease.

F is incorrect; the bandwidth will not be effected.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 16-17.

Q. 22

Modem networks are often described as using 100Base-TX components. What is meant by the term 'Base' in this definition?

- A. It describes the signaling method for communication on the network.
- B. It refers to the type of media used in the network.
- C. It relates to the speed of transmission of network signals.
- D. It defines the allowable length of media that can be used.
- E. It defines half-duplex or full-duplex operation.

Answer: A

Explanation: There are two main signaling types: Baseband and Broadband.

Incorrect Answers:

B is incorrect; TX represents the media type. TX r= Cat 5 cable.

C is incorrect; the speed of the transmission is represented by the 100 (mbps).

D is incorrect; the maximum cable length for 100BaseTX is 100 m and is not represented in the standard name.

E is incorrect; 100BaseTX is for full-duplex operation. This cannot be interrupted from the name.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 45-48.

Q. 23

Which of the following are unique characteristics of half-duplex Ethernet as compared to full-duplex Ethernet? (Choose two.)

- A. Shared collision domain.
- B. Private collision domain
- C. Higher effective throughput
- D. Lower effective throughput
- E. Private broadcast domain

Answer: A, D

Explanation: Half-duplex Ethernet have a lower effective throughput due to shared collision domain the a full-duplex Ethernet.

Incorrect Answers:

- B is incorrect; the collision domain is shared not private.
- C is incorrect; half-duplex as a lower effective throughput.
- E is incorrect; it is a shared collision domain not a private broadcast domain.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 180-182.

Q. 24

From the DOS command prompt, you are able to ping a router but are unable to telnet it. What is the most likely cause of the problem?

- A. The PC has a bad network interface card.
- B. The IP address of the router is on a different subnet.
- C. No password has been set on the router vty lines.
- D. The default gateway is not set on the PC.
- E. The IP address of the workstation is incorrect.

Answer: C

Explanation: In order to telnet to a router a password must be set on the router's vty line.

Incorrect Answers:

- A is incorrect; you could not ping if there was a bad NIC.
- B is incorrect; telnet is design to allow remote connections.

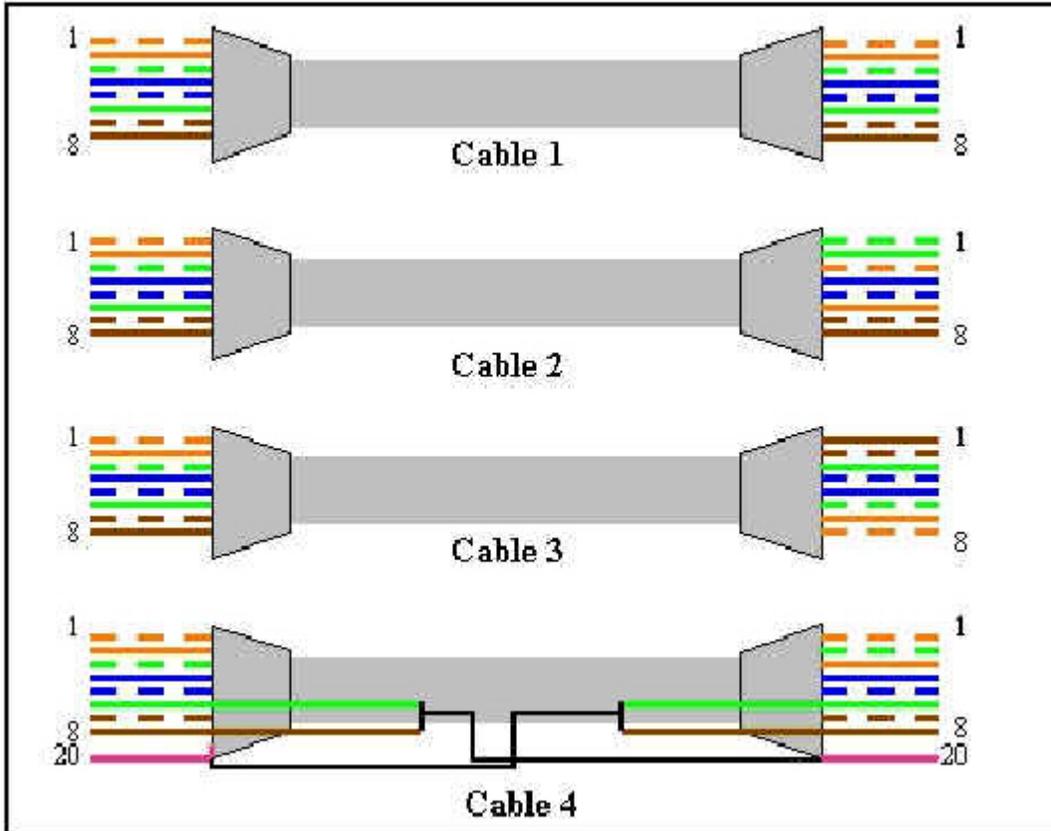
D is incorrect; there is no need to a default gateway to telnet

E is incorrect; you would not be able to ping id the IP address was wrong.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 103.

Q. 25

Exhibit:



Choose the correct cable to directly connect a router to another router over the Ethernet.

- A. Cable #1
- B. Cable #2
- C. Cable #3
- D. Cable #4

Answer: C

Explanation: A crossover cable must be used to connect similar devices. A crossover cable crosses the critical pairs in order to align, transmit, and receive signals.

Incorrect Answers:

A is incorrect; the critical pairs are not twisted.

B is incorrect; the critical pairs are not twisted.

D is incorrect; the critical pairs are not twisted.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 51.

Q. 26

Which two commands allow you to verify address configuration in your internetwork?

- A. Ping
- B. Trace
- C. Verify
- D. Test IP
- E. Echo IP
- F. Config IP

Answer: A, B

Explanation: The ping command will confirm connectivity and trace will determine the routes an outgoing packet will take.

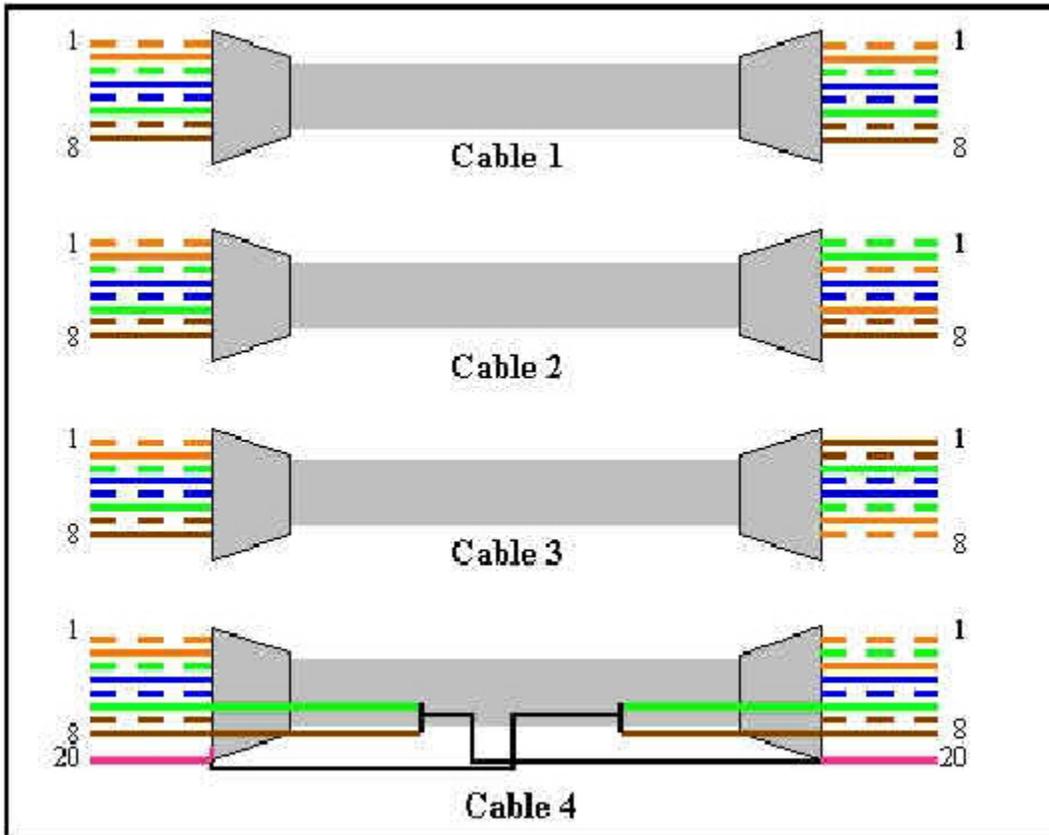
Incorrect Answers:

C – F are incorrect; these are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 124.

Q. 27

Exhibit:



Choose the correct cable to connect an Ethernet switch to another Ethernet switch.

- A. Cable #1
- B. Cable #2
- C. Cable #3
- D. Cable #4

Answer: C

Explanation: A crossover cable must be used to connect similar devices. A crossover cable crosses the critical pairs in order to align, transmit, and receive signals.

Incorrect Answers:

A is incorrect; the critical pairs are not twisted.

B is incorrect; the critical pairs are not twisted.

D is incorrect; the critical pairs are not twisted.

Steve McQuerry. *Interconnecting Cisco Network Devices*. (Cisco Press: 2000) page 51.

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Q. 28

Which command displays all routed protocols and the interfaces on which the protocol is enabled?

- A. show protocols
- B. show protocol brief
- C. show interfaces protocol
- D. show interfaces
- E. show routed
- F. show routed interfaces

Answer: D

Explanation: The show interfaces command displays statistics for all interfaces configured on the switch. This information is displayed by interface and includes the routing protocols.

Incorrect Answers:

A is incorrect; this is not a valid command.

B is incorrect; this is not a valid command.

C is incorrect; this is not a valid command.

E is incorrect; this is not a valid command.

F is incorrect; this is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 80-81.

Q. 29

If window size is changed from 3000 to 4000 during the data transfer stage of a TCP session, what can a sending host do?

- A. Transmit 3000 bytes before waiting for an acknowledgement.
- B. Transmit 4000 packets before waiting for an acknowledgement.
- C. Transmit 4000 bytes before waiting for an acknowledgement.
- D. Transmit 4000 segments before waiting for an acknowledgement.
- E. Transmit 3000 frames before waiting for an acknowledgement.
- F. Transmit 3000 packets before waiting for an acknowledgement.

Answer: C

Explanation: For TCP a window size is in bytes. When a window size increases the sending device can increase transmission to the new size. In this case the new size 4000 bytes.

Incorrect Answers:

A is incorrect; prior to the increase in bytes the old window size was 3000 bytes.

B is incorrect; window size is bytes not packets.

D is incorrect; window size is bytes not segments

E is incorrect; window size is bytes not frames.

F is incorrect; window size is bytes not packets.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 213-214.

Q. 30

Users on network 192.168.69.0/28 are complaining that they cannot access the corporate intranet server at www.inhouse.com. In troubleshooting this problem, you find that you are able to telnet a workstation on this network to the internal webserver via its IP address.

What is the likely cause of this problem?

- A. TCP/IP failure
- B. DNS failure
- C. FTP failure
- D. SNMP failure

Answer: B

Explanation: When you combined the fact that user cannot connect to the intranet with its domain but you can telnet to it using the IP address, there must be a problem with the DNS. DNS translates names into addresses.

Incorrect Answers:

A is incorrect; if there was a problem with TCP/IP then you would not have been able to Telnet to web server.

C is incorrect; a problem with FTP would not cause this problem.

D is incorrect; a SNMP failure would not cause this problem.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 239-240.

Q. 31

Given the network 199.141.27.0 with a subnet mask of 255.255.255.240, identify the valid host addresses. (Choose three.)

- A. 199.141.27.33
- B. 199.141.27.112
- C. 199.141.27.119
- D. 199.141.27.126

- E. 199.141.27.175
- F. 199.141.27.208

Answer: A, C, D

Explanation: When you base your calculations on the network address and the provided subnet mask the valid host addresses are 199.141.27.33, 199.141.27.119, and 199.141.27.126.

Incorrect Answers:

B, E and F are incorrect; these are not valid host addresses.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233-236.

Q. 32

The network 172.12.0.0 needs to be divided into subnets where each subnet has the capacity of 458 IP addresses. What would be the correct subnet mask to accomplish this division keeping the number of subnets at the maximum.

Type the correct value in each box below.

0	.	0	.	0	.	0
---	---	---	---	---	---	---

Answer:

255 . 255 . 254 . 0

Explanation: In order for a Class B IP, such as 172.12.0.0, to have 458 IP available on each subnet then a subnet mask of 255.255.254.0. This subnet mask provides for 126 subnets and 510 IPs.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 234.

Q. 33

Exhibit:

```
Router_B#show ip route
Codes: C-connected, S-static, I-IGRP, R-RIP, M-Mobile, B-BGP, D-EIGRP, EIGRP external,
       O-OSPF, IA-OSPF inter area, EI-OSPF external type 1, E2-OSPF external type 2, E-EGP,
       i-IS-IS, L1-IS-IS level-1, L2-IS-IS level-2, *-candidate default, U-per-user static route

Gateway of last resort is not set

R 192.168.8.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
C 192.168.9.0/24 is directly connected, Serial1
R 192.168.10.0/24 [120/7] via 192.168.9.1, 00:00:02, Serial1
R 192.168.11.0/24 [120/7] via 192.168.9.1, 00:00:03, Serial1
C 192.168.1.0/24 is directly connected, Ethernet0
C 192.168.2.0/24 is directly connected, Serial0
R 192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
R 192.168.4.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R 192.168.5.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R 192.168.6.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R 192.168.7.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
```

Which route will not be entered into the routing table of the receiving router?

- A. R 192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
- B. R 192.168.11.0/24 [120/7] via 192.168.9.1, 00:00:03, Serial1
- C. C 192.168.1.0/24 is directly connected, Ethernet0
- D. R 192.168.5.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0

Answer: D

Explanation: This route has the lowest metric of those listed and as such will not be shared with the neighbor.

Incorrect Answers:

- A is incorrect; this has the best metric thus it will be shared.
- B is incorrect; this route has a better metric therefore it will be shared.
- C is incorrect; this is a directly connected network thus it will be shared.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 258-260.

Q. 34

Given the following routing table entry, which of the following are used by default in the calculation of the number 1200? (Choose two.)

172.16.0.0 [100/1200] via 192.168.16.3, 00:00:55, Ethernet1

- A. MTU
- B. bandwidth
- C. administrative distance
- D. hop count
- E. metric
- F. delay

Answer: B, F

Explanation: By default, only bandwidth and delay are used by the IGRP metric. In this case the metric is 1200.

Incorrect Answers:

A is incorrect; MTU can be used but it is not a default.

C is incorrect; administrative distance is not used by IGRP.

D is incorrect; hop count is not used by IGRP.

E is incorrect; 1200 is the metric value.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 283-284.

Q. 35

Which method does a Cisco Catalyst switch use to identify the VLAN membership of a frame over trunked links?

- A. Frame filtering with VLAN ID
- B. Frame tagging with VLAN ID
- C. Frame filtering with trunk ID
- D. Frame tagging with trunk ID
- E. Frame filtering with VTP port ID

Answer: B

Explanation: One form of frame tagging that VLANs use is ISL tagging. The ISL tag includes the VLAN ID.

Incorrect Answers:

A, C and E are incorrect; frame filtering will not achieve the desired result.

D is incorrect; frame tagging does not include the trunk ID.

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) page 175.

Q. 36

A routing table contains static, RIP, and IGRP routes for the same destination network. Which route would normally be used to forward data?

- A. The IGRP route.
- B. The static route.
- C. The RIP route.
- D. All three will load balance.

Answer: B

Explanation: If there are several routing sources providing common routing information, an administrative distance value is used to rate the trustworthiness of each routing source. The lower the administrative distance the more trustworthy it is. Static routes have a default distance of 1, IGRP has a default distance of 100, and RIP has a default distance of 120.

Incorrect Answers:

A is incorrect; IGRP does not have the lowest administrative distance.

C is incorrect; RIP does not have the lowest administrative distance in fact it has the highest.

D is incorrect; as the administrative distance differ there can be no load balancing.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 256-258.

Q. 37

Which parameter must be supplied when initializing the IGRP routing process?

- A. connected network numbers
- B. IP address mask
- C. metric weights
- D. autonomous system number
- E. registered administrative id

Answer: D

Explanation: IGRP requires an autonomous system number. The autonomous system number must be entered directly after the router igrp command and before the network command.

Incorrect Answers:

A is incorrect; the network command is used to identify the directly connected networks but this is done after the autonomous system number.

B is incorrect; the IP address mask is not required.

C is incorrect; metric weights are not required.

E is incorrect; registered administrative id is not required.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 285.

Q. 38

Which of the following protocols utilizes features of both distance-vector and link-state routing?

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

Answer: C

Explanation: EIGRP is an example of a balanced hybrid routing protocol. It uses distance vectors with more accurate metrics to determine the best paths to destination networks. However, it differs from most distance vector protocols as it also has some features of link-state protocols.

Incorrect Answers:

A and D are incorrect; these are examples of distance vector routing protocol.

B is incorrect; OSPF is an example of a link-state routing protocol.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 275-276 and 259.

Q. 39

A host with a MAC address of 021f.2cfe.8322 is to be inserted into IPX network 4ad1.

Enter the IPX address for this host.

0	.	0	.	0	.	0
---	---	---	---	---	---	---

Answer:

41d1 . 021f . 2cfe . 8322

Explanation:

An IPX address is composed of two parts: the network number and the node number. For IPX the node number is usually obtain from MAC address of the network interface. In this case the network number is 4ad1 and the node number/MAC address is 021f.2cfe.8322. Thus the ipx address is 4ad1.021f.2cfe.8322.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 332-333.

Q. 40

Exhibit

```
RouterA(config)#router igrp 100
RouterA(config-router)#network 192.168.3.0
RouterA(config-router)#network 192.168.4.0
RouterA(config-router)#network 192.168.5.0
RouterA(config-router)#network 172.16.0.0
```

```
RouterB(config)#router igrp 101
RouterB(config-router)#network 192.168.3.0
RouterB(config-router)#network 192.168.6.0
RouterB(config-router)#network 192.168.7.0
```

Given the router configuration shown, which networks will be found in RouterB's routing table, assuming a properly configured network?

- A. 192.168.3.0
192.168.4.0
192.168.5.0
192.168.6.0
192.168.7.0
172.16.0.0
- B. 192.168.3.0
192.168.6.0
192.168.7.0
- C. 192.168.3.0
192.168.4.0
192.168.5.0
192.168.6.0

192.168.7.0

D. 172.16.0.0

E. 192.168.3.0

192.168.4.0

192.168.5.0

Answer: A

Explanation: IGRP routing table contains all directly connected networks and those learned by IGRP. As Router A and Router B share a directly connected network thus they will share routing tables.

Incorrect Answers:

B is incorrect; Router B's routing table will also contain the networks that are directly connected to Router A.

C is incorrect; the routing table will also contain 172.16.0.0.

D is incorrect; the routing table will also contain all of the associated 192.168.0.0.

E is incorrect; the routing table would also contain the other 192.168.0.0 IPs and the 172.16.0.0.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 288.

Q. 41

What are four benefits that can result from applying ISDN networking?(Choose four)

- A. Full time connectivity across the ISDN supported by Cisco IOS routing using dial on demand routing DDR.
- B. Small office and home office sites can be economically supported with ISDN basic rate interface BRI services.
- C. ISDN replaces signaling system ss7 in the public switch telephone network PSTN backbone.
- D. ISDN can be used as a backup service for a lease line connection between the remote and central offices.
- E. Modem racking and cabling can be eliminated by integration with digital modem cards on Cisco IOS network access servers NAS.

Answer: A, B, D, E

Explanation: When ISDN is implemented there are great deals of benefits. Among these benefits are higher speeds, ability to use DDR, reduce need for equipment, economic to deploy in medium size companies, and the ability to use other mediums as backup

Incorrect Answers:

C is incorrect; ISDN can be used on the existing telephone network without the need of signaling changes.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 387-400.

Q. 42

You are the network administrator of the Tasti-Treats Cereal Company. You receive a call from a user who is unable to reach a server at a remote site. After further review, you discover the following information:

Local PC – 10.0.3.35/24

Default gateway – 10.0.3.1

Remote server – 10.0.5.250/240

You then conduct the following tests from the offending local PC:

ping 127.0.0.1 – successful

ping 10.0.3.35 – successful

ping 10.0.3.1 – successful

ping 10.0.5.250 – unsuccessful

Which of the following problems would create the test results listed above?

- A. TCP/IP not correctly installed
- B. Local physical layer problem
- C. Local NIC not functioning
- D. Remote physical layer problem

Answer: D

Explanation: As the ping of the remote server was unsuccessful there is a problem with the remote physical layer problem.

Incorrect Answers:

A is incorrect; you would not be able to ping anything if TCP/IP was not correctly installed.

B is incorrect; you would not be able to ping the local IPs if there was a problem with the local physical layer.

C is incorrect; you would not be able to ping anything if the local NIC was not functioning.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 124.

Q. 43

Which command will provide you with information regarding the Layer 3 configuration of directly connected router interfaces?

- A. show ip interface
- B. show cdb neighbors
- C. show cdp neighbors detail
- D. show ip route
- E. show ip link status
- F. telnet

Answer: C

Explanation: The show cdp neighbors detail command displays information about neighboring devices. The information displayed includes Layer 3 protocol information and Neighbor Device ID. The show cdp entry command also results in the same information as the show cdp neighbors detail command.

Incorrect Answers:

A is incorrect; the show ip interface command display IP interface information and indicates whether any access list are set for a specific interface.

B is incorrect; the show cdp neighbors command displays such information as Neighbor Device ID and Local Interface but nothing on Layer 3 protocols.

D is incorrect; the show ip route command displays the contents of the ip routing table.

E is incorrect; this is not a valid command.

F is incorrect; the telnet command is used to establish a telnet command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 116-119, 324-324, 280, and 120.

Q. 44

Which command is used to display the placement and direction of an IP access control list on a router?

- A. show access-list
- B. show ip route
- C. show ip interface
- D. show interface
- E. show interface list

Answer: C

Explanation: The show ip interface command display IP interface information and indicates whether any access list are set for a specific interface and it also indicates if the access list is inbound or outbound.

Incorrect Answers:

A is incorrect; this is not a valid command.

B is incorrect; the show ip route command displays the contents of the ip routing table.
 D is incorrect; the show interface command displays the serial interface configuration.
 F is incorrect; this is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-325, 280, and 106

Q. 45

Which of the following commands applies to an access control list to a router interface?

- A. permit access-list 101 out
- B. ip access-groups 101 out
- C. apply access-list 101 out
- D. access-class 101 out
- E. ip access-list e0 out

Answer: B

Explanation: In order for an access list to be activated the ip-access group command must be used. This command activates the ip access list on an interface. Before you use the ip-access group command you must take care to ensure that you have configured an access list. If you do not the result will be permit any.

Incorrect Answers:

A, C-E are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 305.

Q. 46

Exhibit

```
Router#show access-list
Extended IP access list 105
    deny tcp any 172.30.24.64 0.0.0.63 eq smtp
    deny tcp any any eq telnet

Router#show ip interface e0
Ethernet0 is up, line protocol is up
  Internet address is 172.17.9.60/24
  Broad address is 255.255.255.255
  Address determined by setup command
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is enabled
  Outgoing access list is 105
  Inbound access list is not set
  Proxy ARP is enabled
```

```
Security level is default
Split horizon is enabled

Rest of configuration omitted.
```

What is the result of applying the access-list to Ethernet 0?

- A. Only e-mail and telnet access will be permitted out of Ethernet 0.
- B. All hosts on the 172.30.24.64 network will be permitted e-mail and telnet access.
- C. All TCP protocols will be permitted out of Ethernet 0 except e-mail and telnet.
- D. All IP traffic out of Ethernet 0 will be denied.
- E. The access-list is numbered incorrectly and will fail.

Answer: D

Explanation: The exhibit is showing an extended IP access-list configuration. For this access list to have the desired effect it will require a permit statement at the end as there is an implicit deny statement otherwise. The statement should be: access-list 105 permit ip any any.

Incorrect Answers:

A, B and C are incorrect; all traffic out will be denied without a permit statement.
E is incorrect; the access-list is correctly numbered.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 310-320.

Q. 47

Which of the following are not true of standard half-duplex Ethernet circuitry?

- A. It is alternate one-way communication.
- B. The receive (RX) is wired directly to the transmit (TX) of the remote station.
- C. The receive (TX) is wired directly to the receive (RX) of the remote station.
- D. Collisions are not possible.
- E. Both stations can transmit simultaneously.

Answer: A

Explanation: Half-duplex is a form of one-way communication. On half duplex circuitry if communication does occur in both directions then collisions will result.

Incorrect Answers:

B, C, D and E are all true statements in relations to standard half-duplex Ethernet circuitry.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 163-165.

Q. 48

Which of the following are true regarding passwords on a Cisco router?

- A. All passwords can be encrypted.
- B. All passwords can be entered using the set-up dialogue.
- C. A password can be set before a user can enter the privileged mode.
- D. A password can be set for individual lines.
- E. TACACS or Radius password authentication can be used.

Answer: A, C, D, E

Explanation: In general enabled passwords are not encrypted but with the service password-encryption command all passwords are encrypted. Passwords are entered in the privileged mode and they can be set for individual lines. In addition TACAS or Radius password authentication can also be used.

Incorrect Answers:

B is incorrect; the set-up dialogue box can only be used to enter some passwords.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 102-103.

Q. 49

What is the maximum number of subnets that can be assigned to networks when using the address 172.16.0.0 with a subnet mask of 255.255.240.0? (Assume older version UNIX workstations are in use.)

- A. 16
- B. 32
- C. 30
- D. 14
- E. It is an invalid subnet mask for the Network

Answer: D

Explanation: 172.16.0.0 is a Class B IP address. With a subnet mask of 255.255.240.0 they maximum number of subnets are 14 and 4094 hosts.

Incorrect Answers:

A is incorrect; 16 is not a valid maximum number of subnets for a Class B IP address.

B is incorrect; 32 is not a valid maximum number of subnets for a Class B IP address.

D is incorrect; for a maximum number of subnets to be 30 the subnet mask would need to be 255.255.248.0.

E is incorrect; 255.255.240.0 is a valid subnet mask.

Q. 50

What is the maximum length of the fast Ethernet cable 100BaseTx standard?

- A. 10 m
- B. 50 m
- C. 100 m
- D. 1000 m

Answer: C

Explanation: The 100BaseTx maximum cable length is 100 m.

Incorrect Answers:

A and B are incorrect; neither 10 m nor 50 m are maximum cable lengths.

F is incorrect; this is the maximum length of fiber optic.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 45-46.

Q. 51

Which of the following are true?

- A. The default is to send debug output to the console screen.
- B. To view debug output from a telnet session, the "terminal monitor" command must be used.
- C. If the "logging buffered" command is used, the debug output would be sent to RAM and can be viewed with the "show log" command.
- D. If the "no console logging" command were configured, output would be sent to a telnet session.
- E. All of the above.

Answer: E

Explanation: Debug is one of the most powerful diagnostics tools to troubleshoot a router. By default the output goes to the console screen. User might or might not be interested in seeing the messages as they occur. The console port always receives syslog messages. When a user telnets to the router, however, no syslog messages are seen unless the user issues the terminal monitor command. Another alternative for viewing syslog messages is to have the IOS record the syslog messages in a buffer in RAM, and then use the show logging command to display the messages. For telnet users, having the messages buffered using the global config command logging buffered is particularly useful. The no console logging command were configured, output would be sent to a telnet session.

Incorrect Answers:

A, B, C and D are partially correct individually.

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) pages 33.

Q. 52

What is a benefit of a virtual LAN (VLAN)?

- A. It increases the number of broadcast domains.
- B. It decreases the number of broadcast domains.
- C. It increases the number of collision domains.
- D. It decreases the number of collision domains.
- E. Since it is a virtual interface, it never shuts down.

Answer: A

Explanation: A VLAN is a logical broadcast domain that can span multiple physical LAN segments. A VLAN can be designed to provide independent broadcast domains for stations logically segmented by function, project teams, or application without regard to the physical location of the users. Due to this the number of broadcast domains increase.

Incorrect Answers:

B is incorrect; the broadcast domains actually increase not decrease.

C is incorrect; there is no direct effect on collision domains.

D is incorrect; there is no direct effect on collision domains.

E is incorrect; virtual interfaces can be shut down.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 179-184.

Q. 53

IP RIP routing is configured on a router, but all interfaces attach to RIP network. What should you use to prevent all RIP routing updates from being sent through selected interfaces without using access lists?

- A. Passive route
- B. Default routes
- C. Passive interface
- D. Route update filtering

Answer: C

Explanation: The passive interface command will prevent the sending of RIP updates.

Incorrect Answers:

A is incorrect; passive routes as used with IGRP and not RIP.

B is incorrect; default/static routes will not prevent RIP updates.

D is incorrect; filtering is most often achieved on a router with an access list.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 254-282.

Q. 54

What are two characteristics of the RARP protocol? (Choose two.)

- A. It generates parameter problem messages.
- B. It maps IP addresses to Ethernet addresses.
- C. It maps Ethernet addresses to IP addresses.
- D. It is implemented directly on top of the data link layer.

Answer: C, D

Explanation: Reverse Address Resolution Protocol (RARP) is another protocol defined at the IP layer. RARP is used by workstations that do not know their own IP address when they come up. RARP allows workstations to send out a request for its own IP by sending its own Layer 2 MAC address to a waiting RARP server. ARP and RARP are implemented directly on top of the data link layer.

Incorrect Answers:

A is incorrect; RARP determine IPs based on MAC addresses.

B is incorrect; ARP maps IP addresses to MAC addresses.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 218-220.

Q. 55

What must you do to test connectivity on a dial-on-demand routing (DDR) link?

- A. Increase the idle timeout parameter.
- B. Send interesting traffic across the link.
- C. Reboot one of the Integrated Services Digital Network (ISDN) routers.
- D. Reset the DDR Integrated Services Digital Network (ISDN) router statistics to zero.

Answer: B

Explanation:

Of the options provided above the best way to determine if there is connectivity on a dial-on-demand routing link is to send interesting traffic across the link. If there is connectivity a link will be initiated and established to send the interesting traffic. If there is no connectivity then the link will not be established.

Incorrect Answers:

A is incorrect; increasing the idle time parameter will only result in increasing the idle time.

C is incorrect; rebooting the router will only result in the router going through its post.

D is incorrect; this action will not confirm whether a DDR has connectivity or not.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 397-407.

Q.56

Which element is used to define the rate, in bits per second, that a Frame Relay switch agrees to transfer data?

- A. Clock rate (CR).
- B. Committed Information Rate (CIR)
- C. Local management interface (LMI)
- D. Data-link connection identifier (DLCI)
- E. Committed Rate Measurement Interval (CRMI)

Answer: B

Explanation: CIR is the rate, in bits per second, at which the service provider states that data will be transferred.

Incorrect Answers:

A is incorrect; clock rate is the transmission medium speed, which is determined by modem clocking.

C is incorrect; LMI is a signaling standard between the router device and the Frame Relay switch that is responsible for managing the connection and maintaining the status between the devices.

D is incorrect; DLCI is addressing used to identify virtual circuits.

E is incorrect; this is the sampling period used in controlling CIR, but is not the rate itself.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 413-414.

Q. 57

Which term describes the process in which frames from one network system are placed inside the frames of another network system?

- A. bridging
- B. tunneling
- C. data-link control
- D. generic routing
- E. packet switching

Answer: B

Explanation: Tunneling is the process whereby a router encapsulates one Layer 3 protocol inside another protocol (typically IP) for transport across a network to another router. The receiving router de-encapsulates the packet, leaving the original packet.

Incorrect Answers:

A is incorrect; bridging occurs within the same collision domain.

C is incorrect; data link control has nothing to do within communication between networks.

D is incorrect; generic routing is not the Cisco term used for communication between networks.

E is incorrect; packet switching refers to WAN communication.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 12-14.

Q. 58

What is the protocol and what is the purpose of the following address?

238.255.255.255

- A. IPX; a SAP broadcast
- B. IP; a multicast address
- C. IP; a reserved address
- D. IP; a directed broadcast
- E. IPX; a flooded broadcast

Answer: B

Explanation: Class D addresses (multicast addresses) include the following range of network numbers: 224.0.0.0 to 239.255.255.255. 238.255.255.255 is within this range.

Incorrect Answers:

A is incorrect; this is not an IPX address.

C is incorrect; Class E addresses (research addresses and sometimes called reserved) include the following range of network numbers: 240.0.0.0 to 247.255.255.255.

D is incorrect; an IP directed broadcast would include the first 3 octets of the IP address and 255 would replace the fourth octet.

F is incorrect; this is not an IPX address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 223-224.

Q. 59

Given the configuration example:

```

interface ethernet0
ipx network 4a
ipx access-group 800 out
interface ethernet1
ipx network 3d
interface ethernet2
ipx network tc
access-list 800 permit 3d 4a

```

Which two actions result from implementing this configuration? (Choose two.)

- A. IPX network 5c will not receive any traffic.
- B. Traffic from network 3d for network 4a will be forwarded out e0.
- C. Traffic from network 3d for network 3d will be forwarded out e0.
- D. Traffic from network 3d, destined for network 4a, will be forwarded out e2.
- E. The access list is applied to an outgoing interface and filters outbound traffic.

Answer: D, E

Explanation:

The key commands for this question are “ipx access-group 800 out” and “access-list 800 permit 3d 4a”. The first command identifies the access list as an outbound access list. In the command “access-list 800 permit 3d 4a” the first network, 3d, is source network number and the second network, 4a, is the destination network.

Incorrect Answers:

A is incorrect; there is no reference to network 5c in this question.

B is incorrect; traffic from 3d to 4a will not transit e0.

C is incorrect; network 3d would not need the access list to send traffic within itself.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 353-354.

Q. 60

Which show interface serial 1 status statement indicates that the shutdown command was issued on that interface?

- A. Serial 1 is up, line protocol is up.
- B. Serial 1 is up, line protocol is down.
- C. Serial 1 is down, line protocol is down.
- D. Serial 1 is administratively down, the line protocol is down.

Answer: D

Explanation: The shutdown command administratively disables an interface. The result is the interface will be down as will the line protocol. It will end calls in progress.

Incorrect Answers:

A is incorrect; the statement shows that the interface and the protocols are both up. This would not be the case if the shutdown command were used.

B is incorrect; this statement shows that the line is up but the line protocol is down.

C is incorrect; the line would be administratively down if the shutdown command had been used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 107, 406-407.

Q. 61

In which three situations is a hold-down timer reset? (Choose three.)

- A. When the hold-down timer expires.
- B. When infinity is finally defined as some maximum number.
- C. When the router exchanges update summaries at area borders.
- D. When the router detect faulty LSPs propagating through the internetwork.
- E. When another update is received indicating a new route with a better metric.
- F. When another update is received indicating the original route to the network has been restored.
- G. When the router receives a processing task proportional to the number of links in the internetwork.

Answer: A, E, F

Explanation: Holddown timers work as follows:

1. When a router receives an update from a neighbor indicating that a previously accessible network is now in accessible, the router marks the route as inaccessible and starts the holddown timer.
2. If an update arrives from the neighboring router with a better metric than originally recorded for the network, the router marks the network as accessible and removes the holddown timer.
3. If at any time before the holddown timer expires an update is received from a different neighboring router with a poorer metric, the update is ignored. Ignoring an update with a poorer metric when the holddown is in effect allows more time for the knowledge to change to propagate through the network.
4. During the holddown period, routes appear in the routing table as "possible down".

Routers remain in holddown until one of the following events occurs: the holddown expires; another update is received indicating a new route with a better metric; and a flush timer, which is the time a route would be held before being removed, removes the route from the routing table.

Incorrect answers:

B, C, D and G are incorrect; none of these situations will remove a holddown timer.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 269-273.

Q. 62

Which two statements about IP RIP are true? (Choose two.)

- A. It limits hop counts to 31.
- B. It is a link-state routing protocol.
- C. It uses autonomous system numbers.
- D. It is capable of load sharing over multiple paths.
- E. It uses bandwidth as the metric for path selection.
- F. It broadcasts updates every 30 seconds by defaults

Answer: D, F

Explanation: Key characteristics of RIP include the following: it is a distance vector protocol, hop count is used as the metric for path selection, maximum allowable hop count is 15, broadcast routing updates every 30 seconds, RIP can be load balanced over as many as 6 equal cost paths, RIP 1 requires a major classful network number to advertise and RIP 2 use VLSMs.

Incorrect answers:

- A is incorrect; RIP's maximum allowable hop count is 15.
- B is incorrect; RIP is a distance vector protocol.
- C is incorrect; it uses network numbers/VLSMs.
- E is incorrect; hop count is used as the metric for path selection.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 278.

Q. 63

How does inter-VLAN communication take place?

- A. It takes place through any Cisco router.
- B. It takes place through a Cisco router than can run ISL.
- C. It takes place through a router, but this disables all the router's Security and filtering functionality for the VLANs.
- D. For nonroutable protocols, (e.g., NetBEUI) the router provides communications between VLAN domains.
- E. Inter-VLAN communications is not possible because each VLAN is a separate broadcast domain.

Answer: B

Explanation: In a switched environment, packets are switched only between ports designated to be within the same “broadcast domain”. VLANs perform network portioning and traffic separation at Layer 2. So, inter-VLAN communication cannot occur without a Layer 3 device such as a router, because network layer (Layer 3) devices are responsible for communicating between multiple broadcast domains. Note that, at Layer 2, an interface uses ISL to communicate with a switch.

Incorrect Answers:

A is incorrect; the router requires ISL.

C is incorrect; the router does not change the security settings.

D is incorrect; the router will not route a nonroutable protocol into the VLAN.

E is incorrect; without a router inter-VLAN communication is impossible.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 241-244.

Q. 64

What are four ways that Fast Ethernet compares to 10BaseT Ethernet? (Choose four.)

- A. Fast Ethernet uses the Same Maximum Transmission Unit (MTU).
- B. Fast Ethernet is based on an extension to the IEEE 802.3 specification.
- C. Fast Ethernet uses the same Media Access control (MAC mechanisms).
- D. Fast Ethernet preserves the frame format that is used by 10BaseT Ethernet.
- E. Fast Ethernet offers a speed increase one hundred times that of the 10BaseT Ethernet.

Answer: A, B, C, and D.

Explanation: Fast Ethernet shares a great deal of similarities with 10BaseT Ethernet. These similarities are the same MTU, same MAC mechanism and frame format. Fast Ethernet is based on IEE 820.3u, which is an extension to IEE 820.3.

Incorrect Answers:

E is incorrect; its speed 10 times faster, not 100 times.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 44-45.

Q. 65

Which configuration mode and command combination sets the bandwidth metric of a Frame Relay connection?

- A. router(Config)# clock rate 56
- B. router(Config-if)# bandwidth 56

- C. router(Config)# bandwidth 56000
- D. router(Config-if)# clock rate 56000

Answer: B

Explanation: The bandwidth command overrides the default bandwidth. The bandwidth has no effect on the actual speed of the line. Instead, it is used to compute routing metrics and the load of the link. Bandwidth is expressed in Kilobits. It is specified during interface configuration.

Incorrect Answers:

A is incorrect; the clock rate command is used to set the bandwidth on DCE cable not a Frame Relay connection that must not be abbreviated plus it must be used in the interface configuration mode.

C is incorrect; to change bandwidth of an interface you must be in the interface configuration mode and the rate must be expressed kilobits per second.

D is incorrect; the clock rate command is used to set the bandwidth on DCE cable not a Frame Relay connection.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 104-106.

Q. 66

What are the two primary operating modes for frame switching? (Choose two)

- A. Full duplex
- B. Half duplex
- C. CSMA/CD
- D. Cut through
- E. Fragmentation
- F. Store and forward

Answer: D, F

Explanation: There are 3 primary operating modes that are used for frame switching. These modes are store-and-forward, cut-through and fragment free. When store-and-forward is used the switch must receive the whole frame before it can be forwarded. During a cut-through operation, the switch forwards the frame once it receives the Destination Address. Finally, the fragment-free mode reads the first 64 bytes before forwarding the frame.

Incorrect Answers:

A and B are incorrect; these are transmission modes of whether the transmission is done one way at a time (half Duplex) or simultaneous two-way (Full Duplex).

C is incorrect; this is a physical transmission medium, typically used in Ethernet LANs.

E is incorrect; there is a fragment-free mode not a fragment mode.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.

Q. 67

In order to enable RIP which two tasks need to be performed? (Choose two)

- A. Specify the routing protocol.
- B. Configure static Rip routes.
- C. Specify directly connected subnets.
- D. Specify directly connected networks.

Answer: A, D

Explanation: In enable a router with RIP it takes two basic steps: select the routing protocol and identify the networks that the router is directly connected to. These steps are achieved with the commands router rip and network.

Incorrect Answers:

B is incorrect; there is no such thing as a static RIP route.

C is incorrect; with RIP you specify the directly connected networks, not the directly subnets.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 278-279.

Q. 68

A router on one side of a PPP link uses the host name RTR1 and the password CORP1-PWD. Which configuration line on RTR1 enables the connection between RTR1 and other router named RTR2?

- A. Username RTR2 password CORP1-PWD
- B. Username RTR1 password CORP1-PWD
- C. Username RTR2 password CORP2-PWD
- D. Username RTR1 password CORP2-PWD

Answer: A

Explanation: We specify the username of the peer router with the password of the host router.

Incorrect Answers:

B, C and D are incorrect; the username needs to be the peer router, and the password needs to be the password of the hosting router.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 380-382.

Q. 69

Which two statements about a bridge are true. (Choose two)

- A. A bridge floods multicasts.
- B. A bridge floods broadcasts.
- C. A bridge does not flood multicasts.
- D. A bridge does not flood broadcasts.

Answer: A, B

Explanation: A bridge must send all multicasts and broadcast to all ports, since there is only one broadcast domain.

Incorrect Answers:

C and D are incorrect, because a bridge DOES flood broadcasts and multicats.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 22.

Q. 70

What is the protocol and what is the second part of the following network addresses 172.16.0.254 , mask=255.255.0.0?

- A. IPX:MAC addresses.
- B. IP:classC directed broadcast.
- C. Private IP address:node number
- D. Public IP addresses:directed broadcast.
- E. Private IP addresses directed broadcast.

Answer: C

Explanation: The Class B network of 172.16 is a Class B Private Address Range, and the second part (0.254) is the host address, or node number/address.

Incorrect Answers:

A is incorrect; the address is an IP address format.

B is incorrect; the question is a Class B address, if it were Class C, the mask would be 255.255.255.0

D is incorrect; 172.16 is not a public IP address.

E is incorrect; 0.254 is not a broadcast address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 234-236.

Q. 71

Which statement about an IP network is true?

- A. A broadcast source MAC contains all zeros.
- B. A MAC address is part of the physical layer of the OSI model.
- C. MAC addresses are used by bridges to make forwarding decisions: IP addresses are used by routers.
- D. IP addresses are now a flat addressing scheme: MAC addresses use a hierarchical addressing scheme.

Answer: C

Explanation: A bridge uses MAC addresses to make routing decisions whereas a routers uses IP addresses to makes its routing decisions.

Incorrect Answers:

A is incorrect; for broadcasts MAC uses the address is all ones, or X'FF' for each octet.

B is incorrect; the MAC address is part of the Data Link Layer.

D is incorrect; it is reversed. MAC is Flat Addressing, and IP is hierarchical.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 170-173.

Q. 72

Which statement about the Committed Information Rate (CIR) is true?

- A. It is the rate, in bits per second, at which the Frame Relay switch agrees to transfer data
- B. It is the clock speed (port speed) of the connection (local loop) to the Frame Relay cloud
- C. It is the maximum number of bits that the switch can transfer during any Committed Rate Measurement Interval
- D. It is a signaling standard between the CPE device and the FR switch. It is responsible for managing the connection and maintaining status between the devices.

Answer: A

Explanation: CIR is the rate in bits per second at which the service provided guarantees that data will be transferred.

Incorrect Answers:

B is incorrect; clock rate defines the clock speed.

C is incorrect; CIR can be exceeded.

D is incorrect; CIR is not a signaling standard.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 414.

Q. 73

Which statement about the specialized IP addresses shown in the EXHIBIT is true?

EXHIBIT:

10.0.0.0 to 10.255.255.255

172.16.0.0 to 172.31.255.255

192.168.0.0 to 192.168.255.255

- A. They are private IP addresses.
- B. They can not be leased with DHCP.
- C. They are allocated for VOL PVOLP.
- D. They represent IP classless addresses.
- E. They are used by the inter NIC for administration.

Answer: A

Explanation: RFC 1918 defines networks and addresses 10.0.0.0 through 10.255.255.255, 172.16.0.0 through 172.31.255.255, and 192.168.0.0 through 192.168.25.255 as reserved addresses to be used as internal private addresses and not to connect directly to the public Internet.

Incorrect Answers:

B is incorrect; they can be leased by DHCP.

C is incorrect; they are not allocated for VOL PVOLP.

D is incorrect; these range of addresses still retain their implied class.

E is incorrect; inter NIC does not use these IPs for administration.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 224.

Q. 74

What are four function/characteristics of the network layer of the OSI model? (Choose four)

- A. It uses a two-part address.
- B. It maintains routing tables.
- C. It uses broadcast addresses.
- D. It establishes network addresses.
- E. It provides access to the LAN media.
- F. It provides media independence for upper layers.
- G. It provides path selection for Internet work communication.

Answer: A, B, C, G

Explanation:

The network layer defined how to transport traffic between devices that are not locally attached in the same broadcast domain. For the communication the device will require two pieces of information: a logical address associated with the source and destination stations and a path through the network to reach the desired destination. Both of the required information is stored in the devices routing table. The addresses within the routing table are considered to be a logical network address that contains two parts: one part that identifies the network and another part that uniquely identifies the host on each of those networks. If the address of the destination device is unknown to the device it will broadcast the packet to the remaining interfaces.

Incorrect Answers:

D is incorrect; the network layer does not establish addresses rather it uses the addresses to route information.

E is incorrect; the physical layer provides access to media.

F is incorrect; the data link layer provides media independence for upper layers.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 24-6.

Q. 75

What is the result of segmenting a network with a router into segments 1 and 2?

- A. It increases the number of collisions.
- B. It decreases the number of broadcast domains.
- C. It connects segment one's broadcast to segment two.
- D. It prevents segment one's broadcast from getting to segment two.

Answer: D

Explanation: The broadcast domains are broken up and separated.

Incorrect Answers:

A is incorrect; the number of collisions is decreased.

B is incorrect; the number of broadcast domains is increased.

C is incorrect; the broadcast domains are broken up and separated.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 26-27.

Q. 76

Which three basic switch functions increase available bandwidth on the network? (Choose three)

- A. Loop avoidance.
- B. Address learning
- C. Hop count limiting
- D. Broadcast filtering
- E. Packet forward/filtering.

Answer: A, B, E

Explanation: A switch has three basic functions, which increase the available bandwidth on a network. These functions are address learning, forward/filter decision, and loop avoidance,

Incorrect Answers:

C is incorrect; although a switch functions a lot like a multi-port bridge, a switch does not affect – nor is affected by – the hop count.

D is incorrect; by their very design Broadcast are meant to be seen by everyone.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 146-152.

Q. 77

Which statement is true?

- A. While bridges are used to segment networks they will not isolate broadcast or multicast packets.
- B. A bridge looks at every packet with in its network segment and works like a hub, re-broadcasting the packet if the destination is with in its network segment.
- C. A bridge maintains a table of the IP addresses of the hosts with in its network segment and forwards the packet directly to the destination based upon the IP address.
- D. Bridge resets the hop count by keeping all packets within the network segment only packets addressed to its specific destination host outside the network segment are allowed to pass through the bridge.

Answer: A

Explanation: Bridges (and switches) maintain only one broadcast domain.

Incorrect Answers:

B is incorrect; if the data does not need to be transferred by the bridge, then it does not need to be rebroadcasted.

C is incorrect; a bridge operates on layer 2 using MAC addresses, and IP addresses are Layer 3.

D is incorrect; the hop count is not reset.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 21-24.

Q. 78

What is not a characteristic of a network segment on a switch?

- A. The segment has its own collision domain.
- B. The segment can translate from one media to a different media.
- C. All devices in the segment are part of the same broadcast domain.

- D. One device per segment can currently send frames to the switch.

Answer: B

Explanation: A switch is usually only handle one media type at a time.

Incorrect Answers:

A, C and D are incorrect; the statements are characteristics of a network segment on a switch.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 78-80.

Q. 79

Which three are typical operational phases in a basic connection oriented network service? (Choose three)

- A. Call setup
- B. Data transfer
- C. Load Balancing
- D. Call termination
- E. Call prioritization
- F. Data segmentation
- G. Data link identification

Answer: A, B, D

Explanation:

In connection oriented services, the three steps are: Call Setup, Data Transfer, Call Termination.

Incorrect Options

C, E, F and G are incorrect; these options may occur but are not required.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 29-30.

Q. 80

What is a function of a reliable transport layer connections.

- A. Route selection
- B. Acknowledgement
- C. Session checkpoints
- D. System authentication

Answer: B

Explanation: Acknowledgement is required to insure packets were not loss and this is how a reliable transport layer connection is maintained.

Incorrect Answers:

A is incorrect; route selection is performed by the network layer.

C and D are incorrect; these are not transport layer functions.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 28-30.

Q. 81

Using the TCP/IP suite a message is sent from host A to a destination IP address on the same LAN. How does host A determine the destination's MAC address?

- A. It uses a Proxy ARP.
- B. It uses ARP requests.
- C. It uses RARP requests.
- D. It uses router look up table.

Answer: B

Explanation: Address Resolution Protocol is used to resolve or map a known destination IP address to a MAC sublayer address to allow communication.

Incorrect Answers:

A is incorrect; Proxy ARP is most often used with hosts on separate subnets.

C is incorrect; Reverse ARP is used to resolve an IP address on a given MAC address.

D is incorrect; a router's table is not used for this.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 218-220.

Q. 82

Which three statements about common elements of the TCP/IP protocol stack are true? (Choose three)

- A. IP provides connection less service and routing capabilities.
- B. ARP enables devices to locate the IP address of local devices.
- C. UDP provides simple connection less service without windowing or acknowledgements.
- D. ICMP provides connection oriented management data to routers and layer three switches.
- E. TCP enables devices to send large quantities of data using switching in a connection-oriented manner.

Answer: A, C, E

Explanation: The TCP/IP protocol stack is very similar to the OSI model protocol stack. With TCP/IP connection orientated and connection less communication is possible. Both IP and UDP are both connectionless. TCP is a connection-orientated protocol.

Incorrect Answers:

B is incorrect; RARP and not ARP provide this functionality.

D is incorrect; ICMP is connection less.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 215-218.

Q. 83

What is the two most common request/reply pair with ICMP messages when using the ping command? (Choose two)

- A. Echo reply
- B. Echo request
- C. Source quench
- D. Fragment offset
- E. Information redirect
- F. Destination reachable
- G. Echo control message

Answer: A and B.

Explanation: The most common form of these messages are pings, ICMP echo request, and ICMP echo replies.

Incorrect Answers:

C, D, E, F, and G are incorrect; these are not types of ICMP messages.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 217-219.

Q. 84

Which two protocol tools use ICMP? (Choose two)

- A. Ping
- B. Telnet
- C. Configure
- D. Trace route
- E. Show commands
- F. Standard access list

Answer: A, D

Explanation: The two protocol tools that use ICMP messages to perform their function are ping and trace route.

Incorrect Answers:

B is incorrect; telnet uses TCP.

C is incorrect; configure is not a protocol tool.

E and F are incorrect; they are not part of ICMP, nor do they use ICMP.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 217-218.

Q. 85

Which command successfully ping an individual IP address?

- A. Router>ping 192.5.5.0
- B. Router# ping 192.5.5.30
- C. Router> ping 192.5.5.256
- D. Router# ping 192.5.5.255

Answer: B

Explanation: In order to ping an individual IP address you must be in the privileged EXEC mode.

Incorrect Answers:

A is incorrect; to ping you must be in the privileged EXEC mode not the user EXEC mode.

C is incorrect; to ping you must be in the privileged EXEC mode not the user EXEC mode.

D is incorrect; this is not a valid individual IP address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 69 and 123-124.

Q. 86

Your network uses a class C address of 210.10.10.0 you must now split up the network into separate subnets to handle multiple buildings separated by router. Which two steps must you take to determine the proper subnet mask for your network? (Choose two)

- A. Determine the number of separate networks required.
- B. Determine how many devices will require DHCP addressing.
- C. Determine the maximum number of host that will be on each subnet.
- D. Determine the minimum number of host that will be on each subnet.
- E. Determine which router will be the IP default gateway for each subnet.

Answer: A, C

Explanation: Whenever a network is going to be divided by a router a number of factors needs to be considered when selecting a subnet mask. Two factors that need to be considered is the number of networks that you require and the maximum number of host each subnet will require.

Incorrect Answers:

B is incorrect; DHCP addressing is not relevant in the subnet mask design.

D is incorrect; since the number of hosts has to satisfy ALL of the subnets, we must accommodate the subnet with the highest number of hosts, so we need the maximums of each, and then take the largest of all the maximums.

E is incorrect; this task may need to be done but this task has nothing to do with designing the new subnet mask.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 235-237.

Q. 87

How many collisions are caused by transmitting and receiving frames simultaneously in a full-duplex Ethernet Technology?

- A. One
- B. Two
- C. None
- D. Several

Answer: C

Explanation: Full Duplex requires one and only one device to be hooked up to a switch port, and each switch port is a separate collision domain. Since there is no contention (the node has exclusive control of the segment) there are no collisions.

A, B and D are incorrect; it is impossible for collision to occur within a full duplex network.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 163-165.

Q. 88

Which Cisco IOS command should you use to display the Novel IPX address assignments on a router?

- A. Show IPX addresses.
- B. Show IPX interface.
- C. IPX network <number>
- D. Display IPX addresses
- E. Show IPX routing details

Answer: B**Explanation:**

The show ipx interface command shows the status of the IPS interface and IPS parameters configured on each interface. This includes the IPX address.

Incorrect Answers:

A is incorrect; there is no such command as show ipx addresses.

C is incorrect; the ipx network command is used to enable IPX routing on a particular interface. The <number> parameter is used to identify the network that IPX is enabled on.

D is incorrect; whenever you want to display something on a Cisco interface you use a show command. There is no such command as display ipx addresses.

E is incorrect; there is no such command as show ipx routing details. To show the contents of a routing table you would use the show ipx route command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 345-347.

Q. 89**Which commands should you use to enable IGRP routing?**

- A. router igrp 100
network 192.168.1.0
network 10.0.0.0
- B. router igrp 100
network 192.168.1.0
network 10.2.0.0
- C. router igrp 100
network 192.168.1.0 192.168.1.1
network 10.2.0.0 10.2.1.1
- D. router igrp 100
network 192.168.1.0 255.255.255.0
network 10.2.0.0 255.255.0.0

Answer: A

Explanation: To enable IGRP you use the router igrp and network commands. Please note an autonomous system number must follow the router igrp command and a valid network number must follow the network command. For RIP and IGRP network numbers must be a major class network number and does not include neither subnet numbers nor individual addresses.

Incorrect Answers:

B is incorrect; the number 10.2.0.0 is the problem for this option

C is incorrect; each network identified must have its own network command.

D is incorrect; this is not correct as there is no need to use the subnet mask for the networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 277, 285-286.

Q. 90

Which show command should you use to view Frame Relay local management interface (LMI) traffic statistics?

- A. show lmi
- B. show ip route
- C. show interface
- D. show statistics
- E. show frame-relay lmi

Answer: E

Explanation: The show frame-relay lmi command displays lmi statistics. An example of one of these statistics is the number of status messages sent between the local router and the Frame Relay switch.

Incorrect Answers:

A is incorrect; show lmi is not a valid command.

B is incorrect; show ip route command displays the contents of the IP routing table.

C is incorrect; show interface command displays a serial interface configuration

D is incorrect; show statistics is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 422-423, 280, and 106.

Q. 91

Which command specifies a second subinterface on serial interface zero?

- A. interface s 0.2 point - to point
- B. interface 2 s 0 point to point
- C. sub interface 2 s 0 point to point
- D. interface 0 sub 2 point to point
- E. interface s 0.1 point to point sub 2

Answer: A

Explanation: The proper syntax for configuring a second subinterface is interface 0.2 point-to-point. Option A is the closest to this command. The syntax after the command interface is serial interface number (0 in this case).subinterface number (2 in this case) and this followed by the either multipoint or point-to-point.

Incorrect Answers:

B is incorrect; remember that the syntax is suppose to be number.subinterface number and that there is suppose to be two hyphens in point -to-point.

C is incorrect; the command is interface not subinterface.

D is incorrect; the two numbers are broken by a period and not the word sub.

E is incorrect; this is not the proper syntax. Remember the interface and subinterface are identified by number.subintreface number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

Q. 92

Which three tasks are required to configure a dial on demand routing (DDR) Basic Rate Interface (BRI) connection? (Choose three)

- A. Define static routes.
- B. Configure the dialer information.
- C. Specify interesting traffic that can enable the link.
- D. Define DDR password to exchange when the link comes up.

Answer: A, B, C

Explanation:

To configure standard DDR, the following steps are required:

1. Define static routes – What route do I take to get to the destination?
2. Specify interesting traffic – What traffic type should enable the link?
3. Configure the dialer information – What number do I call to get to the next hop router, and what service parameters do I use to call?

Incorrect Answers:

D is incorrect; defining a DDR password is not required.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 400-403.

Q. 93

Which two statements accurately define IP addressing rules? (Choose Two)

- A. IP multicast addresses start with 240
- B. A host portion of all 1's indicates a network broadcast
- C. The value of zero (0) in the host portion means "all hosts" on the network
- D. IP addresses are four octets long and contain a network portion and a host portion

Answer: B, D

Explanation: IP addresses contain 4 octets. IP addresses contain two parts: one to identify the network and the other to determine the host. Which octet identifies what is dependant on the class of the IP address. When a message is to be flooded the IP address contain all 1s.

Incorrect Answers:

A is incorrect; multicast broadcasts of range of IPs is 224-239t. 240 begins the range of reserved (Class E) addresses.

C is incorrect; to flood a message to all host of a network, the IP address would contain the network identification and then all 1s (represented by 255) in the host portion of an IP.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 222-232.

Q. 94

Which three statements about Frame Relay configuration using sub interfaces are true? (Choose three)

- A. Each subinterface is configured either multi point or point to point.
- B. Any network address must be removed from the physical interface.
- C. The configuration of subinterfaces is done in router Config-(if)# mode.
- D. Frame relay encapsulation must be configured on each sub interface.

Answer: A, B, C

Explanation: When configuring Frame Relay at the sub interface there are a number of points that you be kept in mind. To configure subinterfaces on a physical interface, do the following:

1. Select the interface you want to create subinterfaces on, enter interface configuration mode, (config-if)#.
2. It is recommended that you remove any network layer address assigned to the physical interface and assign the network layer address to the subinterface.
3. Configure Frame Relay encapsulation on the physical interface.
4. Identify the subinterface as either multipoint or point-to-point.

Incorrect Answers:

D is incorrect; the encapsulation type must be done on the physical interface.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

Q. 95

What is the bandwidth capacity of an ISDN B channel?

- A. 16 Kbps
- B. 64 Kbps
- C. 128 Kbps
- D. 512 Kbps
- E. 1.54 Mbps

Answer: B

Explanation:

The Bearer (B) channel transfer rate is 64 kbps.

Incorrect Answers:

A is incorrect; is the Delta (D) channel that has a transfer rate of 16 kbps.

C, D and E are incorrect; the ISDN B channel only operates at a maximum of 64 kbps.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 387-388.

Q. 96

Which command should you use to create an IP standard access list?

- A. Access-list standard 172.16.4.13
- B. Access-list 1 deny 172.16.4.13 0.0.0.0
- C. Access-list 100 deny 172.16.4.13 0.0.0.0
- D. Access-list 198 deny 172.16.4.13 255.255.255.255

Answer: B

Explanation: A standard access list is in the range of 1-99 and the proper command syntax is access-list {access-list number} {permit or deny} {test conditions}. In this case the test condition is an ip address.

Incorrect Answers:

A is incorrect; the access command must contain a number and whether the action is to be permitted or denied.

C is incorrect; 100 is an extended access-list number and not a standard number.

D is incorrect; 198 is also an extended access-list number and not a standard number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 304-305.

Q. 97

Which router command allows you to determine if an IP access list is enabled on a particular interface?

- A. Router# show ip interface
- B. Router> show access-list
- C. Router# show ip access-list
- D. Router> show interface ip access-list

Answer: A

Explanation: The show ip interface command displays IP interface information and indicates whether any access lists are set for a specific interface.

Incorrect Answers:

B is incorrect; the show access-lists command must be given in the privileged EXEC mode.

C is incorrect; even if the proper command was used the end result would be the displaying of all IP access lists running in the router, not for a particular interface.

D is incorrect; this is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-325.

Q. 98

Which router command allows you to view the entire contents of all access lists?

- A. Router# show interface
- B. Router> show IP interface
- C. Router# show access-list
- D. Router> show all access list

Answer: C

Explanation: The show access-lists command will display the contents of all access lists. C is the closest to this command.

Incorrect Answers:

A is incorrect; only access lists bound to that interface would be displayed

B is incorrect; show ip interface command must be given in the privilege EXEC mode.

D is incorrect; this is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-325.

Q. 99

Which statement about Ethernet networks is true?

- A. The advantage of a full duplex is the ability to transmit data over Mbase2 cable.
- B. Full duplex Ethernet requires a point-to-point connection when only two nodes are present.
- C. Ethernet switches can use full duplex mode to connect multiple nodes to a single port of a switch.
- D. Half duplex is a cut through packet processing method that is very fast with little error correction, full duplex is store and forward method that is slower but has better error correction.

Answer: B

Explanation: Full duplex always requires there to be a point to point connection.

Incorrect Answers:

A is incorrect; full duplex is done over CAT 5 cable.

C is incorrect; full duplex can only be done if one node is attached to a particular port.

D is incorrect; Half/Full duplex is independent of cut-through and/or store and forward.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 165.

Q. 100

On a network design project you determine that a new testing application requires multiple hosts. These hosts must be capable of sharing data between each host and an enterprise server at 10 Mbps bandwidth. Other divisions in the company use applications that require less than 2 Mbps bandwidth of the enterprise serve.

What is your economical recommendation?

- A. That the existing 10BaseT hub be replaced with 100BaseT hub to improve overall performance.
- B. That a router can separate the testing application from the rest of the network thus allowing the testing application more bandwidth.
- C. That the switch be installed so that enterprise server can be provided a 100 Mbps port and each of the testing application hosts can be given dedicated 10 Mbps ports.
- D. That a bridge be placed between the enterprise server and all other users with the exception of the testing application.

Answer: C

Explanation: With buffering in the switch, the enterprise server can serve multiple hosts at almost full capacity, since the 100Mbps port will be faster than the rest of the users totaled as a whole.

Incorrect Answers:

A is incorrect; this would require all NICs to be upgraded, and result in a large collision domain with possible poor performance.

B is incorrect; a router would become a bottleneck, and not allow efficient performance.

D is incorrect; a bridge would be a bottleneck, and not be able to provide the necessary performance and throughput.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 31-38.

Q. 101

A network is very congested. Currently all the devices are connected through a hub. Which solution would best decrease congestion on the network?

- A. Add a second hub
- B. Replace the hub with a router.
- C. Replace the hub with a switch.
- D. Replace the hub with a repeater.

Answer: B

Explanation: A router would break each segment into their own collision domains and broadcast domains. This would reduce network congestion the most.

Incorrect Answers:

A is incorrect; there will still be one collision domain which would mean that the network would still be congested.

C is incorrect; if money were a factor in your solution to network congestion then this would be the best option.

D is incorrect; a repeater does not affect congestion.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 20-27.

Q. 102

What is the distance limitation for 100BaseT?

- A. 607 ft
- B. 25 meters
- C. 1000 ft
- D. 100 meters
- E. 185 meters

Answer: D

Explanation: A 100BaseT cable cannot be any longer than 100 meters.

Incorrect Answers:

A, B, C, & E are wrong.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 45.

Q. 103

Which command sets the clock rate to 56 Kbps on serial0?

- A. clockrate 56
- B. clock rate 56
- C. clockrate 56000
- D. clock rate 56000
- E. set clockrate 56
- F. serial 10 clockrate 56
- G. clock rate 56000 serial 10

Answer: D

Explanation: The proper syntax to set the clock rate is clock rate {speed}. Please remember the speed cannot be abbreviated.

Incorrect Answers:

A and C are incorrect; clock rate must be separated.

B is incorrect; the speed cannot be abbreviated and must be 56000.

E, F and G are incorrect; these are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 105-106.

Q. 104

If you are in IOS user mode which command do you use to enter the privileged mode?

- A. Set
- B. Enable
- C. Configure
- D. Privileges

Answer: B

Explanation: To change from the user EXEC mode to the privileged EXEC mode the command is enable.

Incorrect Answers:

A is incorrect; the command set must be followed by another parameter such as user and the set command cannot be used to get into the privileged mode

C is incorrect; configure is used in privileged mode, but does not ENTER that mode.

D is incorrect; this is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 69-70.

Q. 105

In the setup dialogue what do the square brackets indicate?

- A. Current or default settings.
- B. Hard coded values that cannot be modified.
- C. Values entered by the administrator but not saved.
- D. Values that must be returned to NVRAM before becoming enabled.

Answer: A

Explanation: When in the setup dialog box the default/current settings are in the square brackets.

Incorrect Answers:

B, C, and D; the square brackets represent current or default settings.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 85.

Q. 106

Routers that have flash memory typically have preloaded copy of Cisco IOS software. Which command should you use to make backup copy of the software image onto a network server?

- A. Copy Flash TFTP
- B. Save Copy TFTP
- C. Write Backup TFTP
- D. Write Backup (server-name)
- E. Copy backup 2 (server-name)

Answer: A

Explanation: The proper command to save the IOS image is copy flash tftp. This will copy the IOS onto a tftp server.

Incorrect Answers:

B is incorrect; there is no save command. With Cisco to save something you most often copy it.

C and D are incorrect; there is no Write command.

E is incorrect; this is not a valid command combination.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 138-139.

Q. 107

Which command retrieves the configuration file from NVRAM?

- A. Config NVRAM
- B. Copy NVRAM running-config
- C. Copy startup-config running-config
- D. Copy running-config startup-config

Answer: C

Explanation: To copy the IOS image in the NVRAM to the RAM the copy startup-config running-config command is used.

Incorrect Answers:

A is incorrect; this is not a valid command combination.

B is incorrect; this is not a valid command combination.

D is incorrect; this actually copies the IOS image from the RAM to the NVRAM which is the exact opposite of what the question asked.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 133.

Q. 108

Which command allows the user to see a system message when logging into a router?

- A. Banner MOTD
- B. Message MOTD
- C. Banner Message
- D. Message Banner

Answer: A

Explanation: In order for a user to see a message when the log into a router a message of the day will need to be employed. The command to do this is banner motd.

Incorrect Answers:

B is incorrect; the command is banner not message.

C is incorrect; the proper parameter is motd not message.

D is incorrect; this is an invalid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 101-102.

Q. 109

Which line from a show spantree 1 command output indicates that virtual LAN1 (VLAN1) is functioning properly?

- A. Root port is fast Ethernet 0/26
- B. Port Ethernet 0/1 of VLAN is forwarding
- C. Designated port is Ethernet 0/1, path cost 10
- D. Designated root has priority 0 address 00D0.588F.B600
- E. VLAN is executing the IEEE compatible spanning tree protocol.

Answer: E

Explanation: To determine if the VLAN is functioning properly on will need to examine the first line of the output. That is, VLAN is executing the IEEE compatible spanning tree protocol.

Incorrect Answers:

A is incorrect; this line indicates what the switch thinks is the root port.

B is incorrect; this line indicates which port is forwarding.

C is incorrect; this line indicates the designated port and its associated cost.

D is incorrect; this line indicated the MAC address of the designated root.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 199-200.

Q. 110

What is the most common Layer 2 device?

- A. Hub
- B. Router
- C. Switch
- D. Repeater

Answer: C

Explanation: Switches and Bridges run on Layer 2.

Incorrect Answers:

A and D are incorrect; they are Layer 1 – Physical Layer devices

B is incorrect; routers are layer 3 device.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 14-24.

Q. 111

Which encapsulation type should be used for the S0 port of Router R2?

- A. SAP
- B. HDLC
- C. ARP
- D. NOVELLEETHER

Answer: B

Explanation: Actually we can answer this question using the exhibit in the following example. Router R2 S0 connects to Router R1 S0. Router R1 S0 uses HDLC, and BOTH sides must run the same protocol in order to communicate (it is like talking the same language; you can't have one side English and the other Side French).

So the correct answer is B – HDLC.

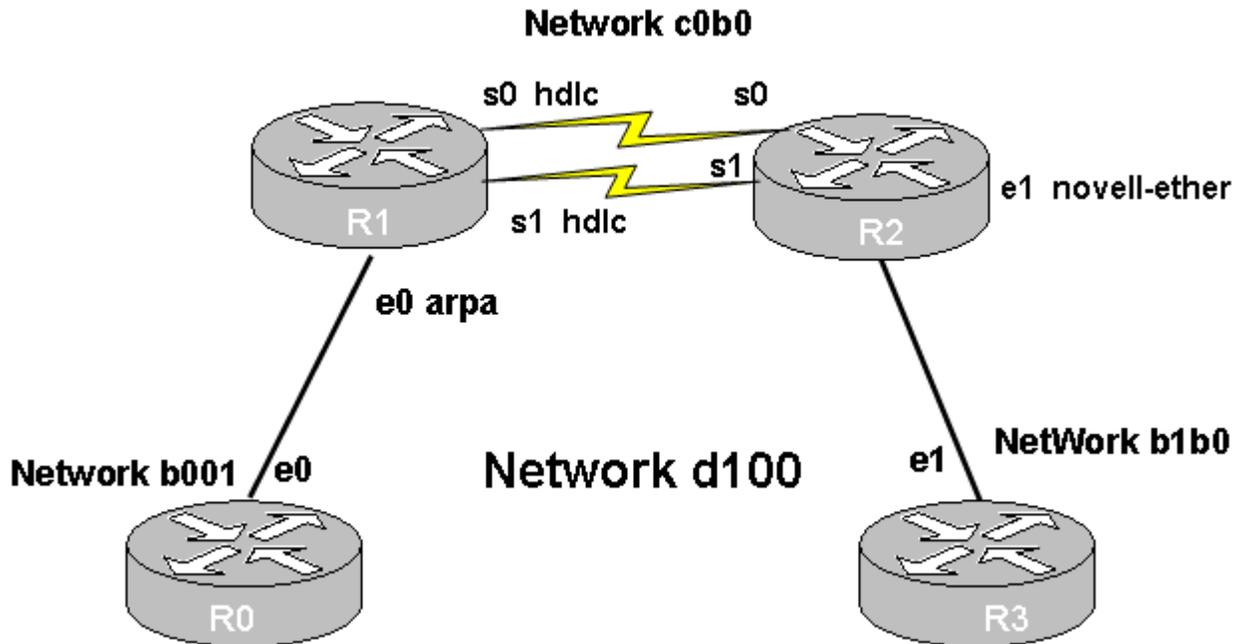
Incorrect answers:

A, B and C are incorrect; the two routers must have the same encapsulation type to communicate properly thus these encapsulation types could not be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 368-373.

Q. 111

Exhibit



Which command specifies a second sub interface on serial interface 0?

- A. Interface s0.2 point-to-point
- B. Interface 2s0 point-to-point
- C. Subinterface 2s 0 point-to-point
- D. Interface s0 sub2 point-to-point
- E. Interface s0.1 point-to-point sub2

Answer: A

Explanation: The proper syntax for configuring a second subinterface is interface 0.2 point-to-point. Option A is the closest to this command. The syntax after the command interface is serial interface number (0 in this case).subinterface number (2 in this case) and this followed by the either multipoint or point-to-point.

Incorrect Answers:

B is incorrect; remember that the syntax is suppose to be number.subinterface number and that there is suppose to be two hyphens in point -to-point.

C is incorrect; the command is interface not subinterface.

D is incorrect; the two numbers are broken by a period and not the word sub.

E is incorrect; this is not the proper syntax. Remember the interface and subinterface are identified by number.subintreface number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

Q. 113

Which statement should you use to deny FTP access only from Network 210.93.105.0 to Network 223.8.151.0?

- A. Access-list one deny 210.93.105.0.0.0.0.0 any eq ftp access-list one permit any.
- B. Access-list 100 deny tcp 210.93.105.0 0.0.0.255 223.8.151.0 0.0.0.255 eq ftp
- C. Access-list 100 deny ip 223.8.151.0 0.0.0.255 any eq ftp
Access-list 100 permit ip any any
- D. Access-list 100 deny tcp 210.93.105.0 0.0.0.255 223.8.151.0 0.0.0.255 eq ftp
Access-list 100 permit ip any any

Answer: D

Explanation: Great care must be taken whenever an access list is configured as there is an assumption of deny all when they do not match the access list. The proper command for configuring an extended access to deny ftp traffic is: access-list 100 deny tcp source address destination address eq FTP. When configured this way the access list will deny ftp traffic and permit all other.

Incorrect Answers:

A is incorrect; the entire statement has syntax problems. You use a number, not a word (one) for the access list, and the access list for this problem needs to be an extended address list in the range of 100-199.

B is incorrect; this access list will deny access, but then any non-match falls through and will be denied.

C is incorrect; this access list denies access from 223.8.151.0 to anywhere else – this is not what the problem asked. 223.8.151.0 is supposed to be the destination, not the source.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 318-320.

Q. 114

Which network mask should you place on a class C address to accommodate a user requirement of two sub networks with a maximum of 35 hosts on each network?

- A. 255.255.255.192
- B. 255.255.255.224
- C. 255.255.255.240
- D. 255.255.255.248

Answer: A

Explanation: For the networks, we need 2 bits. We must really accommodate for networks, because when we subnet the formula is $2^{*n} - 2$. For 35 hosts, we need a minimum of 37 hosts for the same reason, $2^{*n} - 2$. We round 37 up to the next power of 2, which is 64, and we need 6 bits for the host. We use $2+6=8$ bits.

When we look at the bit locations, the first two bits of the fourth octet will be $128+64=192$. Thus the subnet mask will be 255.255.255.192. Since there is no room to adjust the allocation, everything fits fully into 8 bits, none of the other subnet masks will provide this combination.

Incorrect Answers:

B, C and D are incorrect; these subnet mask provide too many networks and not enough host addresses.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 225-228 and 236.

Q. 115

What are two purposes of segmenting a network with a bridge? (Choose two)

- A. To reduce collisions.
- B. To increase collisions.
- C. To add collision domains.
- D. To reduce collision domains.
- E. To have more broadcast domains.

Answer: A, C

Explanation: When you segment a network with a bridge you are reducing the number of collisions by creating another collision domain.

Incorrect Answers:

B is incorrect; a bridge decreases collisions, not increases collisions.

D is incorrect; Collision domains are increased, not decreased.

E is incorrect; there is still one and only one broadcast domain.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 21-24.

Q. 116

What is an advantage of using a connectionless protocol such as UDP?

- A. Packet acknowledgement may reduce overhead traffic.
- B. Loss or duplication of data packets is less likely to occur.
- C. Packets are not acknowledged which reduces overhead traffic.
- D. The application relies on the transport layer for sequencing of the data packets.

Answer: C

Explanation: Connectionless protocols have many advantages. One of the main advantages is that there is a reduction in overhead traffic, as acknowledgments are not sent. This does, though, increase the likelihood of a lost packet.

Incorrect Answers:

A is incorrect; there is no packet acknowledgement in UDP.

B is incorrect; this is the opposite, UDP does not guarantee against packet loss.

D is incorrect; UDP does not expect packet ordering.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 29-30.

Q. 117

Which statement is true when a broadcast is sent in an Ethernet/802.3 LAN?

- A. The IP subnet used is 255.255.255.0
- B. The IP address used is 255.255.255.255
- C. The MAC address used is 00-00-00-00-00-00
- D. The MAC address used is FF-FF-FF-FF-FF-FF.

Answer: D

Explanation: The MAC address for a broadcast is FF-FF-FF-FF-FF-FF.

Incorrect Answers:

A and B are incorrect; these are IP addresses and 802.3 uses MAC addresses.

C is incorrect; this is the address used for a multicast.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 149-152.

Q. 118

What are two components of an IPX address?

- A. Network number; IP address.
- B. MAC address; node number.
- C. Network number; MAC address.
- D. Network number; subnet number.

Answer: C

Explanation:

An IPX address is composed of two parts: the network number and the node number. For IPX the node number is usually obtain from MAC address of the network interface.

Incorrect Answers:

A is incorrect; an ipx address does contain the network number but it does not contain an IP address.

B is incorrect; the MAC address and node number are most often the same thing.

D is incorrect; the ipx address does not contain the subnet number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 332-333.

Q. 119

Which two statements about integrated services digital network (ISDN) are true?

(Choose two)

- A. ISDN provides only data only capability.
- B. ISDN provides an integrated voice/data capability.
- C. The ISDN standards define the hardware and call setup schemes for end-to-end digital connectivity.
- D. Users receive more bandwidth on WANs with a leased line of 56kbps than with multiple b channels.

Answer: B, C

Explanation:

ISDN stands for Integrated Services Digital Network. ISDN refers to a collection of standards that define a digital architecture that provides an intergraded voice/data capability to customers' premises facility. The ISDN standards define the hardware and call setup schemes for end-to-end digital connectivity.

Incorrect Answers:

A is incorrect; ISDN provides for voice and data capability.

D is incorrect; ISDN BRI offers a total of 144 kbps and ISDN PRI offers even more.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 390.

Q. 120

Which prompt and command combination sets RIP as the routing protocol?

- A. Router# rip.
- B. Router rip.
- C. Router (Config)# rip.
- D. Router (Config)# router rip.

Answer: D

Explanation: In order to configure RIP as the routing protocol you need to ensure that you are in the route configuration mode and that you use the command router rip.

- A is incorrect; this is both the wrong mode and command.
- B is incorrect; this is both the wrong mode and command.
- C is incorrect; this is the proper mode but the wrong command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 277-279.

Q. 121

What are 4 ways network management can be simplified by using the virtual LANs (VLANs)? (Choose four)

- A. VLANs allow you to implement multiple layers switching easily.
- B. VLAN can group several broadcasts domains into multiple logical subnets.
- C. It is no longer necessary to install cables to move a user from a new network to another.
- D. Network adds, moves and changes are achieved by configuring a port into a VLAN.
- E. A group of users needing high security can be put into a VLAN so that no users outside the VLANs can communicate with them.
- F. As a logical grouping of users, VLANs can be considered independent from their physical or geographic locations.

Answer: C, D, E, F

Explanation: The introduction of VLANs into a network has a number of benefits. The benefits include: security, segmentation and flexibility. VLANs allow you to group users into a common broadcast domain regardless of their physical location in the internetwork. VLANs greater flexibility allows user to moved easily, changes to the network can be as simple as configuring a port and security can be increased.

Incorrect Answers:

- A is incorrect; VLANs add complexity to the switch configurations.
- B is incorrect; the VLAN still maintains one broadcast domain in each VLAN

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 179-184.

Q. 122

With one method of transmitting frames through a switch the switch receives the complete frame and checks the frame CRC before forwarding the frame. What is this transmitting method called?

- A. CSMA/CD
- B. Full duplex.
- C. Cut through.
- D. Half duplex.
- E. Fragmentation.

F. Stored and forwarded.

Answer: F

Explanation: In store and forward mode, the switch must receive the complete frame before forwarding takes place. The destination and source addresses are read, the cyclic redundancy check (CRC) is performed, relevant filters are applied, and the frame is forwarded. If the CRC is bad, the frame is discarded. The latency (or delay) through the switch varies with frame length.

Incorrect Answers:

A is incorrect; CSMA/CD is the physical method used on a 802.3 LAN

B is incorrect; Full duplex is when you can transmit and receive at the same time.

C is incorrect; in cut-through mode the frame is forwarded after the Destination Address has been read.

D is incorrect; Half Duplex means EITHER transmit or receive, but not both at the same time,

E is incorrect; this is not a switch mode. Fragment-free mode is a switch mode.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.

Q. 123

Switching methods include cut-through, store and forwarded and a modified version of the first two methods. Which statement about switching methods is true?

- A. The stored and forward method has low latency.
- B. The cut through method and switching has high latency.
- C. The modified version holds the packet in memory until 50% of the packet reaches the switch.
- D. The modified version holds the packet in memory until the data portion of the packet reaches the switch.

Answer: D

Explanation: The modified cut-through (also known as fragment-free) the switch reads into the first 64 bytes before forwarding the frame.

Incorrect Answers:

A is incorrect; Store and Forward has HIGH latency.

B is incorrect; Cut-Through has LOW latency.

C is incorrect; it is not 50%. In the modified version, the frame transmission does not start until the first 64 bytes are read.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.

Q. 124

Which technology do catalyst switches use to resolve topology loops and ensure data use flows properly through a single network path?

- A. Virtual LANs.
- B. Frame filtering.
- C. Cut through switching.
- D. Spanning tree protocol.

Answer: D

Explanation: Spanning Tree protocol builds ONE path through all the nodes, and eliminates any loops. Anything sent along the tree will not encounter any loops because the protocol will eliminate any loops.

Incorrect Answers:

A is incorrect; VLANs is not a loop resolution technology.

B is incorrect; Frame Filtering is not a loop resolution technology.

C is incorrect; Cut Through switching is not a loop resolution technology. Rather it is a form of forwarding.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 155-160.

Q. 125

Which two statements are true? (Choose two)

- A. Ethernet 802.3 utilizes a half duplex method for data transfer.
- B. In a 100mbps point to point connect, a full duplex connection can provide 400mbps of data transfer.
- C. Ethernet switches can use the full duplex mode to connect multiple nodes on a single port office switch.
- D. Full duplex Ethernet takes advantage of UTP using one pair of transmission and other pair for reception.

Answer: A and d.

Explanation: Half duplex Ethernet is most often found in a 802.3 network and full duplex achieves data transmission by using one pair to receive data and another to send data.

Incorrect Answers:

B is incorrect; in full duplex you can maximize up to double – by transmitting and receiving at the same time, for a nominal maximum throughput of 200mbps.

C is incorrect; when running full duplex, only one device can be attached to the port.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 163-165.

Q. 126

What is a backoff on an 802.3 network?

- A. It is latency in store and forward switching.
- B. It is the time used for token passing for machine to machine.
- C. It is the retransmission delay that is reinforced when a collision occurs.
- D. It is the result of two nodes transmitting at a same time the frames from each transmitting device collide and are damaged.

Answer: C

Explanation: Backoff is done when a collision occurs. Those trying to transmit at the same time “back-off” and attempt to retransmit at a later time. A 802.3 network uses collision detection, so that the transmitters are notified of the collision. Then using a random calculated wait time, re-transmission occurs. By using a random wait time, hopefully both transmitter wait a different amount of time and do not attempt simultaneous transmission again.

Incorrect Answers:

A is incorrect; back off occurs after a collision has occurred and is not latency stored and forward switching.

B is incorrect; has nothing to do with the passing of the token.

D is incorrect; back off is used to prevent another collision.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 16-17.

Q. 127

You have just issued an erase startup-config command and reloaded your router. In which mode will your router be when you reboot?

- A. Setup.
- B. Startup.
- C. User EXEC.
- D. User privileged.
- E. Global configuration.

Answer: A

Explanation: When a router is booted, it will copy the startup-config from NVRAM to the RAM and begin execution. Since the erase wiped out the startup configuration, the router can't start. This forces the router into setup mode, where a configuration has to be built from by scratch.

Incorrect Answers:

B: Incorrect because there is no configuration to startup.

C, D, E: Incorrect because there is no longer a configuration to run, these modes do not exist.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 84-90 and 134.

Q. 128

What is a key use of a device hardware address?

- A. To obtain a vendor code/serial number from the user.
- B. To transmit a frame from one interface to another interface.
- C. To transmit a packet from one local device to another local device.
- D. To transmit data from one local device to remote device across Internet.
- E. To contain logical information about a device to use an end-to-end transmission.

Answer: B

Explanation: A hardware address is used to transmit frames on the hardware level.

Incorrect Answers:

A is incorrect; a vendor code/serial number is a form of hardware address, and the user does not provide it.

C is incorrect; packets and devices are at a higher level in the layers.

D is incorrect; devices are handled at a higher layer, and use different addressing.

E is incorrect; a logical device with end-to-end may span more than two hardware interfaces; device addresses are used from interface to interface, or hop-to-hop.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 172-175.

Q. 129

Which command verifies encapsulation as well as layer 1 and layer 2 statistics on a router configured for Frame Relay?

- A. show IP
- B. show interface
- C. show statistics
- D. show frame-relay

Answer: B

Explanation: The show interface command will show information regarding the encapsulation and Layer 1 and Layer 2 status. It also displays information about the DLCIs used on the Frame Relay configured serial interface.

Incorrect Answers:

A is incorrect; the show ip command displays the switches current IP configuration.

C is incorrect; this is not a valid command.

D is incorrect; Frame-relay will require another parameter after the show frame-relay IOS command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 421-424 and 82.

Q. 130

Which element is used to define the rate, in bits per second, which a Frame Relay switch agrees to transfer data?

- A. Clock rate
- B. Committed information rate
- C. Local management interface
- D. Data-link connection identifier
- E. Committed rate measurement interval

Answer: B

Explanation: CIR is the rate, in bits per second, at which the service provider states that data will be transferred.

Incorrect Answers:

A is incorrect; clock rate is the transmission medium speed, which is determined by modem clocking.

Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) pages 28-30

C is incorrect; LMI is a signaling standard between the router device and the Frame Relay switch that is responsible for managing the connection and maintaining the status between the devices.

D is incorrect; DLCI is addressing used to identify virtual circuits.

E is incorrect; this is the sampling period used in controlling CIR, but is not the rate itself.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 413-414.

Q. 131

How many valid host IP addresses are available on the following network/subnetwork?

176.12.44.16/30

- A. 2
- B. 30
- C. 254
- D. 16,382
- E. 65,534

Answer: A

Explanation: This is a CIDR problem, also called supernetting. When you see the /xx notation, the xx is the consecutive number of one bits in the subnet mask. In this case, /30 = 30, and is also a subnet mask of 255.255.255.252. This leaves 2 bits (4 hosts) for host addressing, however since we reserve 2 addresses, that leaves a net of 2 Host Addresses, max.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 227-234.

Q. 132

Which command displays the IP addresses assigned to specific host names?

- A. show hosts
- B. show interface
- C. ping host name
- D. config host name
- E. show host mapping
- F. show host name IP address
- G. trace IP addresses host name

Answer: A

Explanation: The show hosts command displays a cached list of host names and addresses.

Incorrect Answers:

B is incorrect; the show interface command is used to display the configuration of an interface.
C – G are incorrect; these are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 106, 240-241.

Q. 133

At which layer of the OSI model does the ping command operate?

- A. Session
- B. Network
- C. Transport
- D. Maintenance

Answer: B

Explanation:

As the ping command is used to test network connectivity it resides on the network layer of the OSI model. 124

Incorrect Answers:

A is incorrect; the session layer is responsible for establishing, managing, and terminating communications sessions between presentation layer entities. This layer is not responsible for the ping command.

C is incorrect; the transport layer of the OSI model is responsible for the delivery of information in either a reliable or unreliable manner. Ping does not reside at this layer of the OSI model.

D is incorrect; there no maintenance layer in the OSI model.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 124, 10-13.

Q. 134

Given an IP address of 172.16.2.160 and a subnet mask of 255.255.255.192, to which subnet does the host belong?

- A. 172.16.2.32
- B. 172.16.2.64
- C. 172.16.2.96
- D. 172.16.2.128
- E. 172.16.2.192

Answer: D

Explanation: When we look at the last octet of the subnet mask, we have $192=128+64$, which is the two high order mask bits, leaving 6 bits for host addressing. Each subnet strides 64 addresses, including broadcast, leaving the following networks:

172.16.2.0
 172.16.2.64
 172.16.2.128
 172.16.2.192

We now look at the host address, which is 160, and find that it fits between 128 and 192, so the network is 172.16.2.128.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 227-234.

Q. 135

Which are two ways IPX supports multiple logical networks on an individual interface? (Choose two)

- A. Network number
- B. Routing protocol
- C. Encapsulation type
- D. Autonomous system number

Answer: A, C

Explanation:

Multiple encapsulations can be specified on an interface, but only if multiple network numbers have also been assigned, where each network number belongs to only one encapsulation type and each encapsulation type has only one network number. Although several encapsulation types can share the same interface, clients and servers with different encapsulation types cannot communicate directly with each other.

Incorrect Answers:

B is incorrect; routing protocol does not enable multiple logical networks.

D is incorrect; Autonomous System Number is used with certain routing protocols, and do not provide support of logical networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 335.

Q. 136

Given the following IP address from the Class B address range:

172.35.21.12

Your network plan requires no more than 126 hosts on a subnet that includes this address. When you configure the IP address in Cisco IOS software, which value should you use as the subnet mask?

- A. 255.255.0.0
- B. 255.255.128.0
- C. 255.255.255.128
- D. 255.255.255.252

Answer: C

Explanation:

Since we have to reserve the all ones and all zeros broadcast addresses, we take 126, add 2, and round up to the next power of 2. We get $126+2=128$, and 128 is a power of 2, and takes 7 bits of the subnet mask to represent the host address.

In the fourth octet of the subnet mask, we have 1 bit for the network, and 7 bits for the host. This high order NETWORK bit is the 128 bit. Based on the definition of the subnet mask, all network bits before this bit MUST BE one, so we get:

255.255.255.128

Incorrect Answers:

A, B, and D are incorrect; they do not provide a maximum of 126 hosts.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233-236.

Q. 137

In Cisco IOS software, which command displays the backup configuration?

- A. show flash
- B. show version
- C. show tftp-config
- D. show backup-config
- E. show startup-config

Answer: E

Explanation: This shows the startup configuration in NVRAM, which is the backup for the running configuration that runs in RAM.

Incorrect Answers:

A is incorrect; show flash command lists the contents of the flash showing the IOS images that are stored.

Remember, the backup configuration is in the NVRAM, not Flash nor RAM.

B is incorrect; this command shows information on the running configuration.

C is incorrect; this is not a valid command.

D is incorrect; this is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 98-99, 131.

Q. 138

What are the characteristics of UDP?

- A. It is reliable and acknowledged
- B. It is unreliable and acknowledged
- C. It is reliable and unacknowledged
- D. It is unreliable and unacknowledged

Answer: D

Explanation: UDP is connectionless and unacknowledged protocol. Although UDP is responsible for transmitting messages, no checking for segment delivery is provided at this layer. UDP depends on upper-layer protocols for reliability.

Incorrect Answers:

- A is incorrect; UDP is neither reliable nor acknowledged.
- B is incorrect; UDP is not acknowledged.
- C is incorrect; UDP is not reliable.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 207.

Q. 139

What are the two sublayers of the data link layer? (Choose two)

- A. MAC
- B. LLC
- C. SAP
- D. LCP
- E. NetWare Core Protocol (NCP)

Answer: A, B

Explanation: The data link layer has two sublayers. These sublayers are: MAC and LLC.

Incorrect Answers:

- C is incorrect; the Service Access Point is used by Netware to advertise servers, and runs at a higher layer.
- D is incorrect; this protocol is used in PPP, but is not part of the data link layer itself.
- E is incorrect; NCP is used by Netware, and runs at a higher layer.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 18-19.

Q. 140

Which two types of route table entries does a Layer3 router use to determine the appropriate path to a destination? (Choose two)

- A. Static route entry
- B. Default route entry
- C. Dynamic route entry
- D. Temporary route entry
- E. Permanent route entry

Answer: A, C

Explanation: When a router must send packets that are not directly connected it must have either a static route or a dynamic route entry.

Incorrect Answers:

- B is incorrect; A default gateway does not always determine the appropriate path.

D and E are incorrect; routes can be temporary or permanent, but this is an attribute of the route entry itself. This does not determine path information.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 250-252.

Q. 141

Which keystroke allows IOS to complete a partial command entry?

- A. <Tab>
- B. <Ctrl R>
- C. <Spacebar>
- D. <Right Arrow>

Answer: A

Explanation: Tab completes a partially entered command if enough characters have been entered to make it unambiguous.

Incorrect Answers:

B is incorrect; the key combination will refresh the command line and everything typed up to this point.

C is incorrect; this just produces a space.

D is incorrect; this will not produce the desired result.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 97-98.

Q. 142

Eight stations connected to separate 10Mbps ports on a layer 2 switch will give each station how many Mbps of bandwidth?

- A. 1.25
- B. 4
- C. 16
- D. 10
- E. 60

Answer: D

Explanation: Using switching technology, each port can provide full bandwidth, in this case 10mbps, so each station can get a full 10mbps.

Incorrect Answers:

A, B, C and E are incorrect; due to the fact that each workstation is connected to it's own 10 Mbps port, each port can provided it full 10 mbps.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 170-175.

Q. 143

Which two WAN data link layer protocols support multiple upper layer protocols? (Choose Two)

- A. PPP
- B. LAPD
- C. ISDN
- D. HDLC

Answer: A, D

Explanation: Cisco has a proprietary HDLC. This Cisco HDLC frame uses a proprietary type field that acts as protocol field, which makes it possible for multiple network later protocols to share the same serial link.

PPP is not a proprietary protocol. As result, it is most often used to connect devices of different vendors. In addition, it encapsulate network layer protocol information that makes it possible to support multiple upper layer protocols.

Incorrect Answers:

B is incorrect; LAPB is a layer 2 protocol but LAPD is not

C is incorrect; ISDN is a Layer 1 (Physical) layer protocol, not Layer 2(data link).

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 373-376.

Q. 144

Which command enables directly connected network 199.55.72.0 to be used by RIP?

- A. Router(Config)# rip 199.55.0.0
- B. Router(Config-router)# rip 199.55.72.0
- C. Router(Config-router)# network 199.55.0.0
- D. Router(Config-router)# network 199.55.72.0

Answer: D

Explanation: The network command allows the routing process to identify the interfaces will participate in the sending and receiving of messages.

Incorrect Answers:

A and B are incorrect; these are not valid commands. In addition, A is in the wrong mode.

C is incorrect; this is the wrong network number. The 199 is a Class C subnet, using a default mask of 255.255.255.0, the network requires 3 octets of individual (1-254) networking addressing. 199.55.0.0 will cause a all zeros subnet broadcast.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 276-277.

Q. 145

What does the command show access-list 101 list?

- A. All extended access lists.
- B. All access lists within the router.
- C. The contents of standard access list 101
- D. The contents of extended access list 101

Answer: D

Explanation: As the command is directing that the contents of access list 101 be displayed and as 101 is a number for an extended IP access list D is correct.

Incorrect Answers:

A and B incorrect; only access list 101 will be displayed.

C is incorrect; standard IP address lists are in the range of 1-99, IP extended address lists are in the range of 100-199.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 303, 324-325.

Q. 146

Which two commands show your access lists? (Choose two)

- A. Show filters.
- B. Show access-lists
- C. Show IP access-list
- D. Show running-Config

Answer: B, C

Explanation: There are three commands that can be used to display access lists. These commands are: show access-lists (displays all access-lists), show access-list number (displays a specific access list) and show ip access-lists (displays all ip access lists).

Incorrect Answers:

A is incorrect; this is not a valid command.

D is incorrect; the show running-config displays a lot of information but it does not display access list information.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-325.

Q. 147

Which statement about the Point-to-Point protocol (PPP) is true?

- A. PPP supports TCP/IP, but not Novell IPX
- B. PPP is being phased out of existence by the Serial Line Internet protocol
- C. PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits.
- D. PPP is an ITU-T and ANSI standard that defines the process for sending data over a packet-switched data network

Answer: C

Explanation: PPP provide router-to-router and host-to-network connections over synchronous and asynchronous circuits.

Incorrect Answers:

A is incorrect; PPP supports both IP and IPX.

B is incorrect; PPP is causing SLIP to be phased out.

D is incorrect; PPP was not designed as a standard for packet-switched data networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 373.

Q. 148

Which encapsulation methods are most commonly used with dialup integrated services Digital Network (ISDN)?

- A. IP and IPX
- B. IP and PPP
- C. PPP and SDLC
- D. PPP and HDLC

Answer: D

Explanation: There are a number of WAN encapsulation types available. The two most commonly used are Point-to-Point Protocol (PPP) and Cisco High-Level Data Link Control (HDLC). The reason HDLC is employed so much is that it is the default encapsulation type on point-to-point dedicated links and circuit switched connections. PPP is a non-proprietary encapsulation and this is while it is used to communicate between devices from different vendors.

Incorrect Answers:

- A is incorrect; IP and IPX are not encapsulation types. They are routing protocols.
- B is incorrect; only PPP is an encapsulation type.
- C is incorrect; SDLC is a protocol used in IBM SNA systems.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 372-376.

Q. 149

Which two steps are parts of the process of creating Frame Relay subinterfaces on a point-point connection? (Choose Two)

- A. Configure the router to forward all broadcast packets
- B. Remove any network address assigned to the physical interface
- C. Configure the local data-link connection identifier for the subinterfaces
- D. Partition the total committed information rate available among the subinterfaces

Answer: B, C

Explanation: There are a number of things that must be done to configure a subinterface. Two of these steps are: the removal of the network address from the physical interface and assign that address to the subinterface and configure the DLCI for the subinterface.

Incorrect Answers:

- A is incorrect; this is not a frame-relay task and in fact if it was done loops would most likely occur.
- D is incorrect; this is not done during frame-relay subinterface creation.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

Q. 150

Your network is having IP problems connecting to one or more Frame Relay peer routers. Which two commands should you use to show the routers that are reachable? (Choose two)

- A. show IP map
- B. show IP route
- C. show frame-relay map
- D. debug frame-relay map

Answer: B, C

Explanation: The show ip route command displays the contents of the IP routing table. The routing table includes entries for all known networks and subnetworks plus it displays how the information was learned. The show frame-relay map command shows the Frame Relay DLCI-to-IP address mappings. When the results of these two commands are considered together will provide the data needed to determine routing information.

Incorrect Answers:

A and D are incorrect; neither are valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 280-281, 431-432.

Q. 151

What are three benefits of integrated services digital network (ISDN)? (Choose three)

- A. PVCs are faster and more reliable.
- B. No specialized equipment is required.
- C. Data transfer is faster than typical modems.
- D. Call setup is faster than with standard telephone service.
- E. It carries many types of data traffic such as voice, video, and data.

Answer: C, D, E

Explanation:

Bringing digital connectivity via ISDN to a site has many benefits. These benefits include:

- The capability to carry a variety of user-traffic feeds. ISDN provides access to all-digital facilities for videos, voice, packet-switched data, and enriched telephone network services.
- Much faster call setup than modem connections. ISDN can be set up in less than a second.
- Much faster data transfer for ISDN (64 kbps) than modems (28.8 to 56 kbps).

Incorrect Answers:

A is incorrect; PVCs are used in Frame Relay connections and not in ISDN.

B is incorrect; ISDN does need specialized equipment such as TE1, NT2, NT1, TE2, and TAs.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 387-393.

Q. 152

What are two functions of ICMP protocol? (Choose Two)

- A. To map IP addresses to Ethernet addresses
- B. To map common names to network addresses
- C. To forward SNMP alerts to management consoles
- D. To generate an echo reply in response to a ping test
- E. To send a host or post unreachable message from a router to the source of an undeliverable packet

Answer: D, E

Explanation: ICMP has a great many functions that it can perform. Two of these functions are: destination unreachable messages and echo reply messages.

Incorrect Answers:

- A is incorrect; this is done by ARP & RARP protocols.
- B is incorrect; this is done by Domain Name Services (DNS).
- C is incorrect; a SNMP agent does this.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 217-218.

Q. 153

Novell IPX network addresses have two configurable parts. The network administrator specifies the IPX network number.

How is the node number determined?

- A. It is the serial number of the given device.
- B. It is assigned as a lease by Novell DHCP.
- C. It is also set by the network administrator.
- D. It is usually the MAC address of one interface.
- E. It is downloaded by NetWare Core Protocol (NCP).

Answer: D

Explanation: It is determined by the MAC address, so all other options are wrong.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 335-336.

Q. 154

Which IP address range is allowable given an IP address of 172.37.2.56 and 28-bits of subnetting?

- A. 172.37.2.48 to 172.37.2.63
- B. 172.37.2.48 to 172.37.2.62
- C. 172.37.2.49 to 172.37.2.62
- D. 172.37.2.49 to 172.37.2.63

E. 172.37.2.55 to 172.37.2.126

Answer: C

Explanation: When we say 28 bits of subnetting, this is similar to a CIDR question. We have a subnet mask of 28 bits of ones followed by 4 bits of zeros, or 255.255.255.240, and gives subnets with a stride of 16, or 14 hosts per subnet (16-2 because we subtract out the two broadcast ranges of all zeros and all ones)

This will yield subnets, some networks are as follows:

172.37.2.0.
172.37.2.16
172.37.2.32
172.37.2.48
172.37.2.64
etc...

So, we can fit a network of 172.37.2.48-172.37.2.63
172.37.2.48 is the network, and the all zeros broadcast range.
172.37.2.63 is the broadcast, and is the all ones broadcast range.

So, we can't user 48 or 63, and the valid host address range would be 49-62.

C is correct; this is the only range that fits.

Incorrect Answers:

A, B, D, and E are incorrect; these are not the proper ranges with the information provided in the question.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233-237.

Q. 155

When you use the Cisco IOS command show configuration on a router, which part of the output shows the specific configured IP addresses and subnet masks?

- A. The IP host table
- B. The interfaces output
- C. Each section of the output
- D. Each section of the output
- E. The global configuration statements
- F. The section under the autonomous system number

Answer: B

Explanation: Each interface that has the IP protocol, will show all IP addresses that were configured on that interface, with subnet masks.

Incorrect Answers:

A is incorrect; this only shows the IP to host mappings, like the mapping of a HOSTS table.
C, D, E, and F are incorrect; these options do not provide this information.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 106-110.

Q. 156

What is the connection-oriented protocol in the TCP/IP protocol stack?

- A. IP
- B. UDP
- C. TCP
- D. DNS
- E. OSPF

Answer: C

Explanation: TCP is a connection-oriented, reliable protocol. In connection-orientated environment, a connection is established between both ends before transfer of information can begin.

Incorrect Answers:

A is incorrect; IP is a connectionless protocol.
B is incorrect; UDP is a connectionless protocol.
D is incorrect; DNS is a service, not a protocol.
E is incorrect; OSPF is a routing protocol.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 206-215.

Q. 157

What does the term 'Base' refer to in 100BaseT?

- A. Cabling type
- B. Signaling type
- C. 100 mode type
- D. Spectrum used
- E. Speed category

Answer: B

Explanation: There are two main signaling types: Baseband and Broadband.

Incorrect Answers:

B is incorrect; The T is the cabling type, in this case Twisted Pair.

C is incorrect; 100 is the speed, in this case 100mbps.

D is incorrect; Spectrum, such as fiber, would be part of the cabling type.

E is incorrect; 100 is the speed category, in this case 100mbps.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 44-45.

Q. 158

Click the task button & Place the encapsulation.

Place the data encapsulation steps in the proper order

Order	Steps
place step one here	Synchronization of a pattern of 1's and 0's with some clocking function, allows transmission on a medium and recognition of the data bits.
place step two here	Data is segmented and packaged with information to allow the sending and receiving hosts to reliably communicate.
place step three here	Alphanumeric user input is formatted for sending over the internetwork.
place step four here	A frame is built to allow communication over and interface to the network.
place step five here	Data is encapsulated with a network header specifying source and destination logical addresses.

Answer:

Place the data encapsulation steps in the proper order

Order	Steps
	Alphanumeric user input is formatted for sending over the internetwork.
	Data is segmented and packaged with information to allow the sending and receiving hosts to reliably communicate.
	Data is encapsulated with a network header specifying source and destination logical addresses.
	A frame is built to allow communication over and interface to the network.
	Synchronization of a pattern of 1's and 0's with some clocking function, allows transmission on a medium and recognition of the data bits.

Explanation:

We can also look at this as layer functions, then sort:

Step One: Physical Layer

Step Two: Transport Layer

Step Three: Application Layer

Step Four: Data Link Layer

Step Five: Network Layer

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 10-14.

Q. 159

Which command displays the interfaces using a given access list?

- A. Show filters
- B. Show IP interface
- C. Show active list
- D. Show interface parameters
- E. Configure IP access list
- F. Show access-list interfaces

Answer: B

Explanation: The show ip interface command displays IP interface information and indicates whether any access lists are set for a specific interface.

Incorrect Answers:

A and C-F are incorrect; these are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324.

Q. 160

You have a Frame Relay Link on serial1. Which command displays the Local Management Interface (LMI), data link connection identifier (DLCI), and bandwidth for that link?

- A. show interface serial1
- B. show frame-relay serial1
- C. show protocol frame-relay serial1
- D. show serial1 encapsulation frame-relay

Answer: A

Explanation: The show interfaces command displays statistics for all interfaces configured on the switch.

Incorrect Answers:

B, C and D are incorrect; these are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 81-81.

Q. 161

When you configure an IP address on a Cisco Router, which command starts the IP processing on the interface?

- A. IP-Space enable

- B. Network IP-Address
- C. IP address IP-address subnet mask.
- D. The exit command from the enable configuration
- E. Copy running-configuration to startup-configuration

Answer: C

Explanation: The ip address command is used to start IP processing on a router (in fact the same command is also used to do the same on a switch).

Incorrect Answers:

- A is incorrect; this is not a valid command.
- B is incorrect; the network command is most often used to identify directly connected networks.
- D is incorrect; this is not a valid command.
- E is incorrect; this command will copy the running config to the NVRAM.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 245, 133, 277.

Q. 162

When you issue the command *show version*, your router returns:

“Configuration register is 0x0101”

From where does the router boot?

- A. ROM
- B. NVRAM
- C. FLASH
- D. A TFTP server

Answer: A

Explanation: If you want your router to boot automatically from ROM you need to set the boot field to 1 (0x1).

Incorrect Answers:

- B is incorrect; to boot from the NVRAM the boot field must be set from the range of 2 to F (0x2 to 0xF).
- C is incorrect; to boot from FLASH the boot system flash command would need to be used.
- D is incorrect; to boot from a TFTP server the boot system tftp command would need to be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 127-130.

Q. 163

Which line from a show spantree one-command output indicates that Virtual LAN1 (VLAN1) is functioning properly?

- A. Root mode is fast Ethernet 0/26.
- B. Port Ethernet 0/1 of VLAN is forwarding.
- C. Designated port in Ethernet 0/1 path cos10.
- D. Designated root has priority 0, address 0000.588fb600
- E. VLAN1 is executing the IEEE compatible spanning tree protocol.

Answer: E

Explanation: To determine if the VLAN is functioning properly on will need to examine the first line of the output. That is, VLAN is executing the IEEE compatible spanning tree protocol.

Incorrect Answers:

A is incorrect; this line indicates what the switch thinks is the root port.

B is incorrect; this line indicates which port is forwarding.

C is incorrect; this line indicates the designated port and its associated cost.

D is incorrect; this line indicated the MAC address of the designated root.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 199-200.

Q. 164

Which statement about the data-link connection identifier (DLCI) is true?

- A. It is a number that identifies a local virtual circuit in Frame Relay network.
- B. It is a signaling standard between the CPE device and the Frame Relay switch.
- C. It is check speed port speed of the connection (local loop) to the Frame Relay cloud.
- D. It is maximum number of uncommitted bits that the Frame Relay switch will attempt to transfer beyond the committed information rate (CIR).

Answer: A

Explanation: The DLCI (Data-Link Connection Identifier) is a number that identifies the logical circuit between the router and the Frame Relay switch. The Frame Relay switch maps the DLCIs between each pair of routers to create a PVC. DLCIs have local significance in that the identifier references the point between the local router and the Frame Relay switch, which it is connected.

Incorrect Answers:

B is incorrect; DLCI is not a signaling standard.

C is incorrect; this is the local access rate.

D is incorrect; this is not a function of DLCI.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 413-414.

Q. 165

What is the most common mail to device?

- A. Hub
- B. Router
- C. Repeater
- D. Switch

Answer: D

Q. 166

While you are preparing the initial configuration of your router and enable IP you find that you need to use a telnet session to check for a network address parameter. Your telnet logging and your virtual transmission session on the other device are successful. What is the default that you must enter to suspend your Telnet session and return to the original router?

- A. Suspend
- B. The command exit
- C. CTRL – ESC followed by x
- D. CTRL – ALT – DEL followed b ESC
- E. CTRL- Shift-6 followed by x

Answer: E

Explanation: To suspend a Telnet session and escape from the remote target system back to your local switch or router, press the keys Ctrl-Shift-6 at the same time, release the key sequence, and then press the character x.

Incorrect Answers:

A, B, C, and D are incorrect; these are not the proper key combinations to suspend a Telnet session.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 122-123.

Q. 167

Which ex command displays system configuration information, software version and the names and sources of configuration files and boot images on a router?

- A. show boot

- B. show flash
- C. show Config
- D. show version

Answer: D

Explanation: the show version command displays information about the system hardware, the software version the names and sources of the configuration files and the boot images.

Incorrect Answers:

A is incorrect; is not a valid command.

B is incorrect; the show flash command displays the contents of the Flash memory, which includes the image filenames and sizes.

C is incorrect; the show config command displays the configuration profile from which the command is entered.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 78, 131 and 466.

Q. 168

The exhibit shows the Cisco routers startup messages.

Which group of messages identifies the router components that you can configure during set up the initial system configuration?

- A) System Bootstrap, Version 11.3(1)XA, PLATFORM SPECIFIC RELEASE SOFTWARE (fc1)
Copyright (c) 1998 by cisco Systems, Inc,
CS2600 platform with 32768 Kbytes of main memory
- B) Rp.,pm 1 b f
program load complete, entry point: 0x800008000, size: 0xef4e0
Self decompressing the image :#####[OK]
- C) Notice: NVRAM invalid, possible due to write erase,
program load complete, entry point:0x80008000, size 0x415b20
Self decompressing the image: #####
#####[OK]
Restricted Rights Legend....(abridged)
- D) Cisco Internetwork Operating System Software
IOC (tm) C2600 Software (C2600-JS-M), Version 11.3(2)XA,
PLATFORM SPECIFIC RELEASE SOFTWARE (fc1)
Copyright 1996-1998 by Cisco Systems Inc.
Compiled 10-Mar-98 14:25 by gneale

Image text-bas: 0x80008084, database: 0x809CD49C

- E) Cisco 2611 (MP C860) processor (revision 0x100) with 24576K/8192K bytes of memory,
 Processor board ID 04614954
 M860 processor, part number 0 mask 32,
 Bridging software,
 X.25 software, Version 3.0.0,
 2 Ethernet/IEEE 802.3 interface(s)

Answer: D

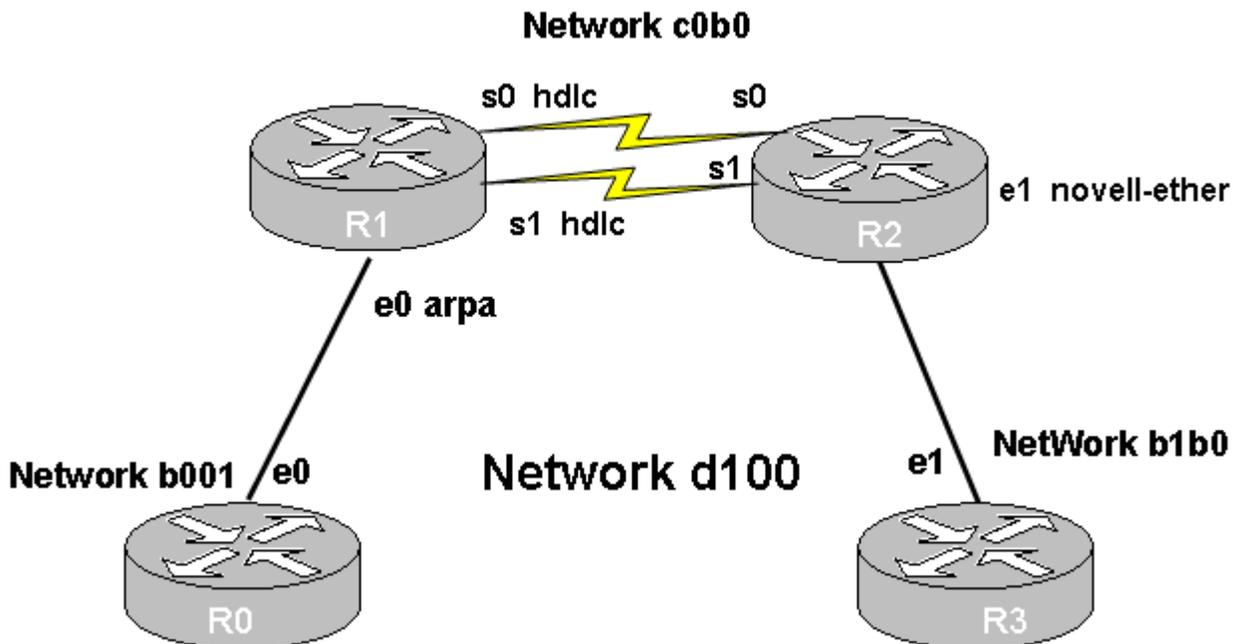
Explanation: This is the result of the show version command, which displays the configuration of the system hardware, and the software version. These can be configured during the initial configuration.

Incorrect Answers:

- A is incorrect; the bootstrap code is used to bring a router up during initialization.
 B is incorrect; this is the output while IOS is being loaded.
 C is incorrect; as this is the NVRAM this is the system configuration.
 E is incorrect; this is all hardware information that is not configurable during the initial configuration.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 98, 124-127.

Q. 169



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Which encapsulation type should be used for the S0 port of router R2?

- A. SAP
- B. HDLC
- C. ARPA
- D. Novel Ether

Answer: B

Explanation: Router R2 S0 connects to Router R1 S0. Router R1 S0 uses HDLC, and BOTH sides must run the same protocol in order to communicate (it is like talking the same language; you can't have one side English and the other Side French).

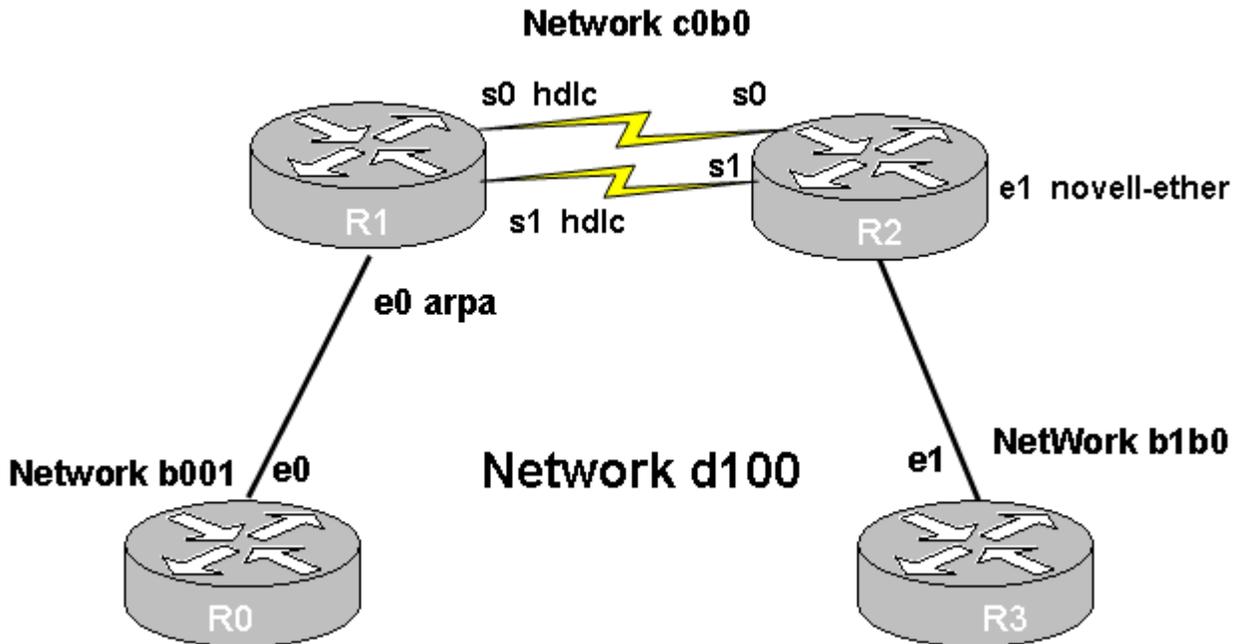
So the correct answer is B – HDLC.

Incorrect answers:

A, B and C are incorrect; the two routers must have the same encapsulation type to communicate properly thus these encapsulation types could not be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 368-373.

Q. 170



Which encapsulation type should be used for the e1 port of Router R3?

- A. SAP
- B. HDLC
- C. ARPA
- D. Novell-Ether

Answer: D

Explanation: In order for both routers to communicate they must be using the same type of encapsulation. Therefore e1 of router R3 must have novell-ether encapsulation.

Incorrect Answers:

A, B, and C are incorrect; the two routers must have the same encapsulation type to communicate properly thus these encapsulation types could not be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 334-337.

Q. 171

Which range of possible numbers do standard IPX access lists have?

- A. 100 - 199

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- B. 600 - 699
- C. 800 - 899
- D. 1000 - 1099

Answer: C

Explanation:

Access list exist for IPX traffic, just like they do with IP traffic. Like IP there are ranges for IPX access list. The IPX access list ranges are: 800 to 899 – standard access lists, 900 to 999 – extended access lists, and 1000 to 1099 – SAP filter access lists.

Incorrect Answers:

A is incorrect; 100-199 is the range for an extended ip access address.

C is incorrect; this is not a defined access list range.

D is incorrect; the range 1000-1099 is for SAP filter access list.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 350-351 and 305.

Q. 172

Which statement about Ethernet switches is true?

- A. Symmetric switching allows connection between ports of unlike bandwidth and does not require memory buffering.
- B. Memory buffering is used to prevent a bottleneck when ports of different bandwidth are connected on a symmetric switch.
- C. The latency can be reduced if the switch utilizes the store and forward method of switching. Store and forward is better for error detection.
- D. The cut-through method of switching is faster because the switch forwards the packet to the destination as soon as it reads the destination address.

Answer: D

Explanation: In cut-through mode, the switch checks the destination address (DA) as soon as the header is received and immediately begins forwarding the frame. Depending on the network transport protocol being used (connection or connectionless orientate), there is a significant decrease in latency from input port to output port. The delay in cut-through switching remains constant regardless of the size of the frame , because this switching mode starts to forward the frame as soon as the switch reads the DA.

Incorrect Answers:

A is incorrect; Symmetric switching provides evenly distributed bandwidth to each port, while asymmetric switching provides unlike, or unequal, bandwidth between some ports.

B is incorrect; this is not a true statement.

C is incorrect; store-and-forward switching increases latency.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.
http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/lanswtch.htm

Q. 173

Exhibit:

	172	20	7	160	
172.20.7.160	10101100	00010100	00000111	10100000	Host
255.255.255.192	11111111	11111111	11111111	11000000	Mask

The exhibit shows an IP address and its subnet mask. What is the last available host address for this IP subnet?

- A. 172.20.7.255
- B. 172.20.7.197
- C. 172.20.7.190
- D. 172.20.7.129
- E. 172.20.255.255

Answer: C

Explanation: In order to determine the last available host you will need to draw a vertical line just after the last contiguous subnet mask 1 bit. On the next line write the address that it to the left of the line and then to the right of the line place all 1s in the remaining spaces until the last free space. Place a 0 in this place. Convert the binary to dotted-decimal and this will be the last available host.

In this case the binary would be:

10101100 00010100 00000111 10 111110

This converts to

172.20.7.190

Incorrect Answers:

A is incorrect; this is the IP that would be used to send a broadcasts to all host of the 172.20.7 subnet.

B is incorrect; with the facts of this question this is not a valid IP.

D is incorrect; this is the IP address used to send a message to all hosts on the 172.20 network.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 232-234

Q. 174

What is the bit length and expression form of a MAC address?

- A. 24 bits expression as a decimal number
- B. 24 bits expression as a hexadecimal number
- C. 36 bits expression as a binary number
- D. 48 bits expression as a decimal number
- E. 48 bits expression as a hexadecimal number

Answer: E

Explanation:

The MAC address is a 48 bit address expressed as 12 hexadecimal digits. The first 24 bits or 6 hexadecimal digits of the MAC address contain a manufactures identification or vendor code (also known as the Organizatinally Unique Indentifier – OUI). To ensure uniqueness, the IEEE administers OUIs. The last 24 bits or 6 hexadecimal digits are administered by each vendor and often represent the interface serial number.

Incorrect Answers:

A, B, and C are incorrect; MAC addresses are 48 bits that are expressed as a hexadecimal number.

D is incorrect; MAC addresses are expressed as hexadecimal, not decimal.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 19-20.

Q. 175

Which command displays all the commands in the history buffer?

- A. control header
- B. show buffer
- C. show history
- D. show history buffer

Answer: C

Explanation: The show history command will show of the commands that are stored in the buffer.

Incorrect Answers:

A, B, D are not valid IOS commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 94.

Q. 176

Which router component stores routing tables, ARP cache, and packet buffers?

- A. ROM
- B. RAM
- C. NVRAM
- D. Flash memory

Answer: B

Explanation: RAM (random access memory) is used by all computers to store information. Cisco routers use RAM to store packet buffers, routing tables and ARP cache.

Incorrect Answers:

A is incorrect; ROM are chips that are used to help boot a system, and are changed only by replacing the chips themselves.

B is incorrect; NVRAM is used to save long-term items that don't change much, such as the startup configuration.

D is incorrect; Flash is used to save copies of the IOS code.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 125-126.

Q. 177

Which two solutions are used to reduce the chance of distance vector routing loops. (Choose two)

- A. Split horizon
- B. Route Poison
- C. Area Hierarchies
- D. Link State Algorithms

Answer: A, B

Explanation: There are a number of ways of reducing the chance of routing loops. One way is split horizon. The split horizon rule is that it is not useful to send information about a route back in the direction from which the original update came. Another way is route poisoning. Route poisoning attempts to eliminate routing loops caused by inconsistent updates. With this technique, the router sets a table entry that keeps the network state consistent while other routers gradually converge correctly on the topology change.

Incorrect Answers:

C is incorrect; hierarchical areas make for a more efficient use of address but will not prevent loops.

D is incorrect; link State is a different method than Vector Routing, they are not combined for loop elimination.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 266-270.

Q. 178

Which command should you use to configure a router so that it can become a TFTP host for router system image that is run in Flash?

- A. Copy flash tftp
- B. Config tftp server
- C. Write network <router name>
- D. Tftp-server system <filename>
- E. Setup server tftp <systemname>

Answer: A

Explanation: This is a poorly written question. When interrupted this question is asking how can a tftp server can use use a routers IOS image that is stored in the flash memory. The answer is use the command copy flash tftp.

B is incorrect; this is not a valid command.

C is incorrect; this is not a valid command.

D is incorrect; this is not a valid command.

Q. 179

Which commands loads a new version of Cisco IOS into the router?

- A. Copy flash ftp
- B. Copy ftp flash
- C. Copy flash tftp
- D. Copy tftp flash

Answer: D

Explanation: Whenever you need to load a new copy of the IOS onto the router (because the old one is damaged or you are upgrading you can download a copy of the new image from the tftp server. The proper command is copy tftp flash.

Incorrect Answers:

A is incorrect; IOS images are stored on a tftp server and not a ftp server. This is not a valid command.

B is incorrect; IOS images are stored on a tftp server and not a ftp server. This is not a valid command.

C is incorrect; the copy flash tftp command actually copies the IOS from the router to the tftp server. This is the exact opposite of what the question asked.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 138-140.

Q. 180

When you enter router password during the setup dialogue what is the difference between enable secret passwords?

- A. The enable password is encrypted.
- B. The enable secret password uses IPsec password authentication.
- C. The enable secret password cannot be seen as clear text when viewing the configuration.
- D. The enable secret password acts as a backup in case the enable password is compromised.

Answer: C

Explanation: The enable secret password is always encrypted and can't be reverse decrypted for display.

Incorrect Answers:

A is incorrect; the enable secret password is Always encrypted, the enable password is optionally encrypted.

B is incorrect; IPSEC is not used for the password.

D is incorrect; enable secret password would act as a backup if the secret password was lost and forgotten, or for some reason failed to be recognized.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 86

Q. 181

Which three commands are used to configure information into RAM on a router. (Choose three)

- A. Configure memory
- B. Configure terminal
- C. Configure overwrite
- D. Copy TFTP startup-Config
- E. Copy running-Config startup-Config
- F. Copy startup-Config running-Config

Answer: A, B, F

Explanation: There are a number of commands that can be used to ensure information is configured into the RAM of a routers. The one that is used most commonly is the copy startup-config running-config command.

This command copies the configuration in the NVRAM into the RAM. The other two commands are configure memory (an older command that can most often still be used) and configure terminal command. The configure terminal command will open the command line from which changes to the RAM can be made.

Incorrect Answers:

C is incorrect; this is not a valid command.

D and E are incorrect; both of these commands will make changes to the NVRAM and not the RAM directly.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 132-136.

Q. 182

How do you get help on a command after you have received “% INCOMPLETE COMMAND” response from a switch CLI?

- A. Type “history” to review the prompt before the error.
- B. Enter a question mark to display all console commands
- C. Type “help” followed by the command to see the command parameter
- D. Re enter the command followed by question mark to view key words

Answer: D

Explanation: Whenever you have a problem with a command on a switch the quickest way to get help with the command is to reenter the command and follow it with ?. When one gets the incomplete error there should be no space in between the reentered command and the question mark

Incorrect Answers:

A is incorrect; the history command will display the commands that were most recently entered. This will not provide help with completing the command.

B is incorrect; the ? will provide you with a listing of commands but not the parameters to complete the command.

C is incorrect; a help command is not provided in IOS.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 76-78.

Q. 183

Which command assigns the login password Cisco on the console terminal line?

- A. line vty 0
Log in
Password Cisco

- B. Line console
Login
Password Cisco
- C. Line login terminal
Password Cisco
- D. Line console 0
Login
Password CISCO
- E. Line console 0
Login
Password Cisco

Answer: E

Explanation: This is the proper procedure.

Incorrect Answers:

A is incorrect; this set of commands are used to establish a login password for incoming Telnet sessions.

B is incorrect; the first command is incomplete. The command should be line console 0.

C is incorrect; there is no such command.

D is incorrect; whenever you are entry a password great care must be taken, as passwords are case sensitive. In this case the password is suppose to be Cisco and not CISCO.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 101-103.

Q. 184

You just entered the following command

```
routers(config) #line console 0
```

Which operation is most likely to follow?

- A. Configure terminal type
- B. Enter protocol parameters for a serial line
- C. Create a password on the console terminal line.
- D. Establish a terminal type 4 connection to a remote host.
- E. Change from configuration mode to console privilege mode.

Answer: C

Explanation: If you want to prevent unauthorized people from logging into your router then you should use the line console command. After this you will need to enter a password.

Incorrect Answers:

A is incorrect; line console 0 command is for configuring the console password not its type.

B is incorrect; this command is used for console and not a serial line.

D is incorrect; this command is not used to establish connection to a remote host.

E is incorrect; to change from configuration mode to console privilege mode you would use CNTL+Z.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 102-103.

Q. 185

Which information must a router have in order to perform proper and efficient routing?

- A. Destination application of an incoming packet
- B. Number of other packets in a single flow of data
- C. Destination network address of an incoming packet
- D. Number of routers that know a path to the destination

Answer: C

Explanation: A router needs the following information to route packets: destination address, information sources, possible routes, best routes and routing information maintenance and verification.

Incorrect Answers:

A is incorrect; a router does not route based on application.

B is incorrect; the number of packet has no relevance to routing decisions.

D is incorrect; the number of routers has no relevance to routing decisions.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 250-251.

Q. 186

Which symbol in the router prompt indicates you are in the privileged mode?

- A. >
- B. !
- C. #
- D. :

Answer: C

Explanation: On a router the privileged mode is indicated by a # prompt.

Incorrect Answers:

A is incorrect; the user mode is indicated by a > prompt.

B and D are incorrect, this are not valid router prompts.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 69-70.

Q. 187

Which statement about half-duplex Ethernet operation is true?

- A. With half duplex transmission frames feed into a single cable in one direction at a time.
- B. Half duplex transmission between stations is achieved by using point-to-point Ethernet and fast Ethernet connection.
- C. Half duplex transmission between stations is achieved by using point to multi point Ethernet and fast Ethernet connection.
- D. Half duplex Ethernet technology provides a transmit circuit connection wired directly to the receiver circuit at the other end of the connection.

Answer: A

Explanation: Half-duplex only operates in one direction at a time on the cable.

Incorrect Answers:

B and C are incorrect; Fast Ethernet is not used for half duplex connections.

D is incorrect; this is done in Full Duplex and half duplex.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 163-164.

Q. 188

What are true four ways that fast Ethernet that compares to 10baseT Ethernet (Choose four)

- A. Fast Ethernet uses the same maximum transmission unit (MTU).
- B. Fast Ethernet is based on an extension to the IEE 802.3 specifications.
- C. Fast Ethernet uses the same media access control MAC mechanism.
- D. Fast Ethernet preserves the frame format that is used by the 10BaseT Ethernet.
- E. Fast Ethernet uses a speed increase 100 times to that of the 10BaseT Ethernet.

Answer: A, B, C, D

Explanation: Fast Ethernet shares a great deal of similarities with 10BaseT Ethernet. These similarities are the same MTU, same MAC mechanism and frame format. Fast Ethernet is based on IEE 820.3u, which is an extension to IEE 820.3.

Incorrect Answers:

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E is incorrect; its speed 10 times faster, not 100 times.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 44-45.

Q. 189

What is back off on an 802.3 network?

- A. It is latency stored and forward switching.
- B. It is the time used to token passing from machine to machine.
- C. It is re transmission delay that is encountered when a collision occurs.
- D. It the result of two nodes transmitting at the same time the frames from each transmitting device collide and are damaged.

Answer: C

Explanation: Backoff is done when a collision occurs. Those trying to transmit at the same time “back-off” and attempt to retransmit at a later time. A 802.3 network uses collision detection, so that the transmitters are notified of the collision. Then using a random calculated wait time, re-transmission occurs. By using a random wait time, hopefully both transmitter wait a different amount of time and do not attempt simultaneous transmission again.

Incorrect Answers:

- A is incorrect; back off occurs after a collision has occurred and is not latency stored and forward switching.
- B is incorrect; has nothing to do with the passing of the token.
- D is incorrect; back off is used to prevent another collision.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 16-17.

Q. 190

Which are two steps are required to configure and apply standard access list on an interface? (Choose two)

- A. Define and access list number and its parameter.
- B. Enable an interface to become part of the access list group.
- C. Define the number of access list to be supported on an interface.
- D. Copy the access list definition to each interface that will support it.

Answer: A, B

Explanation: Adding an access list to a router, as a packet filter is a two-step process. First, you create the list. Then, you apply that list to any interface that you want to filter the selected traffic.

Incorrect Answers:

C is incorrect; an existing access list is bound to the interface

D is incorrect; there is no need to copy an access list, an access list can be bound to multiple interfaces.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 310-311.

Q. 191

Which command displays access list 111?

- A. Show access-list 111
- B. Show IP access list 111
- C. Display IP address list 111
- D. Display access-list 111 details

Answer: A

Explanation: To display the contents of access list 11 the show access-list 111 command would need to be used.

Incorrect Answers:

B is incorrect; to show the contents of all ip access lists the show ip access-lists command is required. There is no need to specify the specific access list

C and D are incorrect; with a Cisco device whenever you want to display something a show command will be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-6.

Q. 192

Assuming no subnetting, which two pieces of information can be derived from the IP address 144.132.25.10? (Choose Two)

- A. It is a Class C address
- B. It is a Class B address
- C. The network address is 144.0.0.0
- D. The network address is 144.132.25.0
- E. The host portion of the address is 25.10

Answer: B, E

Explanation: This is a class B address. 128-191 is the range for the first octet in a class B range. The subnet mask is 16-bit.

Incorrect Answers:

A is incorrect; this is a class B address

C and D is incorrect; the network address is 144.132

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 222-227.

Q. 193

Given the following criteria for granting access from a remote site to your LAN :

restrict access on interface E0
E0=128.12.22.55
Deny access to telnet, FTP
All other types of operations.

Which line should come last in configuring your access list?

- A. Access-List 101
- B. Access-List 101 deny E0 telnet FTP
- C. Access list 101 allow all except FTP telnet
- D. Access list 101 permit IP 0.0.0.0 255.255.255.255 any
- E. Access List 101 deny IP 128.12.22.55 TCP EQ 20 21 23

Answer: D

Explanation: D is correct, it will permit all other traffic and protocols to pass.

This question seems to lack some information. Usually you want to deny access to functions on an IP address and allow other data to pass. One thing to remember is that when using an access list, anything that is not matched is denied. That means that If we restrict this one entry, and do NOTHING else, all other data will NOT pass through the router. So, does ALL other types of operations in the question imply allow all other operations and traffic? Assuming so, we need a entry that allows all other operations and traffic.

Incorrect Answers:

A is incorrect; this is an incomplete command.

B is incorrect; the interface is not used in the access list, the access list will be binded later.

C is incorrect; the command is not even in the correct format. And it is permit or deny, not allow.

E is incorrect; we are doing the last line and want remaining traffic to pass.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 318-321.

Q. 194

Which configuration task must you complete if a remote Frame Relay Router does not support Inverse ARP?

- A. Configure static maps.
- B. Define an IP address
- C. Disable DHCP on the Frame Relay router.
- D. Configure a static route to the remote network.

Answer: A

Explanation: When Inverse ARP is not supported by a remote router, or when you want to control broadcast traffic when using routing, you must define the address-to-DCLI table statically. These entries are referred to as static maps.

Incorrect Answers:

B is incorrect; defining an IP address would not have the desired effect.

C is incorrect; DHCP can't provide a mapping to a remote Frame Relay router.

D is incorrect; reverse ARP is used to map IP addresses to the DLCI, and is not a routing issue.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 420-421.

Q. 195

You are configuring a Frame Relay Router with subinterfaces on interface Serial 0. Which subinterface number could you use for this configuration?

- A. 1 and 2.
- B. 0.2 and 0.3
- C. 1 and 1.1
- D. 0.1a and 0.1b.

Answer: B

Explanation:

When you configure a subinterface you use the interface {typenumber.suberinterfeace-number} command. As you are configuring serial interface O the command would be:

interface ethernet 0.1 (where 0 indicate the interface and .1 indicates the first subinterface.)

This would be followed be a command to set the encapsulation type and then the command:

interface ethernet 0.2

This command would also need to be followed by its encapsulation type.

Incorrect Answers:

A, C and D are incorrect; for a subinterface to be numbered the interface needs to be indicated. Therefore the command would need to 0.x. x could be any number between the range of 1 to 4294967293.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 342-343.

Q. 196

What is the total bandwidth of all channels on a BRI circuit?

- A. 54 kps
- B. 64 kps

- C. 112 kps
- D. 128 kps
- E. 144 kps

Answer: E

Explanation: A BRI Circuit is 2 x 64K data channels plus one 16K control channel = 144K

A PRI Circuit is 23 64K data channels plus one 64K control channel = 1.544M = T1 (for USA)

Incorrect Answers:

A is incorrect; one B channel is 64 and the one class D is 16 kbps. 54 kbps is impossible.

B is incorrect; a BRI contains 2 B channels 2 x 64 = 128 plus a 16 class D channel for a total of 144 kbps.

C is incorrect; there is no mathematical way to obtain 112 kbps with BRI.

D is incorrect; 128 kbps only accounts for the class B channels and not for the class D channel.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 390-391.

Q. 197

Company XYZ has an employee that works out of the home. The employee runs big client-server applications and must quickly transfer large files. The company wants the best cost/benefit on this connection. What would be the most practical solution?

- A. An ISDN basic rate interface (BRI) connection to the users home .
- B. A dedicated T1 connection to the users home.
- C. A dedicated Frame Relay connection to the users home.
- D. A standard 28.8 analogue dial up connection to the users home

Answer: A

Explanation: This will provide up to two channels of 64K each, or a 128K multichannel. It is faster than conventional modems, but cost effective.

Incorrect Answers:

B is incorrect; T1 will be way too expensive.

C is incorrect; Frame Relay is also expensive in software and hardware, as well as circuit availability in the user's home area. (Although not all areas have ISDN either, ISDN is more common)

D is incorrect; a modem will be cheap enough, but can NOT handle large data transfers, it will be too slow.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 43-45.

Q. 198

What does the Frame Relay switch use to distinguish between each PVC connection?

- A. Data link connection identifier (DLCIs)
- B. CNs
- C. FECNs
- D. Local management interface LMI

Answer: A

Explanation:

The DLCI (Data-Link Connection Identifier) is a number that identifies the logical circuit between the router and the Frame Relay switch. The Frame Relay switch maps the DLCIs between each pair of routers to create a PVC. DLCIs have local significance in that the identifier references the point between the local router and the Frame Relay switch, which it is connected.

Incorrect Answers:

B is incorrect; CN does not exist.

C is incorrect; a Forward Explicit Congestion Notification (FECN) is a notification of congestion problems occurs.

D is incorrect; LMI is a signaling standard between the router device and the Frame Relay switch, and is not an addressing method.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 414-416.

Q. 199

You telnet to a host on a remote network. Which MAC address will be present in the ARP table when you issue the show arp command?

- A. MAC address of the destination host Ethernet port.
- B. MAC address of the local router Ethernet port
- C. MAC address of the destination router Serial port
- D. MAC address of the local router Serial Port

Answer: A

Explanation: The show arp command displays the arp table entries (which includes MAC addresses). As you have telnet to a host on remote network the arp table that will be displayed is the host that you telneted to.

Incorrect Answers:

B is incorrect; in order to obtain information about the local router you would need to use the show arp on it.

C is incorrect; you would need to telnet to the subject router to receive its MAC address.

D is incorrect; in order to obtain information about the local router you would need to use the show arp on it.

http://www.cisco.com/univercd/cc/td/doc/product/atm/c8540/12_0/13_19/cmd_ref/show.htm#xtocid223934

Q. 200

Which three pieces of CDP information about neighboring routers are displayed on your console terminal? (Choose three)

- A. The neighboring router's host name
- B. The neighboring router's hardware platform
- C. Up to one address for each protocol supported
- D. Up to two addresses for each protocol supported
- E. As many addresses as are configured for each protocol supported.

Answer: A, B, C

Explanation:

When issuing a show cdp entry command, the following information is provided:

- 1) Neighbor device ID
- 2) Layer 3 protocol information (ie IP address)
- 3) Local interface and Port identifiers of the neighbors remote ports
- 4) The hold time in seconds
- 5) Devices capabilities
- 6) Device Platform
- 7) IOS type and version.

Incorrect Answers:

D and E are incorrect; you only display ONE address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 116-119.

Q. 201

Which statement about the flow control function of TCP is True?

- A. TCP makes no effort to check for lost or duplicate data packets.
- B. The application layer must sequence data packets when using TCP.
- C. TCP controls the flow of UDP data through negative acknowledgements NAK.
- D. TCP is a connection-oriented protocol that acknowledges receipt of data packets and is considered reliable.

Answer: D

Explanation: Connection oriented protocols are reliable as they usually acknowledge the receipt of data packets. TCP is connection oriented.

Incorrect Answers:

A is incorrect; TCP is connection oriented and guarantees packet delivery and order.

B is incorrect; TCP is connection oriented, and guarantees packet ordering

C is incorrect; TCP does not mix with UDP, a different transport protocol.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 29 and 207.

Q. 202

Which command sets IGRP as the routing protocol for autonomous system 100?

- A. Router(config)# igrp 100
- B. Router(config)# network 100
- C. Router(config)# router igrp 100
- D. Router(config)# enable igrp 100

Answer: C

Explanation: To enable IGRP as a routing process one uses the router igrp command. This command must include the AS number within it. Thus the command to set IGRP for AS 100 is:

```
router igrp 100
```

Incorrect Answers:

A is incorrect; igrp 100 is not a valid command.

B is incorrect; the network command is used to identify what network the AS is directly connected to. In this case (network 100) the command is wrong as it contains the AS number and not the network number.

D is incorrect; the enable command is used for entering privilege mode. Further the enable command does not use the AS number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 285-286 and 69.

Q. 203

The ICMP (referred to in RFC 1700) is implemented by all TCP/IP hosts?

- A. TRUE
- B. FALSE

Answer: A

Explanation: This is a requirement because ICMP has other uses besides ping, for example destination unreachable or when ICMP is sent to provide better routing information.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 217-218.

Q. 204

IPX traffic using different encapsulation types can go over the same datalink.

- A. TRUE
- B. FALSE

Answer: A

Explanation:

Multiple encapsulation can be specified on an interface, but only if multiple network numbers have also been assigned, where each network number belongs to only one encapsulation type and each encapsulation type has only one network number. Although several encapsulation types can share the same interface, clients and servers with different encapsulation types cannot communicate directly with each other.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 335.

Q. 205

Which network mask should you place on a class C address to accommodate a user requirement for five networks with a maximum of 17 hosts on each network?

- A. 255.255.255.192
- B. 255.255.255.224
- C. 255.255.255.240
- D. 255.255.255.248

Answer: B

Explanation: 255.255.255.224 will support the configuration.

For 5 networks, we need a minimum of 3 bits. We get this in the following way: Add two to the requirement, then round up to the next power of 2. So, we get $5+2=7$, next highest is 8, because 2 to the 3rd power is 8. Thus 3 bits.

For 17 hosts, we do the same thing, we get $17+2=19$, next highest is 32, which is 5 bits, 2 to the 5th power is 32.

Now 3 bits network and 5 bits host make an octet. For a subnet mask, 3 bits are $128+64+32 = 224$.

Incorrect Answers:

A is incorrect; this supports too many hosts and not enough networks

C and D are incorrect; they support too few hosts and too many networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 230-236.

Q. 206

What is the protocol and what is the second part of the following network address?

255.255.255.255

- A. IP, a flooded broadcast
- B. IP, a directed broadcast
- C. IPX, a flooded broadcast
- D. IPX, a remote directed broadcast

Answer: A

Explanation: Flooded broadcast (255.255.255.255) are not propagate and are considered local and are sent to every host on the network.

Incorrect Answers:

B is incorrect; the IP identified is not directed broadcast. Direct broadcast use the IP of the network
C and D are incorrect; 255.255.255.255 is an IP address, not a IPX address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 231-233.

Q. 207

Which three protocols exactly match their transport layer functions? (Choose three)

- A. Route selection-IP
- B. Sliding window-UDP
- C. Well known ports-IP
- D. Route validation-ICMP
- E. Connection oriented-TCP/IP
- F. Three way handshake TCP/IP
- G. No acknowledgement-UDP

Answer: E, F, G

Explanation: The key to answering this question is the difference between connection and connectionless protocols. TCP is a connection orientated protocol that us a three way handshake to establish a connection. UDP is a connectionless protocol that does not guarantee delivery therefore there is no acknowledgements.

Incorrect Answers:

A is incorrect; route selection and IP are network layer, not transport layer functions.
B is incorrect; sliding windows is used in connection oriented, and UDP is connectionless.

C is incorrect; well-known ports are functions of UDP & TCP.

D is incorrect; ICMP, which is used for the ping command, does not validate routes.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 28-30.

Q. 208

Calculate the number of usable networks and usable hosts for the network 210.106.14.0/24.

- A. 1 network with 254 hosts
- B. 2 networks with 128 hosts
- C. 4 networks with 64 hosts
- D. 6 networks with 30 hosts

Answer: A

Explanation: As the last octet is for host addresses, the maximum number networks is 1 to determine the number of host use the formula $(2^8) - 2$. That is $256 - 2 = 254$.

Incorrect Answers:

B and C are incorrect; these combination of networks and hosts is not possible.

D is incorrect; this would require a subnet mask of 255.255.255.224.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 236.

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) page 238.

Q. 209

In which two modes can the ICMP ping command be used? (Choose two)

- A. User
- B. Privileged
- C. Global Configuration
- D. Interface Configuration

Answer: A, B

Explanation: The ping command is used to check network and host reachability. The ping command can be used at both the privileged exec mode and the user exec mode.

Incorrect Answers:

C is incorrect; the global configuration mode can be used to configure global parameters of the device. The ping command cannot be used in this mode.

D is incorrect; the interface configuration mode is used to configure a specific interface. The ping command cannot be used in this mode.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 99 and 167.
http://www.cisco.com/univercd/cc/td/doc/cisintwk/itg_v1/tr1902.htm

Q. 210

Which two IPX encapsulation names are correctly paired with the Cisco IOS encapsulation names? (Choose two)

- A. Ethernet_II-ARPA
- B. Ethernet_802.3-SAP
- C. Ethernet_802.2-LLLC
- D. Ethernet_SNAP-SNAP

Answer: A, D

Explanation:

When you configure an IPX network, you might need to specify a nondefault encapsulation type either on the Novell servers or on the Cisco router. Cisco and Novell have assigned a different name for the same encapsulation type. It is imperative that the encapsulations are the same for both the Novell equipment and the Cisco devices. Some of the encapsulation type pairings include:

Novell IPX Name	Cisco Name
Ethernet_802.3	novell-ether
Ethernet_802.2	sap
Ethernet_II	ARPA
Ethernet_SNAP	snap

Incorrect Answers:

B is incorrect; the proper pairing for 802.3 is novell-ether.
 C is incorrect; the proper pairing for 802.2 is sap.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 335-336.

Q.211

What is the result of using hierarchical addressing framework?

- A. Increase availability of addresses.
- B. Decrease distance between routers.
- C. Increase router memory requirements.
- D. No need to maintain routing information.

Answer: A

Explanation:

By partitioning the address ranges increases the availability of addresses. Instead of having one size fits all, the address ranges are pooled into different sizes to satisfy different needs, and provides a better distribution of addresses.

Incorrect Answers:

B is incorrect; hierarchical addressing will not effect the distance between routers.

C is incorrect; Hierarchical addressing should DECREASE router memory requirements.

D is incorrect; routing information is needed because the adjacent networks are not sequential in line with the current network, so a routing table is needed to know how to get to other networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 24-26.

Q.212

What is the link state routing protocol in the TCP/IP protocol stack?

- A. IP
- B. IS-IS
- C. NLSP
- D. OSPF
- E. RIP ver 2

Answer: D

Explanation: OSPF is a link-state protocol that can be used in routing that is part of the TCP/IP protocol stack.

Incorrect Answers:

A is incorrect; IP is a protocol, and a routed protocol, but NOT a routing protocol.

B is incorrect; IS-IS is a routing algorithm used by the ISO protocol stack.

C is incorrect; NLSP is part of the Novell protocol stack.

E is incorrect; RIP (and RIP V2) are distance vector protocols.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 274-276, 215-216, 331, and 278.

Q. 213

You have powered on a new router and you want to create an initial configuration. Which mode should you use?

- A. Copy mode
- B. User mode
- C. Setup mode
- D. Startup mode

Answer: C

Explanation:

If no configuration file exists for the router in NVRAM, the operating system executes a question driven initial configuration routine often referred to as the system configuration dialog. This special mode is also known as the setup dialog.

Incorrect Answers:

A is incorrect; there is no copy mode

B is incorrect; you can't do configurations in user mode. The router only enters this mode when it has already been configured.

D is incorrect; there is a startup procedure but not a startup mode.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 82-84.

Q. 214

What is an advantage of local area network LAN segmentation?

- A. Smaller collision domains.
- B. Elimination of broadcast.
- C. Decrease cost of implementation.
- D. Larger number of users within the same domain.

Answer: A

Explanation:

By making more collision domains, each domain is smaller, resulting in fewer collisions, and thus an advantage.

Incorrect Answers:

B is incorrect; broadcast still occurs on the segments, even with routers.

C is incorrect; due to extra hardware, or more advanced hardware, implementation is higher.

D is incorrect; by segmenting you are decreasing the number of users, thus reducing the number of contenders for the medium.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 30-31.

Q. 215

What are the generic parts of a network layer address?

- A. An internet network number and a URL .
- B. A vendor code and a serial number.

- C. A network number and host number.
- D. A broadcast number and unicast number.
- E. A domain identifier and a device identifier.

Answer: C

Explanation: The network layer address exists at Layer 3 of the OSI reference model. These address are hierarchical in that they define networks first and then devices or nodes on each of the networks.

Incorrect Answers:

- A is incorrect; a URL is used in the application layer, (HTTP).
- B is incorrect; this is describing a MAC address which is Layer 2.
- D is incorrect; this is not an addressing mode.
- E is incorrect; this is used in the application layer, Domain for DNS.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 20-29.

Q. 216

Which type of LAN segmentation device enables high-speed data exchange?

- A. Hub
- B. Bridge
- C. Switch
- D. Repeater

Answer: C

Explanation:

A switch can be used to gain high-speed data transfer between segments, especially when cut through is used. The internals of the switch are specifically designed for high-speed transfer, even with high volumes.

Incorrect Answers:

- A is incorrect; a hub causes the segment to be shared, and collisions slow down the segment. A hub does not cause segmentation.
- B is incorrect; a bridge usually separates a small amount of segments and with large amounts of data transfer across the bridge, the bridge can become a bottleneck.
- D is incorrect; a repeater extends the distance of the segment by amplifying electrical signals, but does not segment the LAN.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 32-38.

Q. 217

Click the task button. Place the name of OSI layer next to its description.

Place the name of the OSI layer next to its description

OSI Layer name

Description

place here

This layer segments and reassembles data into a data stream

place here

This layer manages device addressing, tracks the location of devices on the network, and determines the best way to move data

place here

This layer transmits the data and handles error notification, network topology, and flow control.

physical

data link

network

transport

session

Answer:

Place the name of the OSI layer next to its description

OSI Layer name	Description
transport	This layer segments and reassembles data into a data stream
network	This layer manages device addressing, tracks the location of devices on the network, and determines the best way to move data
data link	This layer transmits the data and handles error notification, network topology, and flow control.

physical	session

Explanation: The transport layer assembles the packets into data, and prepares the data for the session layer above. The Network layer determines the route of moving data. Remember the Network layer is layer 3, and routers work on layer 3. The network layer includes routing functions, and keep this in mind when the question says determines the best way to move data. On the datalink layer, the actual transmission occurs.

The physical layer does not modify the data and package it, not is involved with addressing and routing, so it does not apply. The session layer also does not modify data or determine routes or transmit data, so it would not apply to any of the above.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 12-13.

Q. 218

Which statement about switched and routed data flow is correct?

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- A. Switches create a single collision domain and a single broadcast domain. Routers provide separate broadcast domains.
- B. Switches create separate collision domains but a single broadcast domain. Routers provide a separate broadcast domains.
- C. Switches create a single collision domain and a separate broadcast domain. Router provides a separate broadcast domain as well.
- D. Switches create separate collision domains and separate broadcast domains. Routers provide separate collision domains.

Answer: B

Explanation:

Switches break up the collision domains, but it is still a single broadcast domain. Routers also create separate collision domains, but also separate broadcast domains, as routers usually do not pass broadcast traffic.

Incorrect Answers:

A is incorrect; switches create multiple collision domains.

C is incorrect; switches maintain one broadcast domain, and separate/multiple collision domains.

D is incorrect; switches maintain one broadcast domain.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 30-31.

Q. 219

Given the following IP address from the class C address range 192.168.21.12 your network plan needs addresses for twenty-eight small offices. Each office uses its own subnet. The network designs specify that you configure for 5 bits of subnetting when you configure for this in the Cisco IOS software. Which subnet mask should you use?

- A. 255.255.0.28
- B. 255.255.255.0
- C. 255.255.255.28
- D. 255.255.255.248
- E. 255.255.255.252

Answer: D

Explanation: We need to expand the class C subnet mask, and based on the calculation above, the last octet is divided into 5 bits network, 3 bits host, which is 248.

If I have 5 bits of subnetting for the network subnet, that leaves 3 bits for hosts.

- A. Bridge between management and sites.
- B. Routers to provide the most secure segmentation.
- C. A hub to provide the ease of management and a satisfactory alternative for the network security.
- D. An Ethernet switch to secure separation through programming the access list of each port of the switch.

Answer: B.

Explanation:

Routers provide better separation, dividing the segments into both separate collision and broadcast domains, and provide access lists for controlling security.

Incorrect Answers:

A, C, D are Layer 2 devices which breaks up the collision domains, but is still one broadcast domain. Security and filtering within these devices are primitive (although switching is a little more advanced). Any filtering that can be done at layer 2 is primitive and requires a lot of administrative effort.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 18-28.

Q. 222

How does a bridge function?

- A. It maintains a table of the IP address of the host connected to its internet segment
- B. It passes packets outside of its network segment if its IP address cannot be found on its table.
- C. It looks up the frames destination in its address table and sends the frame towards the destination.
- D. It maintains the table of the data link layer and network layer addresses for the host connected to its network segment.

Answer: C.

Explanation:

A transparent bridge stores information in memory in what is called a “forwarding table”. The forwarding table lists each end station (from which the bridge has heard a frame within a particular time period) and the segment on which it resides. When a bridge hears a frame on the network, it views the destination address and compares it to the forwarding table to determine whether to filter, flood or copy the frame into another segment.

Incorrect Answers:

A is incorrect; the forwarding table does not contain a list of IP address. Rather it contains a list of devices that it is connect to and on which segment each device resides.

B is incorrect; if the destination device is unknown to the bridge, the bridge forwards the frame to all segments except the one on which it was received. This process is known as flooding.

D is incorrect; the device maintains a list of the data link layer addresses for host connected to its network segment.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 22.

Q. 223

Which two statements about a reliable connection oriented data transfer are true? (Choose two)

- A. Recipients acknowledge receipt of data.
- B. When buffers are filled to capacity, datagrams are discarded and not re transmitted.
- C. Windows are used to control the amount in outstanding acknowledged data segments.
- D. If the segments timer expires between receipt of an acknowledgement the sender drops the connection.
- E. The receiving device waits for acknowledgements from the sending device before accepting more data segments.

Answer: A, C.

Explanation:

Connection orientated protocols, such as TCP, communication use acknowledgement of packets. This is how error control is possible. To govern the flow of data between devices, TCP uses a flow control mechanism. The receiving TCP reports a “window” to the sending TCP. This window specifies the number of octets, starting with the acknowledgment number, that a receiving TCP is currently prepare to receive.

TCP windows sizes are variable during the lifetime of the connection. Each acknowledgment contains a window advertisement that indicates how many bytes the receiver can accept. TCP also maintains a congestion control window that is normally the size as the receiver’s window but is cut in half when a segment is lost (for example, there is congestion). This approach permits the window to be expanded or contracted as necessary to manage buffer space and processing.

Incorrect Answers:

- B is incorrect; with connection orientate protocols packet delivery is guaranteed. Packet will not be dropped. Flow control (windowing) addresses the buffer issue.
- D is incorrect; if the sending system does not receive an acknowledgement from the receiving system then the packet will be resent.
- E is incorrect; the receiving device sends the acknowledgement of packets and this states how much data the receiving device can receive.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 213-4.

Q. 224

Which three functions are supported by connection oriented services? (Choose three)

- A. Connection parameters are synchronized
- B. Any loss or duplication of packets can be corrected

- C. The data packet is independently routed and the service does not guarantee the packet will be processed in order.
- D. A data communication path is established between the requesting entity and the peer device on the remote end system.

Answer: A, B, D.

Explanation:

In order to establish a connection-orientated service, the connection must first be established. An example of this would be the TCP/IP suites use of the three-way handshake. The sending and receiving of synchronization and acknowledgment packets between the sending system and the receiving system accomplish a three-way handshake. Errors can be corrected when the sender does not receive an acknowledgment, within a specified amount of time, from the receiving system the packet will be resent.

Incorrect Answers:

C is incorrect; due to the acknowledgement of packets, the order that packets are received is ensured.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 29-30.

Q. 225

What are two purposes for using switches? (Choose two)

- A. To reduce collisions
- B. To increase collisions
- C. To increase the number of collision domains
- D. To decrease the number of collision domains
- E. To decrease the number of broadcast domains

Answer: A, C.

Explanation:

A switch creates multiple collision domains, and reduces the number of nodes in the domain. This results in less contention and interference which in turn reduces the number of collisions.

Incorrect Answers:

B is incorrect; switches are design to REDUCE collisions and not increase them.

D is incorrect; when a switch segments a network it increase the number of domain and it does not reduce them.

E is incorrect; a switch neither increase nor decreases the broadcast domains.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 30-31.

Q. 226

What is an example of a valid MAC address?

- A. 192.201.63.251
- B. 19-22-01-63-25
- C. 0000.1234.FEG
- D. 00-00-12-34-FE-AA

Answer: D.

Explanation: MAC address is a uniquely assigned address to each device on the network. The MAC address is 48 bit in length and are expressed as hexadecimal digit. The first 6 digits specify the manufacturer ID and the remaining 6 are unique to host. No two MAC addresses can be same. In addition MAC addresses are usually comprised of 6 pairs, each pair can be two number, two letters or a combination of a number and a letter.

Incorrect Answers:

A is incorrect; 192.201.63.251 contains too many numbers and is an IP address.

B is incorrect; there are only 6 pair combinations in 19-22-01-63-25.

C is incorrect; 0000.1234.FEG is short one letter or one number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 20.

Q. 227

Which command would you use to enable IP RIP version 1 on a router?

- A. Router RIP
network 172.16.1.0
network 10.1.0.1
- B. Router RIP
network 172.16.0.0
network 10.0.0.0
- C. Router RIP
network 172.16.1.0 172.16.1.1
network 10.1.0.0 10.1.1.1
- D. Router RIP
network 172.16.1.0 255.255.255.0
Network 10.1.0.0 255.255.0.0

Answer: B.

Explanation: To enable RIP version 1 not only does the router rip command need to be used but also it must be followed by the network command. The network command must be issued for each directly connected network. The network command must be followed by a valid network address.

Incorrect Answers:

A is incorrect; is this series of commands the network 10.1.0.1 is not a valid command.

C is incorrect; if 4 networks are directly connected they must have their own network command.

D is incorrect; there is no need to include a subnet mask with a network command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 278-9.

Q. 228

Which one method for transporting frames through a switch which checks the destination address in the frame header immediately begins forwarding the frame. What is this frame transmission method called?

- A. CSMA/CD
- B. FULL DUPLEX
- C. CUT THROUGH
- D. HALF DUPLEX
- E. FRAGMENTATION
- F. STORE AND FORWARD

Answer: C.

Explanation:

In cut-through mode, the switch checks the destination address (DA) as soon as the header is received and immediately begins forwarding the frame. Depending on the network transport protocol being used (connection or connectionless orientate), there is a significant decrease in latency from input port to output port. The delay in cut-through switching remains constant regardless of the size of the frame , because this switching mode starts to forward the frame as soon as the switch reads the DA.

Incorrect Answers:

A is incorrect; CSMA/CD is not a method of transporting frames. Rather it is a set of rules that are used to determine how network devices will respond to two different devices attempting to communicate on a data channel at the same time.

B is incorrect; Full duplex refers to how two switches communicate with each other. In this case, there is a transmission of data in two directions at the same time.

D is incorrect; half duplex refers to how two switches communicate with each other. With half duplex the communication can only be in one direction and if not a collision will occur.

E is incorrect; this is not a method of frame communication.

F is incorrect; in store and forward the entire frame must first be received before it can be forwarded on.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-5.

Q. 229

Which two statements about the Frame Tagging are true? (Choose two)

- A. A Filtering table is developed for each switch.
- B. Frame Tagging defines a unique user defined ID to each frame.
- C. A unique identifier is placed in the header of each frame as it is forwarding between switches.
- D. Frame Tagging is technique that examines particular information about each frame based on user-defined offsets.

Answer: B, C.

Explanation: Frame tagging or frame identification uniquely assigns a user-defined Id to each frame. This is sometimes referred to as VLAN ID. Cisco created frame tagging to be used when an Ethernet frame traverses a trunked link.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 186-187.

Q. 230

Which two physical interfaces does PPP support? (Choose two)

- A. Ethernet
- B. Token Ring
- C. Synchronous Serial
- D. Asynchronous Serial

Answers: C, D.

Explanation: Point-to-Point Protocol (PPP) provides router-to-router and host-network connections over synchronous and asynchronous circuits. PPP was designed to work with several network layer protocols, including IP and IPX. It also has built in security features such PAP (Password Authentication Protocol) and CHAP (Challenged Handshake Authentication Protocol).

Incorrect Answers:

A is incorrect; Ethernet is a LAN (Local Area Network) architecture. It uses either a star or a bus topology to exchange data.

B is incorrect; Token Ring is a type of network in which the computers are arranged in a circular fashion. These computers pass a token between each other. This token is used to communicate data.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 373.

Q. 231

What is a disadvantage of using a connection-oriented protocol such as TCP?

- A. Packet acknowledgement may add overhead
- B. Packets are not tagged with sequence numbers
- C. Loss or duplication of data packets is more likely to occur

- D. The application layer must assume responsibility for correct sequencing of the data packets.

Answer: A.

Explanation: One of the benefits of a connection-orientated protocol is that there is a guarantee of delivery of data. This guarantee is provided as the two communicating exchange PDUs during transmission and if an acknowledgement is not received then the data is retransmitted. As can be imagined this exchange of PDUs can cause an increase in overhead.

Incorrect Answers:

B: Sequence numbers are added to insure correct order

C: Packet loss, duplication, and ordering are handled by connection-oriented protocols.

D: The transport layer (such as TCP) handles sequencing.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 29-30.

Q. 232

Enter the command to start IP, RIP version1 routing on a Cisco router?

Answer: Router rip

Explanation: The key characteristics of RIP include: it is a distance vector protocol, hop count is the metric used for path selection, it maximum allowable hop count is 15, it broadcasts it entire routing table every 30 seconds by default and it can be load balanced as many as six equal cost paths (4 paths are the default). To configure RIP not only does the router rip command need to be inputted but also it must be followed by the network command. The network command must be issued for each directly connected network.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 278-9.

Q. 233

Which two statements about the store and forward switching method are true? (Choose two)

- A. Latency remains constant regardless of frame size.
- B. Latency through the switch varies with frame length.
- C. The switch receives the complete frame before beginning to forward it.
- D. The switch checks the destination address as soon as it receives the header and begins forwarding the frame immediately.

Answer B, C.

Explanation:

In store and forward mode, the switch must receive the complete frame before forwarding takes place. The destination and source addresses are read, the cyclic redundancy check (CRC) is performed, relevant filters are applied, and the frame is forwarded. If the CRC is bad, the frame is discarded. The latency (or delay) through the switch varies with frame length.

Incorrect Answers:

A: Is wrong because the latency changes with the frame size.

D: Is wrong because it waits for the complete name and not merely the destination address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 162.

Q. 234

You are configuring a new catalyst switch that you want to manage remotely from workstations on other network segment within your enterprise.

Which of the following are required to allow remote management of the switch over IP? (Choose two.)

- A. The Frame Relay encapsulation on the physical interface.
- B. The local DLCI on each subinterface.
- C. An IP address on the physical interface.
- D. The subinterface type as point-to-point

Answer: C

Q. 235

Which sequence of actions will allow telnetting from a user's PC to a router using TCP/IP?

- A. Connect the PC's COM port to the router's console port using a straight-through cable.
- B. Connect the PC's COM port to the router's console port using a crossover cable.
- C. Connect the PC's COM port to the router's Ethernet port using a straight-through cable.
- D. Connect the PC's Ethernet port to the router's Ethernet port using a crossover cable.
- E. Connect the PC's Ethernet port to the router's Ethernet port using a rollover cable.
- F. Connect the PC's Ethernet port to the router's Ethernet port using a straight-through cable.

Answer: D

Q. 236

Full Duplex Ethernet can operate between which of the following devices? (Choose two.)

- A. Switch to host.
- B. Switch to switch.
- C. Hub to hub.
- D. Switch to hub.
- E. Hub to host.

Answer: A, B

Q. 237

What is the bit pattern for the first octet of a class A network address?

- A. 0xxxxxxx
- B. 10xxxxxx
- C. 110xxxxx
- D. 1110xxxx
- E. 11110xxx

Answer: A

Explanation: Class A networks use a default subnet mask of 255.0.0.0 and have 0-126 as their first octet. 126 binary is 01111111.

Q. 238

What is the network address for a host with the IP address 201.100.5.68/28?

- A. 201.100.5.0
- B. 2001.100.5.32
- C. 201.100.5.64
- D. 201.100.5.65
- E. 201.100.5.31

F. 201.100.5.1

Answer: C

Q. 239

Which devices can be used to segment a network? (Choose three.)

- A. hub
- B. repeater
- C. switch
- D. bridge
- E. router
- F. media converter

Answer: C, D, E

Q. 240

Which WAN service would a small office (SOHO) most likely choose as a backup for leased lines?

- A. frame relay with svc
- B. dedicated serial line
- C. isdn with ddr
- D. atm

Answer: C

Q. 241

What is the effect of the following access list condition?

access.list 101 permit ip 10.25.30.0 0.0.0.255 any

- A. Permit all packets matching the first three octets of the source address to all destinations.

- B. Permit all packets matching the last of the destination address and accept all source address.
- C. Permit all packets from the third subnet of the network address to all destinations.
- D. Permit all packets matching the host bits in the source address to all destinations.
- E. Permit all packets to destination matching the first three octets in the destination address..

Answer: A

Q. 242

Which of the following should be done prior to backing up an IOS image to a network server? (Choose three.)

- A. Make sure that the network server can be accessed.
- B. Check that the authentication for access is set.
- C. Assure that the network server adequate space for the code image.
- D. Verify any file naming and path requirements.
- E. Make sure that the server can load and run the bootstrap code.

Answer: A, C, D

Q. 243

A network administrator is verifying the configuration of a newly installed host by establishing an ftp connection to a remote server.

Which layer of the protocol stack is the network administrator using for this operation?

- A. application
- B. presentation
- C. session
- D. transport
- E. data link
- F. internet

Answer: A

Q. 244

Which of the following are options for Frame Relay lmi types? (Choose three.)

- A. IETF
- B. Q931
- C. Q933A
- D. IEEE
- E. CISCO
- F. ANSI

Answer: C, E, F

Q. 245

When a router boots. Which default search sequence does it use to locate the IOS software?

- A. Flash, TFTP server, ROM
- B. NVRAM, TFTP server, ROM
- C. ROM, Flash, TFTP server
- D. ROM, NVRAM, TFTP server

Answer: A

Q. 246

In contrast to connectionless services, which of the following are generally regarded as characteristics of connection-oriented network services? (Choose two.)

- A. non-reliable
- B. reliable
- C. less bandwidth-intensive
- D. handshaking

Answer: B, D

Q. 247

What is the default encapsulation type for Frame Relay on a Cisco router?

- A. HDLC
- B. PPP
- C. IETF
- D. Cisco
- E. ANSI

Answer: C

Q. 248

What is the range of binary values for the first octet in class B addresses?

- A. 10000000-11111111
- B. 00000000-10111111
- C. 10000000-10111111
- D. 10000000-11011111
- E. 11000000-11101111

Answer: C

Q. 249

Which of the following are TCP/IP Application layer protocols? (Choose three.)

- A. ARP
- B. HTTP
- C. SMTP
- D. ETP
- E. ICMP

Answer: B, C, E

Q. 250

What is the purpose of ISL and 802.1q frame tagging?

- A. They provide best path determination.
- B. They allow the exchange of filtering tables.
- C. They specify different implementations of the Spanning-Tree Protocol.
- D. They provide interswitch VLAN communication.

Answer: D

Q. 251

What is the purpose of Spanning-Tree in a switched LAN?

- A. To provide a mechanism for network monitoring in switched environments.
- B. To prevent routing loops in networks with redundant paths.
- C. To prevent routing switching loops in networks with redundant switched paths.
- D. To manage, the addition, deletion, and naming of VLANs across multiple switches.
- E. To segment a network into multiple collision domains.

Answer: C

Q. 252

Which OSI layer ensures reliable end-to-end delivery of data?

- A. application
- B. presentation
- C. session
- D. transport
- E. network

Answer: D

Q. 253

Which of the following statements describe the codes displayed in the show ip route command? (Choose two.)

- A. I-Indicates a route was learned through an Internal protocol.
- B. S-Indicates a route was learned through static command.
- C. R-Indicates a route was learned through RIP
- D. .S-Indicates a route was learned through a serial port.
- E. R-Indicates a route was learned through a reliable port.

Answer: B, C

Q. 254

Which of the following Ethernet standards can operate in full-duplex mode? (Choose two.)

- A. 10Base2
- B. 10Base5
- C. 10BaseT
- D. 100BaseT

Answer: C, D

Q. 255

What is the correct order of protocol data units in data encapsulation?

- A. Data, Frame, Packet, Segment, Bit
- B. Data, Frame, Segment, Packet, Bit
- C. Data, Packet, Frame, Segment, Bit
- D. Data, Packet, Segment, Frame, Bit
- E. Data, Segment, Frame, Packet, Bit
- F. Data, Segment, Packet, Frame, Bit

Answer: F

Q. 256

In what switch mode read first part of frame with destination address and send frame immediately?

- A. Store-and-forward
- B. Cut-through
- C. Fragment-free

Answer: B

Q. 257

Which of the following are benefits of VLANs? (Choose threee.)

- A. They increase the size of collision domains.
- B. They allow logical grouping of users by function.
- C. They enhance network security.
- D. They increase the size of broadcast domains while decreasing the number of broadcast domains.
- E. They increase the number of broadcasts domain while decreasing their size.
- F. The simplify switch administration.

Answer: B, C, E

Q. 258

What are the advantages of using the OSI layered network model? (Choose three.)

- A. Allows multiple-vendor development through standardization of network components.
- B. Creates a list of communication rules that all companies must implement to get onto the Internet.
- C. Allows various types of network hardware and software to communicate.
- D. Prevents changes in one layer from affecting other layers, so it does not hamper development.
- E. Allows companies to develop proprietary interfaces.

Answer: A, C, D

Q. 259

Which of the following describes isdn bri service?

- A. 2d+b
- B. 23d+b
- C. 2b+d
- D. 23b+d

Answer: C

Q. 260

What type of switching create variable latency through the switch?

- A. Store-and-forward
- B. Cut-through
- C. Fragment-free

Answer: A

Q. 261

Which of the following are used to prevent routing loops in network that use distance vector routing protocols? (Choose two.)

- A. link-state advertisement (LSA)
- B. Spanning Tree Protocol
- C. shortest path first tree
- D. split horizon
- E. hold-down timers

Answer: D, E

Q. 262

A new host has been connected to a workgroup switch. Although its Layer 3 configuration is correct, the host is unable to access the server resources on its network segment.

What is the likely cause of this problem?

- A. The router lacks a routing table entry for the new host.
- B. The host switch port is assigned to the incorrect VLAN.
- C. The host MAC address is incorrectly configured.
- D. A VTP instance for the new host has not been installed.

Answer: C

Q. 263

Which of the following need to be modified in the password recovery process? (Choose two.)

- A. nvram
- B. configuration register
- C. boot flash
- D. cmos
- E. flash

Answer: A, B

Q. 264

A small enterprise has a class C network license. The enterprise requires five usable subnets, each capable of accommodating at least 18 hosts.

Enter the appropriate subnet mask below.

Answer: 255.255.255.224

Q. 265

Which configuration register setting tells the router to look in NVRAM for the boot sequence?

- A. 0x42
- B. 0x2102
- C. 0x001
- D. 0x2101

Answer: B

Q. 266

What do you use for loop avoidance? (Choose two.)

- A. Poison reverse.
- B. Split horizon.
- C. Link state protocol.

Answer: A, B

Q. 267

Which of the following access list statements will deny all telnet connections to subnet 10.0.1.0/24?

- A. access-list 15 deny tcp 10.0.1.0 255.255.255.0 eq telnet
- B. access-list 115 deny tcp any 10.0.1.0 eq telnet
- C. access-list 115 deny udp any 10.0.1.0 eq 23
- D. access-list 115 deny tcp any 10.0.1.0 0.0.0.255 eq 23
- E. access-list 15 deny telnet any 10.0.1.0 0.0.0.255 eq 23

Answer: D

Q. 268

Which of the following statements regarding routed and routing protocols are true? (Choose two.)

- A. A routed protocol is assigned to an interface and determines the method of packet delivery.
- B. A routing protocol determines the path of a packet through a network.

- C. A routed protocol determines the path of a packet through a network.
- D. A routing protocol operates at the transport layer of the OSI model.
- E. A routed protocol updates the routing table of a router.

Answer: A, B

Q. 269

Which commands will allow you to identify the local dlci number? (Choose two.)

- A. show frame-relay local-dlci
- B. show frame-relay pvc
- C. show frame-relay dlci
- D. show frame-relay map
- E. show ip route

Answer: B, D

Q. 270

You have a Class B network address with a subnet mask of 255.255.255.0.

Which of the following statements are true regarding the resulting network? (Choose two.)

- A. There are 254 usable hosts per subnet.
- B. There is one usable network.
- C. There are 255 usable hosts per subnet.
- D. There are 254 usable subnets.
- E. There are 30 usable subnets.
- F. There are 62 usable hosts per subnet.

Answer: A, D

Q. 271

You have just finished configuring a router. The changes have been made successfully and everything is working correctly. You then save your changes and reboot the router. None of your changes are active after reboot. However, when you look at the contents of startup-config, your changes are there.

Which of the following indicates the source of the problem?

- A. Hardware failure NMVRAM prevents the router from loading the configuration.
- B. Startup-config in flash is corrupt and cannot be analyzed.
- C. Router configuration register set to bypass startup configuration.
- D. Startup-config in NVRAM is corrupt and cannot be analyzed

Answer: C

Q. 272

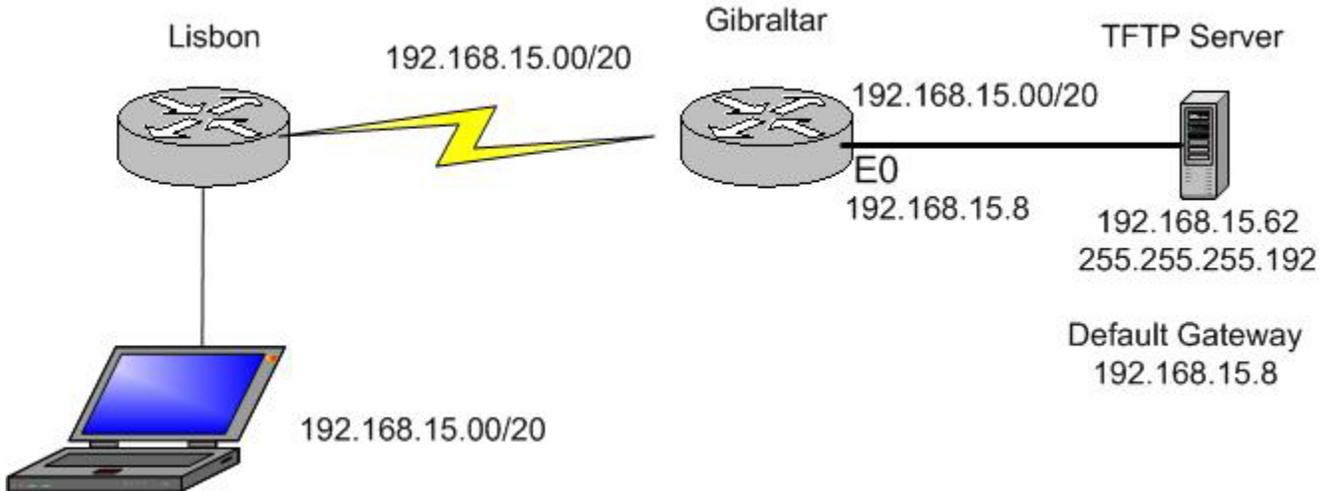
What does IGRP use to determine the best path to a destination?

- A. The highest metric value.
- B. The lowest composite metric value.
- C. The lowest hop-count and delay.
- D. The highest bandwidth and reliability
- E. The lowest administrative distance.

Answer: B

Q. 273

Diagram



A network administrator has installed a new router in the Lisbon office and is unable to backup the IOS image of the new router to a TFTP server located in the Gibraltar office. Given the network diagram, identify the source of the problem.

- A. Incorrect default gateway of the tftp server.
- B. Incorrect subnet mask of the tftp server.
- C. Incorrect IP address of the tftp server.
- D. Incorrect IP address on E0 of the Gibraltar server.
- E. Incorrect subnet mask on the Lisbon router.

Answer: E

Q. 274

What is the correct command to change the bandwidth of the interface to 64K?

- A. bandwidth 64
- B. band width 64
- C. bandwidth 64000
- D. band width 64000
- E. bandwidth 64K

Answer: A

Q. 275

Which Frame Relay feature is responsible for transmitting keepalives to ensure that the PVC does not shut down because of inactivity?

- A. DLCI
- B. BECN
- C. FECN
- D. LMI
- E. CIR
- F. de

Answer: D

Q. 276

Which connection allows the use of full-duplex Ethernet? (Choose three.)

- A. Switch to host.
- B. Switch to switch.
- C. Hub to hub.
- D. Switch to hub.
- E. To host.

Answer: A, B, E

Q. 277

Identify the effect of Ctrl-Z?

- A. Exits back to privileged exec mode.
- B. Disconnects from the router.
- C. Aborts the ping operation.
- D. Exits privileged exec mode.

Answer: A

Q. 278

Which WAN technology was designed to work over traditional phone lines and provide small offices and user with higher speed digital dial-up service?

- A. frame relay
- B. x.25
- C. ATM
- D. ISDN

Answer: D

Q. 279

Which WAN technology uses high-performance digital lines and IS packet switched?

- A. FDDI
- B. ISDN
- C. ATM
- D. Frame Relay

Answer: D

Q. 280

Question on PPP authentication. We have two Cisco routers with the hostnames Router1 and Router2. Router1 uses username Router2 and password PassRouter1.

How would you set the username and password on Router2 for PPP authentication between Router1 and Router2?

- A. Username Router1 password PassRouter1
- B. Username Router2 password PassRouter1
- C. Username Router1 password PassRouter2
- D. Username Router2 password PassRouter2

Answer: A

Q. 281

What are possible causes of LAN traffic congestion? (Choose four.)

- A. Too many hosts in a broadcast domain.
- B. Full Duplex operation.
- C. Broadcast storms.
- D. Multicasting.
- E. Segmentation.
- F. Low bandwidth.

Answer: A, C, D, F

Q. 282

What output interface status would you see if peer interface (on second end of link) is administratively down?

- A. interface is down, line protocol is down
- B. interface is down, line protocol is up
- C. interface is up, line protocol is down
- D. interface is up, line protocol is up

Answer: A

Q. 283

What is the protocol and what is the second part of the following network address? (Choose all that apply.)

172.161.0.254 mask 255.255.0.0

- A. IPX MAX address
- B. IP Class C director broadcast

- C. Private IP address node number
- D. Public IP address directed broadcast
- E. Private IP address directed broadcast

Answer: C

Q. 284

What IP address class is multicast?

- A. A
- B. B
- C. C
- D. D
- E. E

Answer: D

Q. 285

Which of the following metrics does IGRP use by default to determine the best path to destination? (Choose two.)

- A. Maximum Transmission Unit
- B. Cumulative Interface delay.
- C. Path bandwidth value.
- D. Reliability from source to destination.
- E. Link loading in bits-per-second.
- F. Hold-down timers for updates.

Answer: B, C

Q. 286

What must you do to test connectivity on a dial on demand routing (DDR) link?

- A. Increase the idle import parameter
- B. Send interesting traffic across the link
- C. Switch
- D. Repeater

Answer: B

Q. 287

You got a new testing application on a new server in your office. This testing application work with a few hosts. The new server and hosts work with 10 Mbps and make a bandwidth problem for all the rest non-testing hosts. The rest of the hosts in your office network with 2 Mbps.

What is the most economical decision would you implement for resolving this problem?

- A. Install new 100 Mbps switches, and change all host's NIC to 100 Mbps.
- B. Segment network with router, and place all testing hosts and the new server into a separate subnet (network).
- C. Add a Bridge and separate the two networks

Answer: B

Q. 288

A user issues the command ping 204.211.38.52.

Which of the following physical is used to test physical connectivity between the two devices?

- A. ICMP echo request
- B. Information request
- C. timestamp reply
- D. redirect
- E. source quench

Answer: A

Q. 289

How do you change the Console password to "cisco"?

- A. Router(config)# line con 0 Router(config-line)# login Router(config-line)# password cisco
- B. Router(config)# line con 0 Router(config-line)# login Router(config-line)# password Cisco

Answer: A

Q. 290

Cisco IOS allows which keystroke(s) to complete the syntax of a partially entered command?

- A. Ctrl+shift+6 then x.
- B. Ctrl+Z
- C. TAB
- D. /?
- E. Shift

Answer: C

Q. 291

Given an IPX network with redundant paths, what command will configure load balancing?

- A. ipx load-balance
- B. ip maximum-paths 2
- C. ip maximum-paths 2
- D. ipx load-share

Answer: C

Q. 292

Which OSI layer uses positive acknowledgement and retransmission to ensure reliable delivery?

- A. Application
- B. Presentation
- C. Session
- D. Transport
- E. Data link
- F. Physical

Answer: D

Q. 293

Which of the following are associated with the Presentation Layer of the OSI model? (Choose three.)

- A. Rich Text Format (RTF)
- B. Quick Time movie
- C. FTP
- D. TFTP
- E. SMTP
- F. MIDI

Answer: A, B, F

Q. 294

Which of the following are reasons to use a bridge to segment a network? (Choose two.)

- A. To reduce broadcasts within collisions domains.
- B. To reduce collisions within broadcasts domain.
- C. To increase the number of broadcasts domains.
- D. To increase the broadcasts within collisions domains.
- E. To increase the number of collision domains.
- F. To increase the efficiency of routing.

Answer: B, E

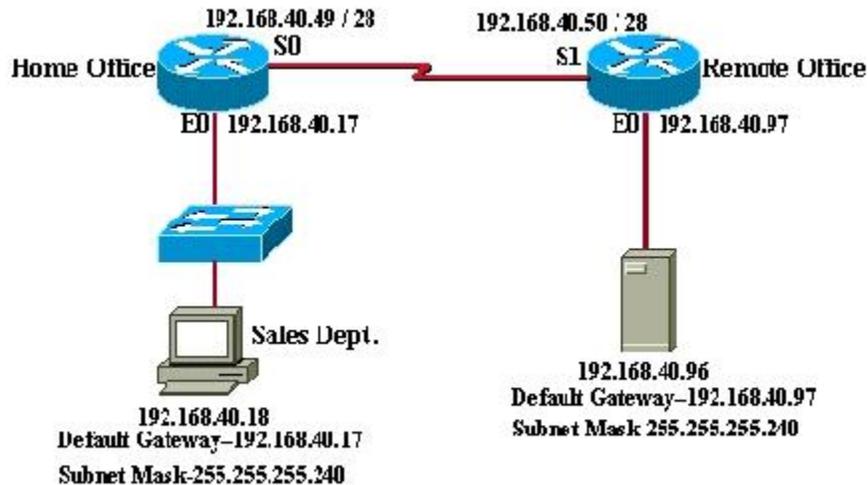
Q. 295

Which of the following are application layer protocols? (Choose two.)

- A. Ping
- B. Telnet
- C. FTP
- D. TCP
- E. IP

Answer: B, C

Q.296



Hosts in the Sales Department are unable to access a new server at the remote office. Consider the IP addressing scheme in the accompanying graphic to determine the problem.

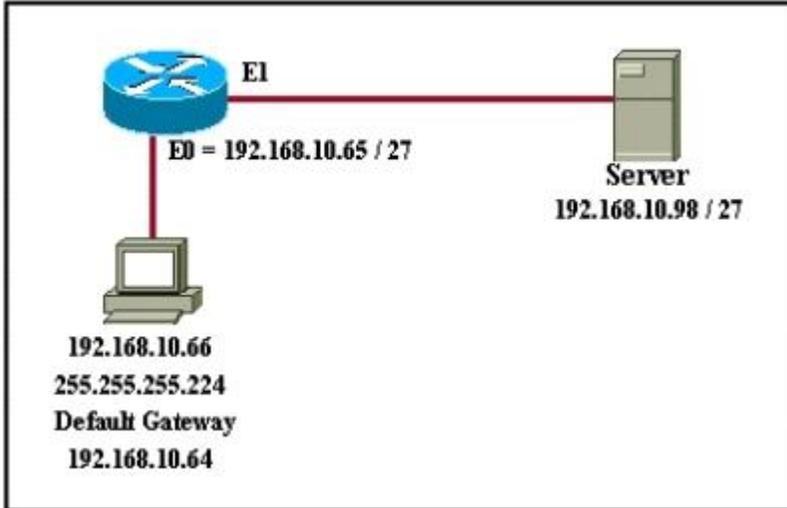
- A. The default gateway of the workstations in the sales department is incorrect.
- B. The subnet mask of the workstations in the sales department is incorrect.
- C. The default gateway of the server at the Remote Office is incorrect.
- D. The host address of the server at the Remote Office is invalid.

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- E. The serial 0 interface on the Home Office router and the serial 1 interface on the Remote Office router are not on the same subnetwork.

Answer: A

Q.297



Company ABC has just added an employee workstation to its network. The employee is unable to connect to the server at IP address 192.168.10.98/27. Identify the incorrectly configured network parameter.

- A. workstation IP address.
- B. workstation subnet mask.
- C. workstation default gateway.
- D. router interface E0 IP address.

Answer: C

Q.298

Which type of router memory normally stores the start-up configuration?

- A. RAM

- B. ROM
- C. FLASH
- D. NVRAM

Answer: D

Q299

- A. Serial 0 is up, line protocol is down.
- B. Serial 0 is down, line protocol is down.
- C. Serial 0 is down, line protocol is up.
- D. Serial is administratively down, line protocol is down.
- E. Serial 0 is administratively down, line protocol is up.
- F. Serial 0 is administratively up, line protocol is down.

Answer: B

Q.300

Which commands displays RIP routing updates as they are sent and received by the router?

- A. show ip protocols
- B. show ip route rip
- C. debug ip rip
- D. debug ip updates
- E. debug ip transactions

Answer: C

Q.301

Rachel is adding a balanced hybrid routing protocol to her network. Which of the following commands would she use to start the routing process?

- A. router rip
- B. router igrp 100
- C. router ospf 1
- D. router eigrp 100

Answer: D

Q.302

Which command must be entered when connecting two routers without external DCE devices via a serial link?

- A. serial up
- B. line protocol up
- C. clock rate
- D. dce rate
- E. dte rate

Answer: C

Q.303

What function does the up arrow key provide within the Cisco router IOS?

- A. Recalls the previous command line.
- B. Moves the cursor one line up.
- C. Redisplays the current command line.
- D. Capitalize the command line.

Answer A

Q.304

Which of the following statements are true regarding full-duplex Ethernet when compared to half-duplex Ethernet? (Choose two.)

- A. Full-duplex Ethernet consists of a shared broadcast domain, while half-duplex Ethernet consists of a private broadcast domain.
- B. Full-duplex Ethernet is collision free, while half-duplex Ethernet is subject to collisions.
- C. Full-duplex Ethernet provides higher throughput than half-duplex Ethernet of the same bandwidth.
- D. Full-duplex Ethernet provides lower throughput than than half-duplex Ethernet of the same bandwidth.
- E. Full-duplex Ethernet consists of a shared cable segment, while half-duplex Ethernet provides a point-to-point link.

Answer: B, C

Q.305

Which device can be used to segment broadcast domains?

- A. hub
- B. router
- C. bridge
- D. repeater

Answer: B

Q.306

Which of the following are the characteristics of a Layer 2 Ethernet switch? (Choose two.)

- A. Establishes a single collision domain.
- B. Establishes multiple collision domains.
- C. Builds a dynamic MAC address mapping table.
- D. Maintains a routing table.
- E. Forwards unicast frames only.

Answer: B, C

Q.307

You are unable to telnet to a router at address 203.125.12.1 from a workstation with the IP address of 203.125.12.23. You suspect that there is a problem with your protocol stack. Which of the following actions is most likely to confirm your diagnosis?

- A. ping 127.0.0.0
- B. ping 203.125.12.1
- C. telnet 127.0.0.1
- D. ping 127.0.0.1
- E. tracert 203.125.12.1

Answer: D

Q.308

Which of the following is true concerning Frame Relay multipoint subinterfaces?

- A. An IP address is required on the physical interface of the central router.
- B. All routers are required to be fully meshed.
- C. All routers must be in the same subnet to forward routing updates and broadcasts
- D. Multipoint is the default configuration for Frame Relay subinterfaces.

Answer: D

Q.309

What is the purpose of DLCIs in Frame Relay?

- A. They determine the Frame Relay encapsulation type.
- B. They identify the logical circuit between a local router and a Frame Relay WAN switch.
- C. They represent the keepalives used to maintain the PVC in an active state.
- D. They represent the physical address of the router attached to a Frame Relay network.

Answer: B

Q.310

Which of the following WAN services use two data link layer encapsulations, one for data and one for signaling?

- A. ISDN
- B. Frame Relay
- C. ATM
- D. FDDI

Answer: A

Q.311

A small enterprise has class C network license. The enterprise requires 5 usable subnets, each capable of accommodating at least 18 hosts. Enter the appropriate subnet mask below.

Answer: 255.255.255.224

Q.312

Which command correctly configures an IP address on a Cisco router interface?

- A. router(config-if)# ip address 172.18.32.1 subnet mask 255.255.252.0
- B. router(config-if)# 172.18.32.1 255.255.252.0
- C. router(config-if)# ip address 172.18.32.1 255.255.252.0
- D. router(config-if)# 255.255.252.0 subnet mask 255.255.252.0
- E. router(config-if)# ip address 172.18.32.1/22
- F. router(config-if)# ip address 172.18.32.1 subnet mask /22

Answer: C

Q.313

Calculate the number of usable network and host addresses for 213.105.72.0/28.

- A. 62 networks and 2 hosts
- B. 6 networks and 30 hosts
- C. 8 network and 32 hosts
- D. 16 networks and 16 hosts
- E. 14 networks and 14 hosts

Answer: E

Q.314

Which of the following is a subnet broadcast address for network 201.57.78.0/27?

- A. 201.57.78.33
- B. 201.57.78.64
- C. 201.57.78.87
- D. 201.57.78.97
- E. 201.57.78.159
- F. 201.57.78.254

Answer: B

Q.315

What is the decimal and hexadecimal equivalent of the binary number 10101010?

Answer: Decimal : 170
Hexadecimal : AA

Q.316

```
#debug ppp authentication
PPP Serial1: Send CHAP challenge id=34 t remote
PPP Serial1: CHAP challenge from P1R2
PPP Serial1: CHAP response received from P1R2
PPP Serial1: CHAP response id=34 received from P1R2
PPP Serial1: Send CHAP success id=34 to remote
PPP Serial1: Remote passed CHAP authentication
PPP Serial1: Passed CHAP authentication
PPP Serial1: Passed CHAP authentication with remote
```

Based on the debug output shown, what type of handshake occurred for PPP authentication?

- A. one-way
- B. two-way
- C. three-way
- D. no handshake required during authentication.

Answer: C

Q.317

What does the word “any” mean in the following extended access list statement?

access-list 101 permit ip any 192.168.69.0 0.0.0.255 eq tcp

- A. check any of the bits in the source address
- B. permit any wildcard mask for the address
- C. accept any source address
- D. check any bit in the destination address
- E. permit 255.255.255 0.0.0.0
- F. accept any destination address

Answer: C

Q.318

Which command sends and receives ICMP echo messages to verify connectivity from host to host?

- A. ping
- B. tracert
- C. netstat
- D. show cdp neighbors details
- E. show ip route
- F. traceroute

Answer: A

Q.319

At which OSI layer is the best path to a network determined?

- A. Data Link
- B. Network

- C. Physical
- D. Presentation
- E. Session
- F. Transport

Answer: B

Q.320

Which layer in the TCP/IP model corresponds to the OSI network layer?

- A. Application
- B. Transport
- C. Internet
- D. Network
- E. Physical

Answer: C

Q.321

You are the network administrator of the Tasti-Treats Cereal Company. You receive a call from a user who is unable to reach a server at a remote site. After further review, you discover the following information:

Local PC – 10.0.3.35/24

Default gateway – 10.0.3.1

Remote server – 10.0.5.250/240

You then conduct the following tests from the offending local PC:

ping 127.0.0.1 – successful

ping 10.0.3.35 – successful

ping 10.0.3.1 – unsuccessful

ping 10.0.5.250 – unsuccessful

Which of the following problems would create the test results listed above?

- A. TCP/IP not correctly installed
- B. Local physical layer problem

- C. Local NIC not functioning
- D. Remote physical layer problem

Answer: B

Explanation: The client was only able to ping itself, not the default gateway or the remote server. A local physical layer problem, for example a faulty patch cable, could explain the results above.

Incorrect Answers:

A: You would not be able to ping anything if TCP/IP was not correctly installed.

C: You would not be able to ping anything if the local NIC was not functioning.

D: A remote physical layer problem would not prevent the local PC from pinging the gateway.

Q.323

What is the bit pattern for the first octet of a class B network address?

- A. 0xxxxxxx
- B. 10xxxxxx
- C. 110xxxxx
- D. 1110xxxx
- E. 11110xxx

Answer: B

Explanation: Class B networks use a default subnet mask of 255.255.0.0 and have 128-191 as their first octet. 128 binary is 10000000 and 191 binary is 10111111.

Q.324

Which of the following are generally considered to be characteristics of connectionless network services? (Choose two.)

- A. non-reliable
- B. reliable
- C. less bandwidth-intensive
- D. handshaking

Answer: A, C:

Q. 325

A technical institute consisting of three campuses, East, Central and West, has purchased three 2501 routers. Each router has one Ethernet interface and two serial interfaces. Each campus is connected serially to its neighbor. The routers have been working properly. The connection between East and Central ceases operation one day and an unauthorized entry is detected on the East router. Determine the problem and restore connectivity. The network has been configured with following characteristics:

The routers are named East, Central and West.
 All networks have the default subnet mask.
 RIP is the routing protocol.
 The clocking signal is provided on the serial 0 interfaces.

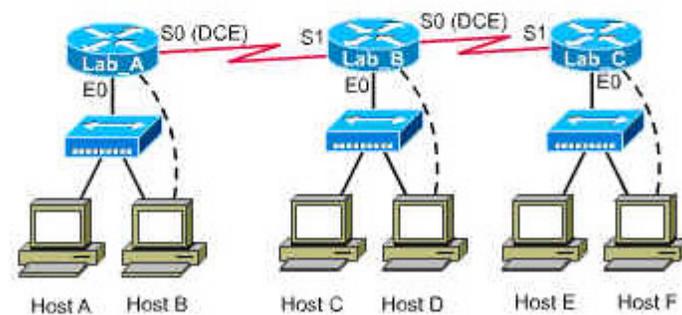


Scenario 1 Version 1.0

You may need to scroll this window and the problem statement window. Click on picture of host connected to the specified router and select the Cisco Terminal option to configure the router. If you select the wrong host, click on the show topology button and select a different host. To access a host, simply click on picture of host that you want to use and

Hide Topology

Lab A	Lab B	Lab C
Name : East	Name : Central	Name : West
E0 : 192.168.159.1	E0 : 192.168.112.1	E0 : 192.168.65.1
S0 : 192.168.75.1	S0 : 192.168.201.1	S1 : 192.168.201.2
Secret Password : cisco	S1 : 192.168.75.2	Secret Password : cisco
	Secret Password : cisco	



Simulation answer:

Lab A

enable

config terminal

hostname East

enable secret cisco

interface ethernet 0

ip address 192.168.159.1 255.255.255.0

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```
no shutdown
exit
interface serial 0
clock rate 64000
ip address 192.168.75.1
no shutdown
exit
router rip
network 192.168.159.0
network 192.168.75.0
^z
copy running-config startup-config
```

Lab B

```
enable
config terminal
hostname Central
enable secret cisco
interface ethernet 0
ip address 192.168.112.1 255.255.255.0
no shutdown
exit
interface serial 0
clock rate 64000
ip address 192.168.201.1
no shutdown
exit
interface serial 1
ip address 192.168.75.2
no shutdown
exit
router rip
network 192.168.112.0
```

network 192.168.75.0

^z

copy running-config startup-config

Lab C

enable

config terminal

hostname West

enable secret cisco

interface ethernet 0

ip address 192.168.65.1 255.255.255.0

no shutdown

exit

interface serial 1

ip address 192.168.201.1

no shutdown

exit

router rip

network 192.168.201.0

network 192.168.65.0

^z

copy running-config startup-config

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) pages 374-403.

Q. 326

A police department has three routers in its system. Durham, Chapel, Raleigh. Each router has one LAN. The Durham and Chapel routers are completely configured. The Raleigh router's configuration is complete except for the password for the first 5 virtual lines, its password for the console, and its password for the privileged mode. The privileged mode password should be encrypted. Configure the passwords on the Raleigh router. The passwords to be configured are listed in the table:

Type	Password
Telnet	graphite
Console	silver



Scenario 1 Version 1.0

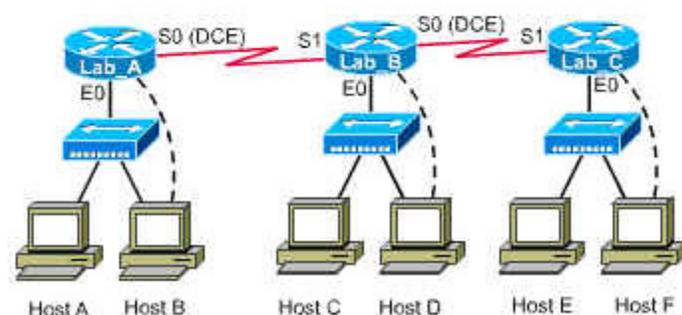
You may need to scroll this window and the problem statement window.

Click on picture of host connected to the specified router and select the Cisco Terminal option to configure the router. If you select the wrong host, click on the show topology button and select a different host.

To access a host, simply click on picture of host that you want to use and

[Hide Topology](#)

Lab A	Lab B	Lab C
Name : Raleigh	Name : Durham	Name : Chapel
E0 : 192.168.5.33	E0 : 192.168.5.97	E0 : 192.168.5.161
S0 : 192.68.5.65	S0 : 192.168.5.129	S1 : 192.168.5.130
	S1 : 192.168.5.66	



Simulation answer:

```
enable
```

```
config terminal
```

```
enable secret silver
```

```
line vty 0 4
```

```
login
```

```
password graphlte
```

```
^z
```

```
copy running-config startup-config
```

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) pages 28-30.

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Q327.

A bread company has three routers in its system, Wheat, Rye and Barley. Each router has one LAN. The Wheat and Rye routers are completely configured. The Barley router's configuration is complete except for the password for the first 5 virtual lines, its password for the console, and its password for the privileged mode. The privileged mode password should be encrypted. Configure the passwords on the Barley router. The passwords to be configured are listed in the table:

Type Password

Telnet hydrogen
 Console helium
 Privileged sodium

- The routers are named Wheat, Barley and Rye.
- The network is subnetted with a mask 255.255.255.224.
- RIP is the routing protocol.
- The clocking is provided on the serial 0 interface.
- The IP addresses are listed in the chart.

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 Scenario 1 Version 1.0

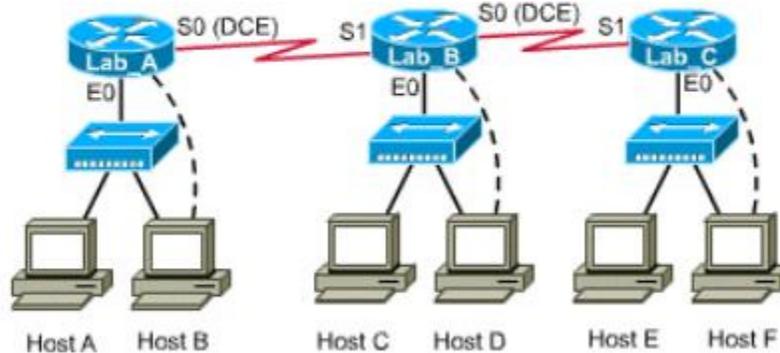
- You may need to scroll this window and the problem statement window.
- Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology button and select a different host.
- To access a host, simply click on picture of host that you want to use and

Hide Topology

Lab A
 Name : Wheat
 E0 : 192.168.12.33
 S0 : 192.68.12.65

Lab B
 Name : Barley
 E0 : 192.168.12.97
 S0 : 192.168.12.129
 S1 : 192.168.12.66

Lab C
 Name : Rye
 E0 : 192.168.12.161
 S1 : 192.168.12.130



Answer: Unknown

Q.328

• A water purifier distributorship has decided to provide network connectivity for 3 branches in the group. Each branch is to have 1 LAN. The Hard and Soft routers are completely configured. The Mineral router has been configured completely except the routing protocol. Configure the routing protocol and publish all networks on the Mineral router. The routers have been configured with the following specifications.

- The routers are named Hard, Soft, and Mineral.
- RIP is the routing protocol.
- The clocking is provided on the serial 0 interface.
- The secret password on the Mineral router is "cisco."
- The subnet mask on all interfaces is the default mask.
- The IP addresses are listed in the chart.

Hard
 E0 192.168.149.1
 S0 192.168.199.1
 Soft
 E0 192.168.55.1
 S0 192.168.101.1
 S1 192.168.199.2
 Mineral
 E0 192.168.65.1
 S1 192.168.101.2

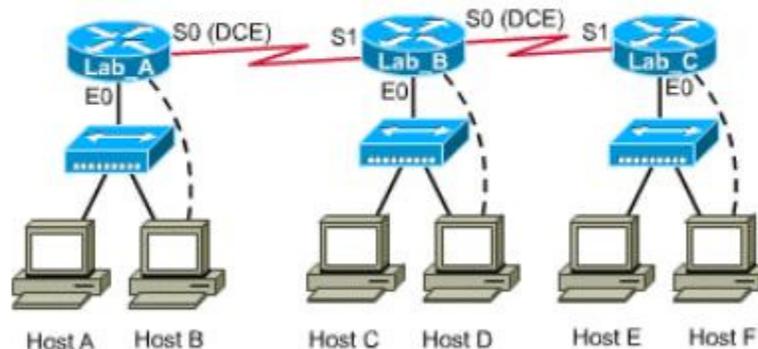


Lab A
 Name : Hard
 E0 : 192.168.149.1
 S0 : 192.168.199.1

Lab B
 Name : Soft
 E0 : 192.168.55.1
 S0 : 192.168.101.1
 S1 : 192.168.199.2

Lab C
 Name : Mineral
 E0 : 192.168.65.1
 S1 : 192.168.101.2
 Secret Password : cisco

• You may need to scroll this window and the problem statement window.
 • Click on picture of host connected to the specified router and select the CiscoTerminal option to configure the router. If you select the wrong host, click on the show topology button and select a different host.
 • To access a host, simply click on picture of host that you want to use and



Hide Topology

Answer: Unknown