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200-301

200-301

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Exam A (273 questions)

Question 1

You have connected two routers in a lab using a Data Terminal Equipment (DTE)-to-Data Circuit-terminating Equipment (DCE) cable.

Which command must be issued on the DCE end for the connection to function?

- ☐ bandwidth
- ☐ no clock rate
- ☐ clock rate
- ☐ no bandwidth

Question 2

You are a network administrator for your organization. Your organization has two Virtual LANs, named Marketing and Production. All Cisco 2950 switches in the network have both VLANs configured on them. Switches A, C, F, and G have user machines connected for both VLANs, whereas switches B, D, and E have user machines connected for the Production VLAN only. (Click the Exhibit(s) button to view the network diagram.)

You receive a request to configure Fast Ethernet port 0/2 on Switch B for a user computer in the Marketing VLAN. VLAN numbers for the Marketing and Production VLANs are 15 and 20, respectively.

Which Cisco 2950 switch command should you use to configure the port?

- ☐ SwitchB(config-if)#switchport trunk vlan 15
- ☐ SwitchB(config)#switchport access vlan 15
- ☐ SwitchB(config-if)#switchport access vlan 15
- ☐ SwitchB(config-if)#switchport trunk vlan 15, 20

Question 3

Which of the following loop avoidance mechanisms drives the requirement to create subinterfaces for each point-to-point connection in a partially meshed frame relay network?

- ☐ split horizon
- ☐ poison reverse
- ☐ maximum hop count
- ☐ feasible successor

Question 4

What command should you use to quickly view the HSRP state of the switch for all HSRP groups of which the switch is a member?

- ☐ switch# show standby brief
- ☐ switch# show ip interface brief
- ☐ switch# show hsrp
- ☐ switch# show standby

Question 5

You are configuring Open Shortest Path First (OSPF) protocol for IPv6 on Router5. The router has two interfaces, which have been configured as follows:

S0/0 - 192.168.5.1/24

S0/1 - 10.0.0.6/8

You would like OSPF to route for IPv6 only on the S0/0 network. It should not route for IPv6 on the S0/1 network. The process ID you have chosen to use is 25. You do not want to apply an IPv6 address yet.

Which of the following command sets would enable OSPF for IPv6 as required?

- ☐ Router5(config)#ipv6 ospf 25
- ☐ Router5(config)# network 192.168.5.0
- ☐ Router5(config)#ipv6 ospf 25
- ☐ Router5(config)#router-id 192.168.5.1
- ☐ Router5(config)#ipv6 unicast-routing
- ☐ Router5(config)#ipv6 router ospf 25
- ☐ Router5(config-rtr)#router-id 1.1.1.1
- ☐ Router5(config)#interface S0/0
- ☐ Router5(config-if)#ipv6 ospf 25 area 0
- ☐ Router5(config)#ipv6 unicast-routing
- ☐ Router5(config)#ipv6 ospf 25
- ☐ Router5(config-rtr)#router-id 1.1.1.1

Question 6

Which set of Cisco Internetwork Operating System (IOS) commands is used on Cisco routers to set a password for Telnet lines?

- ☐ router(config-router)# line vty 0 4
- ☐ router(config-line)# login
- ☐ router(config-line)# password password
- ☐ router(config)# line telnet 0 4
- ☐ router(config-line)# login
- ☐ router(config-line)# password password
- ☐ router(config)# line aux 0
- ☐ router(config-line)# login
- ☐ router(config-line)# password password
- ☐ router(config)# line vty 0 4
- ☐ router(config-line)# login
- ☐ router(config-line)# password password

Question 7

Examine the partial output from two adjacent routers:

```
RTR78# show ip ospf
Routing Process 201 with ID 192.0.2.1 VRF default
  Stateful High Availability enabled
  Graceful-restart is configured
  Grace period: 60 state: Inactive
  Last graceful restart exit status: None
  Supports only single TOS(TOS0) routes
  Supports opaque LSA
  This router is an autonomous system boundary
Administrative distance 110
Reference Bandwidth is 40000 Mbps
Initial SPF schedule delay 3000.000 msecs,
minimum inter SPF delay of 2000.000 msecs,
maximum inter SPF delay of 4000.000 msecs
Initial LSA generation delay 3000.000 msecs,
```

```
RTR79# show ip ospf
Routing Process 202 with ID 192.0.2.1 VRF default
  Stateful High Availability enabled
  Graceful-restart is configured
  Grace period: 60 state: Inactive
  Last graceful restart exit status: None
  Supports only single TOS(TOS0) routes
  Supports opaque LSA
  This router is an autonomous system boundary
Administrative distance 110
Reference Bandwidth is 30000 Mbps
Initial SPF schedule delay 3000.000 msecs,
minimum inter SPF delay of 2000.000 msecs,
maximum inter SPF delay of 4000.000 msecs
Initial LSA generation delay 3000.000 msecs,
```

Which of the following statements describes why the two routers are NOT forming an OSPF neighbor adjacency?

- ☐ The process IDs do not match
- ☐ The router IDs are misconfigured
- ☐ The distance is misconfigured
- ☐ The reference bandwidth does not match

Question 8

You are the Cisco administrator for NationalAct Incorporated. One of your assistants is preparing to introduce a new switch to the network. Before doing so, you execute the show vtp status command on OldSwitch and NewSwitch, respectively, and receive the following output:

```
OldSwitch# show vtp status
VTP Version : 2
Configuration Revision : 62
Maximum VLANs supported locally : 1005
Number of existing VLANs : 24
VTP Operating Mode : Server
VTP Domain Name : Corporate
VTP Pruning Mode : Enabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
<output omitted>
```

```
NewSwitch# show vtp status
VTP Version : 2
Configuration Revision : 125
Maximum VLANs supported locally : 1005
Number of existing VLANs : 10
VTP Operating Mode : Server
VTP Domain Name : Corporate
VTP Pruning Mode : Enabled
VTP V2 Mode : Disabled
VTP Traps Generation : Disabled
<output omitted>
```

If NewSwitch is introduced to the network, which of the following will be true?

- ☐ NewSwitch will delete its current VTP data.
- ☐ There will be 10 VLANs in the network.
- ☐ OldSwitch will retain its current VTP data.
- ☐ There will be 24 VLANs in the network.

Question 9

Which feature is NOT provided by flow control?

- ☐ buffering
- ☐ windowing
- ☐ full duplex transmission
- ☐ source-quench messaging

Question 10

Which command is used on a Catalyst 2950 series switch to enable basic port security on the interface?

- ☐ set port-security
- ☐ switchport port-security
- ☐ set port-security enable
- ☐ switchport port-security enable

Question 11

Which three statements are TRUE regarding Network Address Translation (NAT)? (Choose three.)

- ☐ It connects different Internet Service Providers (ISPs).
- ☐ It can act as an address translator between the Internet and a local network.
- ☐ It conserves IP addresses.
- ☐ It creates additional IP addresses for the local network.
- ☐ It helps the local network connect to the Internet using unregistered IP addresses.

Question 12

Your assistant has been assigned the task of configuring one end of a WAN link between two offices. The link is a serial connection and the router on the other end is a non-Cisco router. The router in the other office has an IP address of 192.168.8.6/24. The connection will not come up, so you ask your assistant to show you the commands he configured on the Cisco router. The commands he executed are shown below.

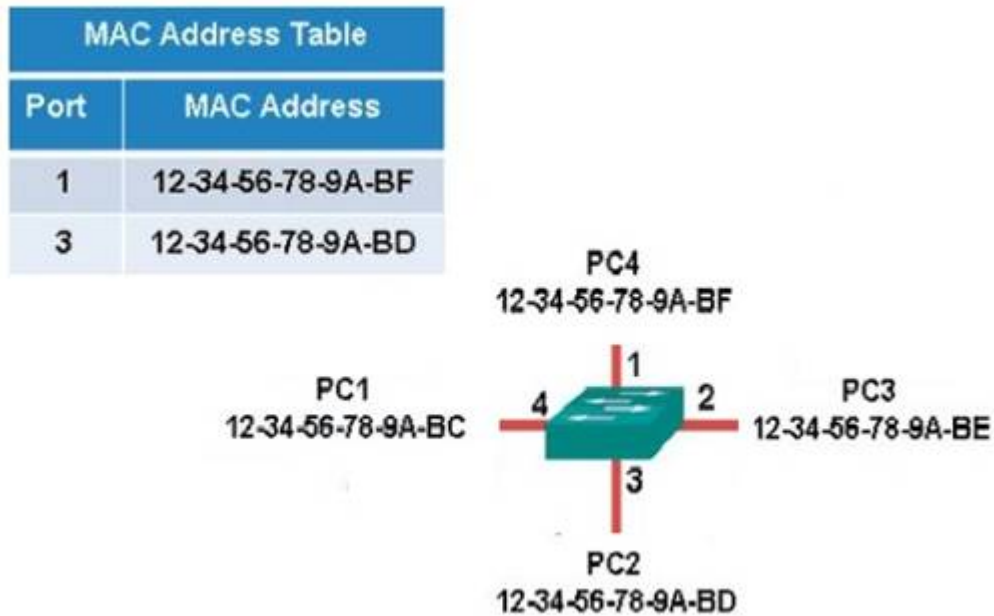
```
Ciscorouter(config)# interface serial0/0  
Ciscorouter(config-if)# ip address 192.168.8.5 255.255.255.0  
Ciscorouter(config-if)# no shut
```

What command(s) should he run to correct the configuration?

- ☐ Ciscorouter(config-if)# no ip address 192.168.8.5
- ☐ Ciscorouter(config-if)# ip address 192.168.8.10
- ☐ Ciscorouter(config-if)# encapsulation ppp
- ☐ Ciscorouter(config-if)# encapsulation ansi
- ☐ Ciscorouter(config-if)# authentication chap

Question 13

The following exhibit displays the MAC address table of a switch in your network, along with the location of each device connected to the switch:



Which of the following frames will be flooded to all ports after it is received by the switch?

- ☐ source MAC: 12-34-56-78-9A-BD, destination MAC: 12-34-56-78-9A-BF
- ☐ source MAC: 12-34-56-78-9A-BF, destination MAC: 12-34-56-78-9A-BD
- ☐ source MAC: 12-34-56-78-9A-BF, destination MAC: 12-34-56-78-9A-BC
- ☐ source MAC: 12-34-56-78-9A-BC, destination MAC: 12-34-56-78-9A-BF

Question 14

SwitchB receives a frame with the following fields:

Source MAC	Destination MAC	Source IP	Destination IP
00c0.57ce.ce33	00c0.aab3.1693	192.168.5.5	192.168.5.9

Below is the partial output of the **show mac-address table** command as executed on SwitchB:

```

Destination Address Address Type VLAN Destination port
00c0.57ce.ce33 Dynamic 1 FastEthernet0/4
00c0.566e.5858 Dynamic 1 FastEthernet0/5
00c0.45ee.eed4 Dynamic 1 FastEthernet0/7
00c0.aab3.1693 Dynamic 1 FastEthernet0/10

```

How will SwitchB handle the frame it just received?

- ☐ It will forward the frame out all ports
- ☐ It will forward the frame out FastEthernet0/4 only
- ☐ It will drop the frame
- ☐ It will record the source MAC address
- ☐ It will forward the frame out FastEthernet0/10 only

Question 15

Which metric does the Open Shortest Path First (OSPF) routing protocol use for optimal path calculation?

- ☐ MTU
- ☐ Cost
- ☐ Delay
- ☐ Hop count

Question 16

Which Cisco Internetwork Operating System (IOS) command is used to view information about Open Shortest Path First (OSPF) routing processes?

- ☐ show ip ospf database
- ☐ show ip ospf statistics
- ☐ show ip ospf
- ☐ show ip ospf traffic

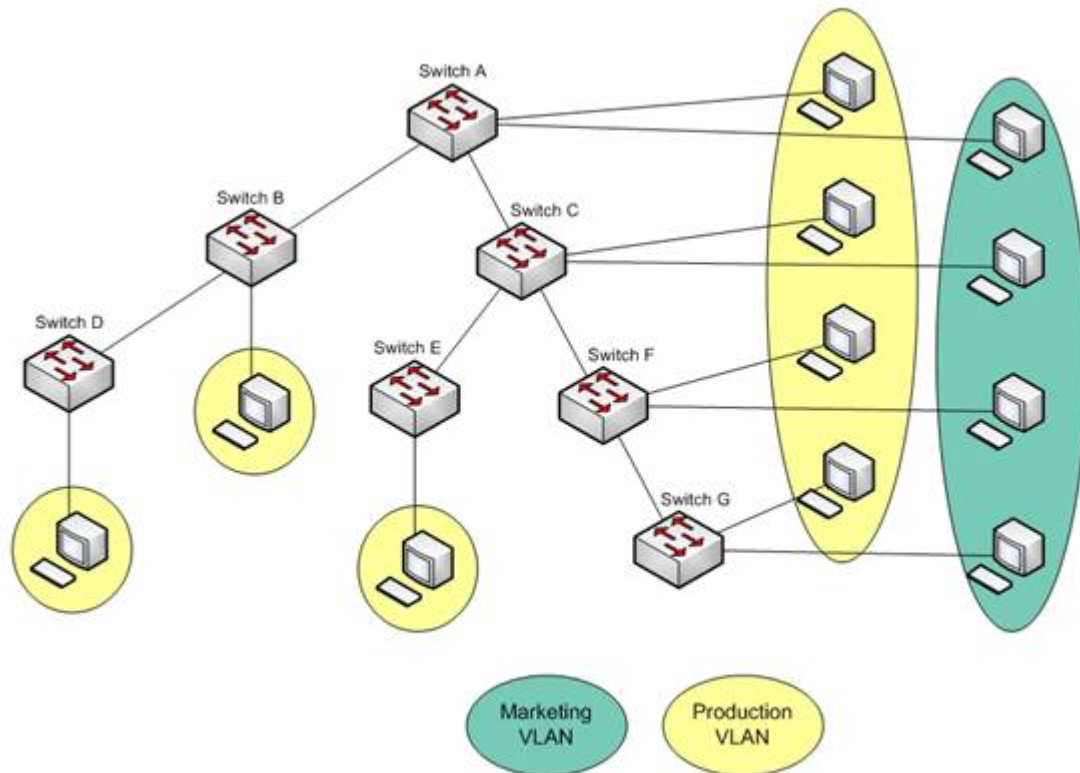
Question 17

Which Cisco IOS command allows you to change the setting of the configuration register?

- ☐ boot config
- ☐ configuration-register edit
- ☐ config-register
- ☐ edit configuration-register

Question 18

You are a network administrator for your organization. Your organization has two Virtual LANs (VLANs) named Marketing and Production. All switches in the network have both VLANs configured on them. Switches A, C, F, and G have user machines connected for both VLANs, while switches B, D, and E have user machines connected for the Production VLAN only. (Click the Exhibit(s) button to view the network diagram.)



To reduce broadcast traffic on the network, you want to ensure that broadcasts from the Marketing VLAN are flooded only to those switches that have Marketing VLAN users.

Which Cisco switch feature should you use to achieve the objective?

- ☐ PVST
- ☐ RSTP
- ☐ VTP Pruning
- ☐ Dynamic VLANs

Question 19

Which of the following characteristics are NOT shared by RIPv1 and RIPv2?

- ☐ They share an administrative distance value
- ☐ They use the same metric
- ☐ They both send the subnet mask in routing updates
- ☐ They have the same maximum hop count

Question 20

You have implemented the following IP SLA configuration, as shown in the following partial output of the show run command:

```
ip sla 1
dns cow.cisco.com name-server 10.52.128.30
ip sla schedule 1 start-time now
```

Which of the following statements is true of this configuration?

- ☐ It will find the response time to resolve the DNS name cow.cisco.com
- ☐ It will find the response time to connect to the DNS server at 10.52.128.30
- ☐ It will start in one minute
- ☐ It will gather data from one minute

Question 21

Which is the valid broadcast ID for the IP address 192.24.134.12 with a subnet mask of 255.255.255.128?

- ☐ 192.24.134.127
- ☐ 192.24.134.128
- ☐ 192.24.134.129
- ☐ 192.24.134.131

Question 22

Which of the following is NOT a true statement regarding Virtual Private Networks (VPNs)?

- ☐ A VPN is a method of securing private data over public networks
- ☐ IPsec is a method for providing security over VPN
- ☐ Frame Relay is a Layer 3 VPN technology
- ☐ IPsec provides packet-level encryption
- ☐ A Cisco VPN solution provides increased security, reduced cost, and scalability

Question 23

The execution of the show interfaces command yields the following as a part of its output:

Ethernet 0/0 is up, line protocol is down

Which of the following can be determined from this output?

- ☐ the link is not functional due to a Data Link layer issue
- ☐ the link is fully functional
- ☐ the link is not functional due to a Physical layer issue
- ☐ the link is not functional due to both a Physical layer and a Data Link layer issue

Question 24

You execute the ping command from a host, but the router does not have a path to its destination.

Which of the following ICMP message types will a client receive from the router?

- ☐ ICMP redirect
- ☐ ICMP time exceeded
- ☐ ICMP destination unreachable
- ☐ ICMP echo-reply

Question 25

You are configuring a PPP connection between two routers, R1 and R2. The password for the connection will be poppycock. When you are finished you execute the show run command on R1 to verify the configuration.

Which of the following examples of partial output of the show run command from R1 represents a correct configuration of PPP on R1?

- ☐ enable password griswald
- ☐ hostname R1
- ☐ username R1 password poppycock
- ☐ interface serial 0/0
- ☐ ip address 192.168.5.5 255.255.255.0
- ☐ encapsulation ppp
- ☐ ppp authentication chap
- ☐ enable password griswald
- ☐ hostname R1
- ☐ username R1 password poppycock
- ☐ interface serial 0/1
- ☐ ip address 192.168.5.5 255.255.255.0
- ☐ encapsulation ppp
- ☐ ppp authentication chap
- ☐ enable password griswald
- ☐ hostname R1
- ☐ username R2 password poppycock
- ☐ interface serial 0/0
- ☐ ip address 192.168.5.5 255.255.255.0
- ☐ encapsulation ppp
- ☐ ppp authentication chap
- ☐ enable password griswald
- ☐ hostname R1
- ☐ username R1 password griswald
- ☐ interface serial 0/0
- ☐ ip address 192.168.5.5 255.255.255.0
- ☐ encapsulation ppp
- ☐ ppp authentication chap

Question 26

Multiple routes to a destination already exist from various routing protocols.

Which of the following values is used FIRST to select the route that is inserted into the route table?

- ☐ composite metric
- ☐ administrative distance
- ☐ prefix length
- ☐ hop count

Question 27

The conference room has a switch port available for use by the presenter during classes. Each presenter uses the same PC attached to the port. You would like to prevent any other PCs from using that port. You have completely removed the former configuration in order to start anew.

Which of the following steps are required to prevent any other PCs from using that port?

- ☐ make the port a trunk port
- ☐ enable port security
- ☐ make the port an access port
- ☐ assign the MAC address of the PC to the port
- ☐ make the port a sticky port
- ☐ set the maximum number of MAC addresses on the port to 1

Question 28

Which statement is NOT true regarding Internet Control Message Protocol (ICMP)?

- ☐ ICMP can identify network problems.
- ☐ ICMP is documented in RFC 792.
- ☐ ICMP provides reliable transmission of data in an Internet Protocol (IP) environment.
- ☐ An ICMP echo-request message is generated by the ping command.

Question 29

Which of the following is NOT a packet type used by Enhanced Interior Gateway Routing Protocol (EIGRP)?

- ☐ Query
- ☐ Reply
- ☐ Ack
- ☐ Response

Question 30

In which of the following networks does the address 192.168.54.23/27 reside?

- ☐ 192.168.54.0
- ☐ 192.168.54.8
- ☐ 192.168.54.4
- ☐ 192.168.54.16

Question 31

What command would provide the output displayed in the exhibit? (Click on the Exhibit(s) button.)

Interface	Grp	Prio	P	State	Active	Standby	Virtual IP
Vl64	2	100	P	Standby	192.168.64.10	local	192.168.64.1
Vl65	1	110	P	Active	local	192.168.65.20	192.168.65.1
Vl66	2	100	P	Standby	192.168.66.10	local	192.168.66.1
Vl67	1	110	P	Active	local	192.168.67.20	192.168.67.1
Vl68	2	100	P	Standby	192.168.68.10	local	192.168.68.1
Vl69	1	110	P	Active	local	192.168.69.20	192.168.69.1
Vl70	2	100	P	Active	local	192.168.70.20	192.168.70.1

- ☐ switch# show hsrp
- ☐ switch# show standby
- ☐ switch# show interface vlan
- ☐ switch# show standby brief

Question 32

Which Cisco IOS command would prompt for input in the following format?

```
Protocol [ip]:
Target IP address: 10.1.1.1
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]:
Extended commands [n]: y
Source address or interface: 192.142.23.10
Type of service [0]:
Set DF bit in IP header? [no]:
Validate reply data? [no]:
Data pattern [0xABCD]:
Loose, Strict, Record, Timestamp, Verbose[none]:
Sweep range of sizes [n]:
Type escape sequence to abort
```

- ☐ ping 10.1.1.1
- ☐ ping
- ☐ traceroute
- ☐ tracert

Question 33

Which type of Dynamic Host Configuration Protocol (DHCP) transmission is used by a host to forward a DHCPDISCOVER packet to locate a DHCP server on the network?

- ☐ unicast
- ☐ broadcast
- ☐ multicast
- ☐ anycast

Question 34

In the given exhibit, which combination shows the components of a bridge ID used for Spanning Tree Protocol (STP)?

1

VLAN Number	MAC Address
----------------	-------------

2

Priority Number	Serial Number
--------------------	------------------

3

Priority Number	MAC Address
--------------------	-------------

4

VLAN Number	Serial Number
----------------	------------------

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4

Question 35

What port types are available for Rapid Spanning Tree Protocol (RSTP) but NOT available in Spanning Tree Protocol (STP)? (Choose two.)

- ☐ Root port
- ☐ Backup port
- ☐ Alternate port
- ☐ Designated port
- ☐ Learning port

Question 36

What command would be used to verify trusted DHCP ports?

- ☐ show mls qos
- ☐ show ip dhcp snooping
- ☐ show ip trust
- ☐ show ip arp trust

Question 37

With the following equipment list, which of the following network scenarios could be supported?

Two IP subnets of 255.255.255.0

Seven 48-port switches

Two router interfaces

- ☐ 300 workstations in a single broadcast domain, each workstation in its own collision domain
- ☐ 300 workstations, with 150 workstations in two broadcast domains and each workstation in its own collision domain
- ☐ 300 workstations, with 150 workstations in two broadcast domains and all workstations in the same collision domain
- ☐ 600 workstations, with 300 workstations in two broadcast domains and each workstation in its own collision domain

Question 38

As you are training a new junior technician, the trainee is examining the routing table. He tells you that there are four different routes to the same network in different routing databases. He asks you which of the routes will be used to populate the routing table.

What will your answer be, assuming that all routing protocols are set at the default administrative distance?

- ☐ The route with an R next to it
- ☐ The route with an S next to it
- ☐ The route with a C next to it
- ☐ The route with an I next to it

Question 39

You are implementing IP SLA and would like to use it to measure hop-by-hop response time between a Cisco router and any IP device on the network.

Which of the following IP SLA operations would you use for this?

- ☐ ICMP path echo operation
- ☐ Internet Control Message Protocol Echo Operation
- ☐ UDP Jitter Operation for VoIP
- ☐ UDP Jitter Operation

Question 40

When the auth keyword is used in the snmp-server host command, which of the following must be configured with an authentication mechanism?

- ☐ the interface
- ☐ the host
- ☐ the user
- ☐ the group

Question 41

You are the network administrator for your company. You have installed a new router in your network. You want to establish a remote connection from your computer to the new router so it can be configured. You are not concerned about security during the remote connection.

Which Cisco IOS command should you use to accomplish the task?

- ☐ ssh
- ☐ telnet
- ☐ terminal
- ☐ virtual

Question 42

Which type of IP address is a registered IP address assigned by the Internet Service Provider (ISP), and represents one or more inside local IP addresses externally?

- ☐ Inside local address
- ☐ Outside local address
- ☐ Inside global address
- ☐ Outside global address

Question 43

Which two are TRUE of straight-through cable? (Choose two.)

- ☐ The wires on the cable are crossed over.
- ☐ It is also known as a patch cable.
- ☐ You can connect two routers using a straight-through cable.
- ☐ You can connect a hub to a switch using a straight through cable.
- ☐ You can connect a switch to a router using a straight through cable.

Question 44

When executed on a HSRP group member named Router 10, what effect does the following command have?

Router10(config-if)# standby group 1 track serial0 25

- ☐ It will cause the router to increase its HSRP priority by 25 if the Serial0 interface on the standby router goes down
- ☐ It will cause the router to shut down the Serial0 interface if 25 packets have been dropped
- ☐ It will cause the router to notify Router 25 is serial 0 goes down
- ☐ It will cause the router to decrement its HSRP priority by 25 if Serial 0 goes down

Question 45

Given the following output, which statements can be determined to be true? (Choose three.)

RouterA2# show ip ospf neighbor

```
Neighbor ID Pri State Dead Time Address Interface
192.168.23.2 1 FULL/BDR 00:00:29 10.24.4.2 FastEthernet1/0
192.168.45.2 2 FULL/BDR 00:00:24 10.1.0.5 FastEthernet0/0
192.168.85.1 1 FULL/- 00:00:33 10.6.4.10 Serial0/1
192.168.90.3 1 FULL/DR 00:00:32 10.5.5.2 FastEthernet0/1
192.168.67.3 1 FULL/DR 00:00:20 10.4.9.20 FastEthernet0/2
192.168.90.1 1 FULL/BDR 00:00:23 10.5.5.4 FastEthernet0/1
<<output omitted>>
```

- ☐ This router is the DR for subnet 10.1.0.0.
- ☐ The DR for the network connected to Fa0/0 has an interface priority greater than 2.
- ☐ The DR for the network connected to Fa0/1 has a router ID of 10.5.5.2.
- ☐ The DR for the serial subnet is 192.168.85.1.
- ☐ This router is neither the DR nor the BDR for the Fa0/1 subnet.
- ☐ RouterA2 is connected to more than one multi-access network.

Question 46

Which of the following commands configures an SNMP host to authenticate a user by username and send clear text notifications, the receipt of which will be acknowledged by the receiver?

- ☐ Router(config)# snmp-server host 192.168.5.5 informs version 3 noauth public
- ☐ Router(config)# snmp-server host 192.168.5.5 traps version 3 auth public
- ☐ Router(config)# snmp-server host 192.168.5.5 informs version 2c public
- ☐ Router(config)# snmp-server host 192.168.5.5 informs version 3 authpriv public

Question 47

You need to set the Telnet password to "john" on a Cisco router. Which set of commands would you use?

- ☐ Router(config)#line vty 0 4
- ☐ Router(config-line)#login
- ☐ Router(config-line)#password john
- ☐ Router(config)#line con 0
- ☐ Router(config-line)#login
- ☐ Router(config-line)#password john
- ☐ Router(config)#line vty 0 4
- ☐ Router(config-line)#login
- ☐ Router(config-line)#enable secret john
- ☐ Router(config)#line con 0
- ☐ Router(config-line)#login
- ☐ Router(config-line)#enable password john

Question 48

Refer to the following sample output:

```
GigabitEthernet0/2 is up, line protocol is up
Internet address is 11.1.1.1/16
Broadcast address is 255.255.255.255
Address determined by setup command
MTU is 1500 bytes
Helper address is not set
Directed broadcast forwarding is disabled
Outgoing access list is not set
Inbound access list is not set
Proxy ARP is enabled
Local Proxy ARP is disabled
Security level is default
Split horizon is enabled
ICMP redirects are always sent
ICMP unreachable are always sent
ICMP mask replies are never sent
IP fast switching is enabled
IP fast switching on the same interface is disabled
IP Flow switching is disabled
IP CEF switching is enabled
IP Feature Fast switching turbo vector
IP VPN Flow CEF switching turbo vector
IP multicast fast switching is enabled
IP multicast distributed fast switching is disabled
IP route-cache flags are Fast, CEF
Router Discovery is disabled
IP output packet accounting is disabled
IP access violation accounting is disabled
TCP/IP header compression is disabled
RTP/IP header compression is disabled
Policy routing is enabled, using route map PBR
Network address translation is disabled
BGP Policy Mapping is disabled
IP Multi-Processor Forwarding is enabled <===== MPF information
IP Input features, "PBR",
are not supported by MPF and are IGNORED
IP Output features, "NetFlow",
are not supported by MPF and are IGNORED
```

Which Cisco Internetwork Operating System (IOS) command produces this output?

- ☐ show interfaces
- ☐ show interfaces summary
- ☐ show ip interface
- ☐ show interfaces serial

Question 49

You have executed the following commands on a switch:

```
Switch64(config)# interface range gigabitethernet2/0/1 -2  
Switch64(config-if-range)# switchport mode access  
Switch64(config-if-range)# switchport access vlan 10  
Switch64(config-if-range)# channel-group 5 mode auto
```

In which of the following situations will Switch64 create an Etherchannel?

- ☐ If the other switch is set for desirable mode
- ☐ If the other switch is set for auto mode
- ☐ If the other switch is set for on mode
- ☐ If the other switch is set for passive mode

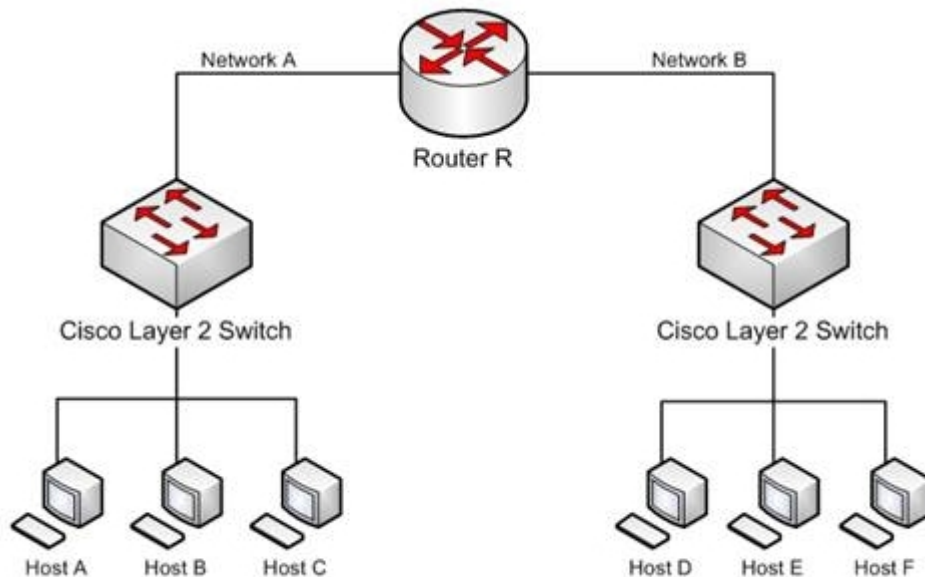
Question 50

Which Cisco IOS command is used to configure encapsulation for a PPP serial link on a Cisco router?

- ☐ encapsulation ppp
- ☐ encapsulation ip ppp
- ☐ ip encapsulation ppp
- ☐ encapsulation ppp-synch

Question 51

Refer to the network diagram in the exhibit. Host A is configured with an incorrect default gateway. All other computers and the Router are known to be configured correctly (Click the Exhibit(s) button.)



Which of the following statements is TRUE?

- ☐ Host C on Network A cannot communicate with Host A on Network A.
- ☐ Host A on Network A can communicate with all other hosts on Network A.
- ☐ Host A on Network A can communicate with Router R.
- ☐ Host C on Network A cannot communicate with Router R.
- ☐ Host D on Network B cannot communicate with Host B on Network A.

Question 52

What is the significance of the following BECN packet statistics?

```
Router# show frame-relay pvc 16
```

```
PVC Statistics for interface serial0 (Frame Relay DTE)
```

```
DLCI = 16, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial0
input pkts 0 output pkts 0 in bytes 0
out bytes 0 dropped pkts 0 in FECN pkts 0
in BECN pkts 100 out FECN pkts 0 out BECN pkts 0
<<output omitted>>
```

- ☐ The router is experiencing congestion in sending frames.
- ☐ The router is experiencing congestion in receiving frames.
- ☐ The Frame Relay mapping table is missing an entry.
- ☐ The Frame Relay mapping table is corrupt.

Question 53

You have been asked to examine the following output to identify any security problems with the router. Its configuration is shown:

```
Current configuration:
!
version 11.2
!
hostname cisco
!
enable secret 5 $1$mERr$7sOd0mgRuXYhHwfWsV4QZ/
!
banner login ^C Welcome to Router 5 Authorized users only ^C
!
interface Ethernet0
ip address 10.1.1.1 255.0.0.0
!
interface Serial0
ip address 20.2.2.2 255.0.0.0
!
router rip
network 10.0.0.0
network 20.0.0.0
!
ip route 0.0.0.0 0.0.0.0 20.2.2.3
!
line vty 0 4
password Cisc0$ell$
no login
!
end
```

What problems exist? (Choose all that apply.)

- ☐ unencrypted privileged mode password
- ☐ inappropriate wording in the banner message
- ☐ weak password on the VTY line
- ☐ Telnet users will not be prompted for a password

Question 54

You have executed the following commands on switch55:

```
switchA(config)# dot1x system-auth-control
switchA(config)# aaa new-model
switchA(config)# radius-server host 192.168.105.67 key firstKey111
switchA(config)# aaa authentication dot1x default group radius
switchA(config)# interface range Fa 0/1 - 11
switchA(config-if)# switchport mode access
switchA(config-if)# dot1x port-control auto
```

What is the result of executing the given commands? (Choose two.)

- ☐ Only the listed RADIUS server is used for authentication
- ☐ 802.1X authentication is enabled on the Fa0/1 interface only
- ☐ The key for the RADIUS server is firstKey111
- ☐ AAA is not enabled on the switch

Question 55

A user in your network is having trouble accessing resources and the Internet. You decide to examine the partial output of the ipconfig/all command on his machine. The output is shown below:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\TroyMcClure > ipconfig/all

Windows IP Configuration

Host Name . . . . . : KREMLIN0120
Primary Dns Suffix . . . . . : kappa.alpha.com
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No
DNS Suffix Search List. . . . . : kappa.alpha.com


Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix . : triad.rr.com
Description . . . . . : Intel(R) Dual Band Wireless-N 7260
Physical Address. . . . . : F8-16-54-12-E3-69
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
IPv4 Address. . . . . : 192.168.1.3 (Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.0.1
DNS Servers . . . . . : 192.168.0.50
```

Which of the following statements describes the user's problem?

- ☐ The default gateway address is incorrect
- ☐ The IP address of the device is incorrect
- ☐ There is no DNS server configured
- ☐ IP routing is not enabled

Question 56

You have two routers in your OSPF area 0. Router 1 is connected to Router 2 via its Serial 1 interface, and to your ISP via the Serial 0 interface. Router 1 is an ASBR.

After your assistant configures a default route on Router 1, you discover that whenever either router receives packets destined for networks that are not in the routing tables, it causes traffic loops between the two routers.

To troubleshoot, you execute the show run command on Router 1. Part of the output is shown below:

<output omitted>

IP route 0.0.0.0 0.0.0.0 serial 1

Router ospf 1

Network 192.168.5.0 0.0.0.255 area 0

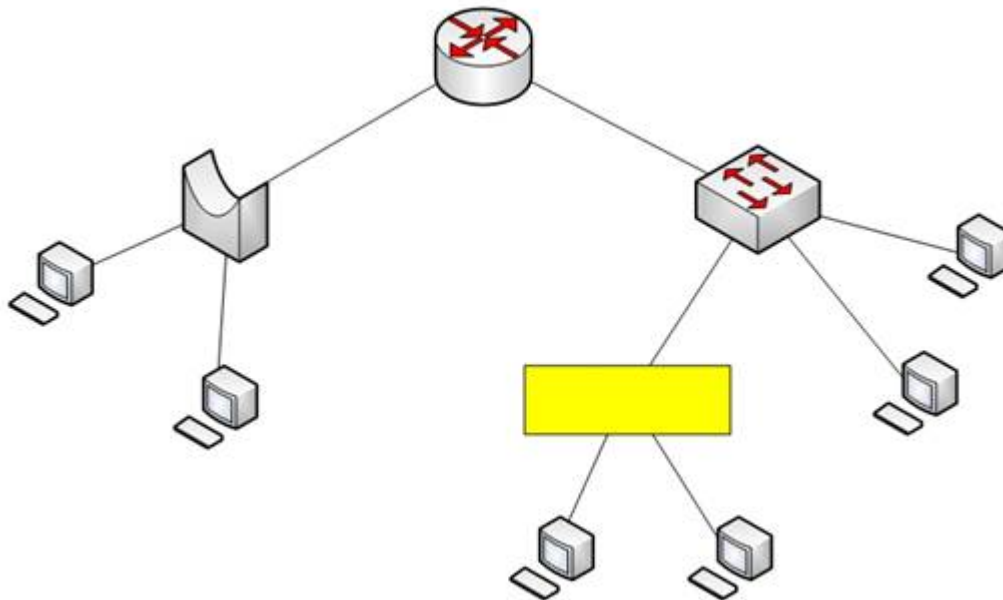
Default-information originate

Which command or set of commands should you execute on Router 1 to stop the looping traffic while maintaining Router 2's ability to send traffic to the Internet?

- ☐ Execute the no default-information originate command.
- ☐ Execute the no ip route 0.0.0.0 0.0.0.0 serial 1 command and then execute the ip route 0.0.0.0 0.0.0.0 serial 0 command.
- ☐ Execute the default-information originate always command.
- ☐ Execute the no network 192.168.5.0 area 0 command and then execute the network 192.168.5.0 255.255.255.0 area 0 command.

Question 57

Assume that all ports on Layer 2 devices are in the same Virtual LAN (VLAN). View the given network topology. (Click the Exhibit(s) button.)



Which network device should be placed at the highlighted box to produce a total of two broadcast domains and seven collision domains in the network?

- ☐ Hub
- ☐ Bridge
- ☐ Switch
- ☐ Router

Question 58

A router is running a classful routing protocol. Which command will enable this router to select a default route when routing to an unknown subnet of a network for which it knows the major network?

- ☐ ip classless
- ☐ no ip classless
- ☐ auto-summary
- ☐ no auto-summary

Question 59

When a packet is forwarded through a network from one host to another host, which of the following fields in the Ethernet frame will change at every hop?

- ☐ Source IP address
- ☐ Destination MAC address
- ☐ Source port number
- ☐ Destination IP address

Question 60

Which Network Address Translation (NAT) term is used for the IP address that is assigned to a host on the inside network?

- ☐ Inside local address
- ☐ Inside global address
- ☐ Outside local address
- ☐ Outside global address

Question 61

What is the purpose of frame tagging in Virtual LAN (VLAN) configurations?

- ☐ inter-VLAN routing
- ☐ encryption of network packets
- ☐ frame identification over trunk links
- ☐ frame identification over access links

Question 62

How many IP addresses can be assigned to hosts in subnet 192.168.12.64/26?

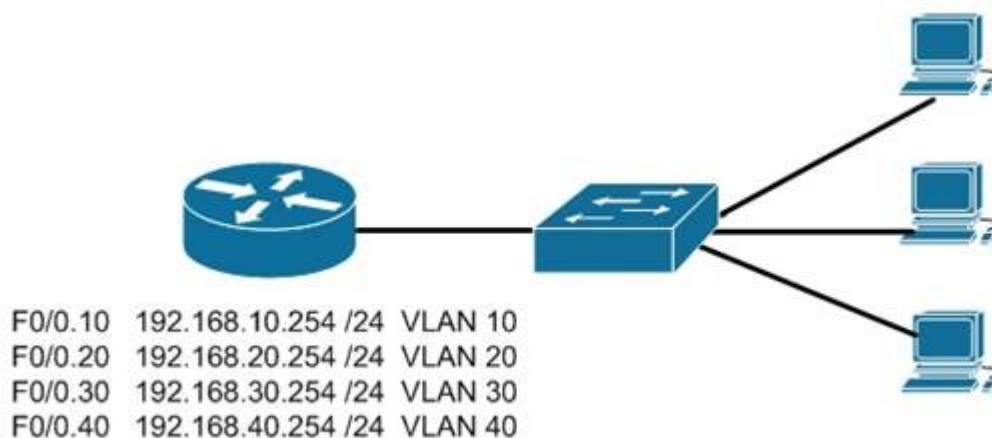
- ☐ 32
- ☐ 62
- ☐ 128
- ☐ 256

Question 63

You are connecting a new computer to Switch55. The new computer should be placed in the Accounting VLAN. You execute the show vlan command and get the following output:

```
Switch55#show vlan
VLAN Name Status Ports
1 default active Fa0/1, Fa0/2, Fa0/3,
Fa0/7, Fa0/8, Fa0/9,
Fa0/14, Fa0/16, Fa0/23,
Fa0/19, Fa0/20, Fa0/23
10 sales active Fa0/10, Fa0/22
20 accounting active Fa0/5, Fa0/6, Fa0/15
30 hr active Fa0/11, Fa0/12
40 it active Fa0/17
<<output omitted>>
```

Examine the additional network diagram.



What action should you take to place the new computer in the Accounting VLAN and allow for inter-VLAN routing?

- ☐ Connect the new computer to Fa0/1
- ☐ Connect the new computer to Fa0/14
- ☐ Connect the new computer to Fa0/5
- ☐ Configure a dynamic routing protocol on the router interface

Question 64

What switch security configuration requires AAA to be configured on the switch?

- ☐ VACL
- ☐ 802.1x
- ☐ Private VLAN
- ☐ port security

Question 65

Which of the following commands could you use to verify the type of serial cable you are connected to (DCE or DTE)?

- ☐ show interfaces
- ☐ show controllers
- ☐ show ip interface
- ☐ show interface dce
- ☐ show interface switchport

Question 66

Which of the following commands will enable a global IPv6 address based on the Modified EUI-64 format interface ID?

- ☐ ipv6 address 5000::2222:1/64
- ☐ ipv6 address autoconfig
- ☐ ipv6 address 2001:db8:2222:7272::72/64 link-local
- ☐ ipv6 enable

Question 67

Which of the following statements are true of Class C IP addresses?

- ☐ The decimal values of the first octet can range from 192 to 223
- ☐ The decimal values of the first octet can range from 1 to 126
- ☐ The first octet represents the entire network portion of the address
- ☐ The first three octets represent the entire network portion of the address
- ☐ The value of the first binary place in the first octet must be 0
- ☐ The value of the first two binary places in the first octet must be 11

Question 68

Which of the following excerpts from the output of the show ip eigrp topology command include EIGRP learned routes or pairs of routes that will be included in the routing table? (For excerpts that include multiple routes, do not include the entry unless BOTH routes will be included in the routing table.)

- ☐ P 172.16.16.0/24, 1 successors, FD is 284244
- ☐ via 172.16.250.2 (284244/17669856), Serial0/0
- ☐ via 172.16.251.2 (12738176/27819002), Serial0/1
- ☐ P 172.16.250.0/24, 1 successors, FD is 2248564
- ☐ via Connected, Serial0/0
- ☐ P 172.16.10.0/24 2 successors, FD is 284244
- ☐ via 172.16.50.1 (284244/17669856), Serial1/0
- ☐ via 172.16.60.1 (284244/17669856), Serial1/1
- ☐ P 172.16.60.0/24, 1 successors, FD is 2248564
- ☐ via Connected, Serial1/1

Question 69

Which three statements are TRUE regarding a Local Area Network (LAN)? (Choose three.)

- ☐ A LAN is confined to one building or campus.
- ☐ A LAN can cover great distances.
- ☐ A LAN provides fast data transmission.
- ☐ A LAN is easily expandable.
- ☐ LANs require the use of a router to communicate between local hosts.

Question 70

You are configuring the link between a Cisco 2950 series switch and a Cisco 2611 router. You have physically connected the router's Ethernet port to the switch using a straight-through cable. The switch has not been configured, except for a hostname. The router's hostname has also been configured, and the Ethernet port has been enabled. However, you forgot to assign an IP address to the Ethernet port.

You issue the show cdp neighbors command and get the following output:

```
RouterA#show cdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater
Device ID         Local Interface         Holdtime    Capability Platform  Port ID
SwitchA          Eth 0/0                157         S          2950        Fas 0/0
```

If you did not configure IP addresses, how is this information being passed between the two devices?

- ☐ The devices established a connection using default IP addresses.
- ☐ The ip unnumbered command has been issued, which means the interface does not require an IP address to be configured.
- ☐ CDP is a Layer 2 protocol and does not require IP addresses to be configured.
- ☐ CDP uses its own IP addressing system.

Question 71

In the following partial output of the show ip route command, what does the letter D stand for?

D 192.1.2.0/24 via 5.1.1.71 [w:0 m:0]

C 192.8.1.1/32 directly connected to loopback 0

- ☐ This is a default route
- ☐ This is an EIGRP route
- ☐ This is static route
- ☐ This is a directly connected route

Question 72

You are the network administrator for your company. You are in the process of verifying the configuration of the network devices to ensure smooth network connectivity. You want information on the routes taken by packets so that you are able to identify the network points where packets are getting dropped.

Which Cisco IOS command should you use to accomplish this task in the most efficient manner?

- ☐ tracert
- ☐ traceroute
- ☐ extended ping
- ☐ ping

Question 73

You are the network administrator for your company. You want to use both IPv6 and IPv4 applications in the network. You also want to ensure that routers can route both IPv6 and IPv4 packets.

Which deployment model should be implemented to accomplish the task?

- ☐ IPv6 over IPv4 tunnels
- ☐ IPv6 over dedicated Wide Area Network (WAN) links
- ☐ Dual-Stack Backbones
- ☐ Protocol translation

Question 74

You have a Telnet session established with a switch from a router. You would like to maintain that connection while you return to the session with the router, and then easily return to the switch session after connecting to the router.

What command should you use?

- ☐ <Ctrl-Shift-6>x
- ☐ resume
- ☐ suspend
- ☐ <Ctrl-Alt-6>shift

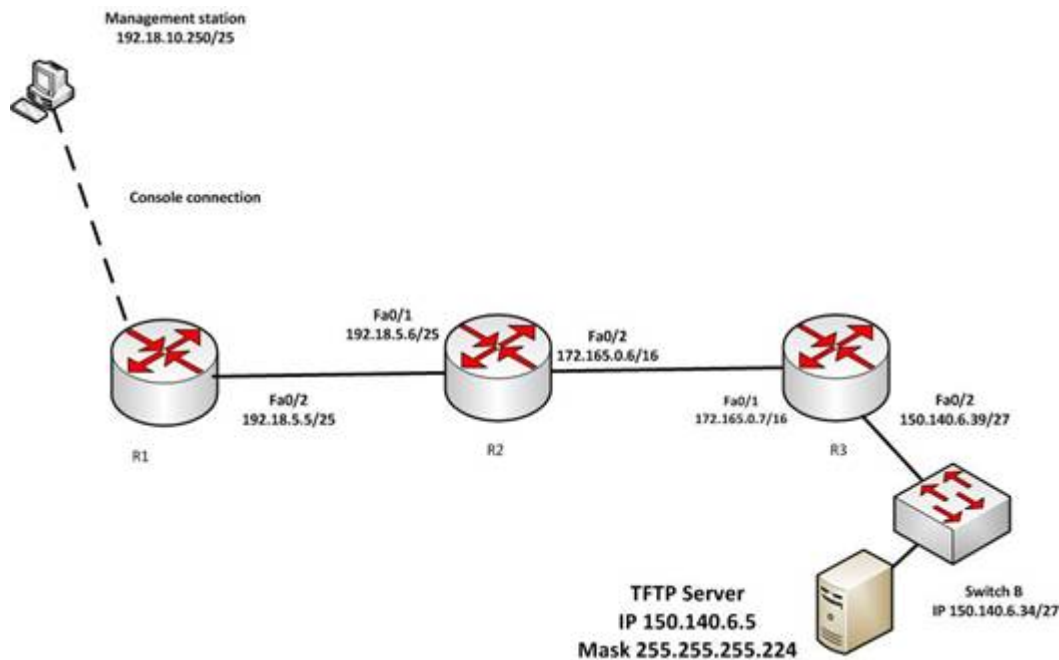
Question 75

Which device creates broadcast domains and enables communication across separate broadcast domains?

- ☐ router
- ☐ switch
- ☐ hub
- ☐ access points

Question 76

You have established a console session with R1 and you are attempting to download an IOS image from the TFTP server in the diagram below.



However, you are unable to make the connection to 150.140.6.5. What is the problem?

- ☐ The IP address of the management station is incorrect
- ☐ The IP address of the TFTP server is incorrect
- ☐ The interfaces between R1 and R2 are not in the same subnet
- ☐ The IP address of Switch B is incorrect

Question 77

Which of the following statements are NOT true, based on the output below?

```
Access1#show spanning-tree vlan 10

VLAN0010

Spanning tree enabled protocol rstp
Root ID Priority 24586
Address 0015.63f6.b700
Cost 19
Port 107 (FastEthernet3/0/1)
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec

Bridge ID Priority 32778 (priority 32768 sys-id-ext 10)
Address 000f.f794.3d00
Hello Time 2 sec Max Age 20 sec Forward Delay 15 sec
Aging Time 300

Interface Role Sts Cost Prio.Nbr Type
-----
Fa3/0/1 Root FWD 19 128.107 P2p
Fa3/0/2 Altn BLK 19 128.108 P2p
-----
```

- ☐ This switch is the root bridge.
- ☐ This switch has a priority of 32778.
- ☐ This switch has a MAC address of 0015.63f6.b700.
- ☐ All ports will be in a state of discarding, learning, or forwarding.
- ☐ All designated ports are in a forwarding state.
- ☐ This switch is using the default priority for STP

Question 78

Which of the following is NOT a VLAN Trunking Protocol (VTP) mode of operation?

- ☐ client
- ☐ server
- ☐ virtual
- ☐ transparent

Question 79

Which two statements are TRUE of Internet Protocol (IP) addressing? (Choose two.)

- ☐ Public addresses are registered with the Internet Assigned Numbers Authority (IANA).
- ☐ These addresses are publicly registered with the Internet Service Provider (ISP).
- ☐ Through a public IP address, you can access another computer on the Internet, such as a Web server.
- ☐ The ranges of public IP addressing are 10.0.0.0 to 10.255.255.255, 172.16.0.0 to 172.31.255.255, and 192.168.0.0 to 192.168.255.255.
- ☐ Private addresses are allocated by the Internet Assigned Numbers Authority (IANA).

Question 80

What data structure is pictured in the graphic?

0-15	16-31
Source Port Number	Destination Port Number
Length	Checksum
Data	

- ☐ TCP segment
- ☐ UDP datagram
- ☐ IP header
- ☐ Http header

Question 81

Which Internet Control Message Protocol (ICMP) message is sent by a host in the network to test connectivity with another host?

- ☐ ICMP redirect message
- ☐ ICMP echo-request message
- ☐ ICMP time-exceeded message
- ☐ ICMP destination-unreachable message

Question 82

Which of the following techniques is NOT used by distance vector protocols to stop routing loops in a network?

- ☐ Split horizon
- ☐ Spanning Tree Protocol (STP)
- ☐ Holddowns
- ☐ Route poisoning

Question 83

The output of the show ip route command is given:

```
Router# show ip route
```

Gateway of last resort is 10.119.254.240 to network 10.140.0.0

O 172.16.0.0 [110/5] via 10.19.24.6, 0:01:00, Ethernet2

B 172.17.12.0 [200/128] via 10.19.24.24, 0:02:22, Ethernet2

O 172.71.13.0 [110/5] via 10.19.24.6, 0:00:59, Ethernet2

O 10.13.0.0 [110/5] via 10.19.24.6, 0:00:59, Ethernet2

What does the value 110 in the output represent?

- ☐ The administrative distance of the information source
- ☐ The metric to the route
- ☐ The type of route
- ☐ The port number of the remote router

Question 84

What is the significance of the 1 in the following configuration?

```
router(config)# router eigrp 1
```

- ☐ It is the process ID for EIGRP and is locally significant to this router.
- ☐ It is the process ID for EIGRP and must be the same on all EIGRP routers.
- ☐ It is the AS number for EIGRP and is locally significant to this router.
- ☐ It is the AS number for EIGRP and must be the same on all EIGRP routers.

Question 85

Which two statements are TRUE of default routes? (Choose two.)

- ☐ Default routes are used for routing packets destined only for networks that are listed in the routing table.
- ☐ Default routes are used for routing packets destined for networks that are not listed in the routing table.
- ☐ Default routes should not be used in a stub network.
- ☐ Default routes are ideal for use in stub networks.
- ☐ Network security is increased by using default routes.

Question 86

What is the default sequence in which a router searches for the Internetwork Operating System (IOS) image upon power on?

- ☐ TFTP, Flash, ROM
- ☐ ROM, Flash, TFTP
- ☐ Flash, TFTP, ROM
- ☐ Flash, TFTP, NVRAM
- ☐ NVRAM, Flash, TFTP

Question 87

Which of the following topologies is used in Wide Area Networks (WANs)?

- ☐ FDDI
- ☐ CDDI
- ☐ SONET
- ☐ Token Ring

Question 88

Which of the following commands will let you see the current operating mode for a switch port?

- ☐ show interface fastethernet0/1 detail
- ☐ show controllers fastethernet0/1
- ☐ show interface fastethernet0/1 status
- ☐ show interfaces fastethernet0/1 switchport

Question 89

You are troubleshooting a problem with two routers configured in a HSRP group. You intended to configure the routers so that Router A and Router B would each track their respective Fa0/1 interfaces and decrement their priorities for several VLAN groups if the tracked interface went down. However, you find that Router A is not taking over as the active device for the HSRP group on VLAN 101 when the Fa0/1 interface on Router B fails.

Which command would NOT be useful for discovering the problem?

- ☐ show running-configuration
- ☐ show vlans
- ☐ show standby brief
- ☐ show standby

Question 90

Your assistant is interested in gathering statistics about connection-oriented operations.

Which of the following should be done to enhance the accuracy of the information gathered?

- ☐ configure an IP SLA responder on the destination device
- ☐ configure an IP SLA responder on the source device
- ☐ schedule the operation on the destination device
- ☐ add the verify-data command to the configuration of the operation

Question 91

Which of the following are characteristics of Enhanced Interior Gateway Routing Protocol (EIGRP)? (Choose all that apply.)

- ☐ Requires a hierarchical physical topology
- ☐ Does not require a hierarchical physical topology
- ☐ Uses Diffusing Update Algorithm (DUAL) to provide loop prevention
- ☐ Uses Bellman-Ford algorithm to provide loop prevention
- ☐ Supports Message-Digest Algorithm 5 (MD5) authentication
- ☐ Does not support Message-Digest Algorithm 5 (MD5) authentication
- ☐ Can differentiate between internal and external routes
- ☐ Uses a 32-bit metric

Question 92

Which two features do Cisco routers offer to mitigate distributed denial-of-service (DDoS) attacks? (Choose two.)

- ☐ Anti-DDoS guard
- ☐ Scatter tracing
- ☐ Access control lists (ACLs)
- ☐ Flow control
- ☐ Rate limiting

Question 93

Examine the following output from SwitchD.

```
switch# show interfaces fastethernet0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: static access
Operational Mode: static access
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: Off
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 1 (default)
<<output omitted>>
```

Based on this output, what command MUST be executed for an 802.1q trunk to be created on port Fa0/1?

- ☐ switchport mode trunk
- ☐ switchport mode nonegotiate
- ☐ switchport trunk encapsulation 802.1q
- ☐ switchport trunk native VLAN

Question 94

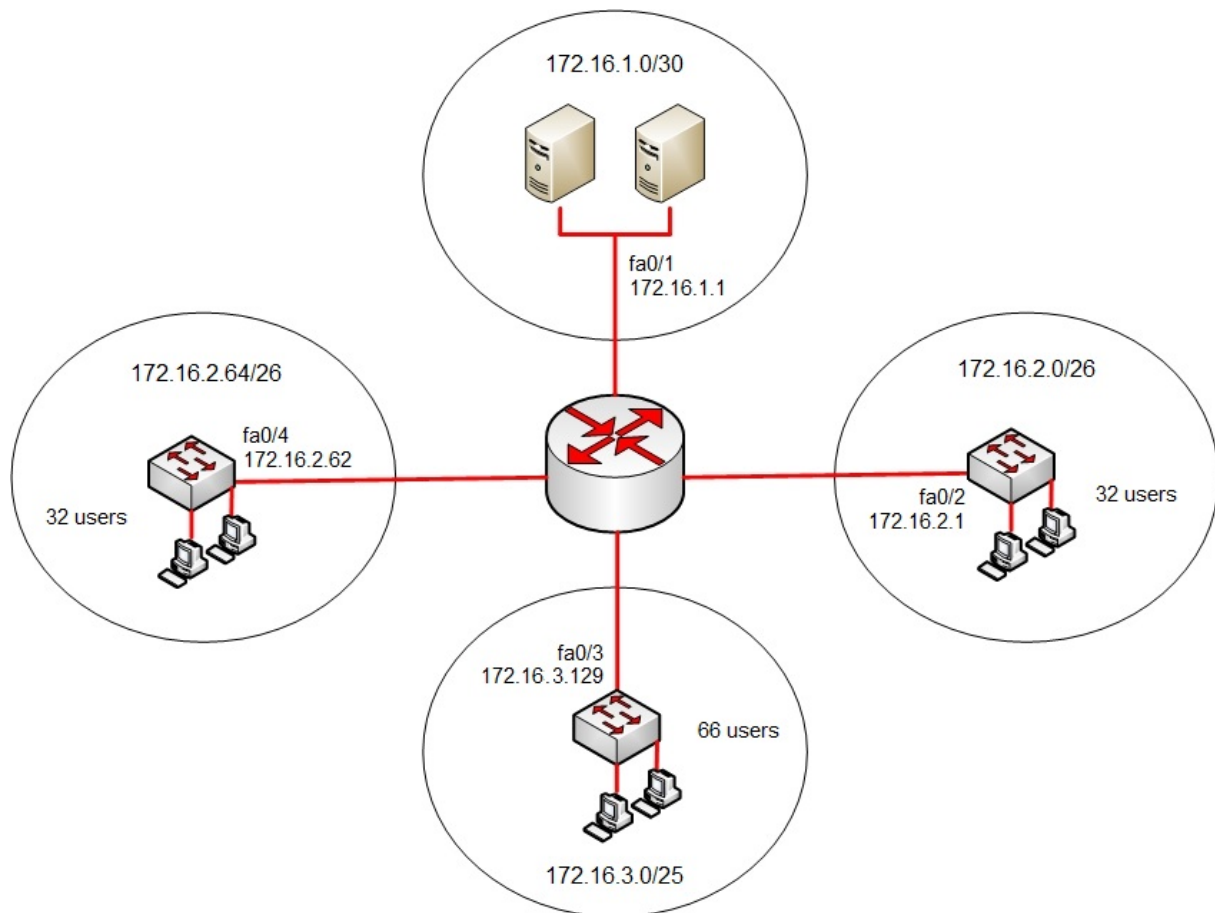
Two catalyst switches on a LAN are connected to each other with redundant links and have Spanning Tree Protocol (STP) disabled.

What problem could occur from this configuration?

- ☐ It may cause broadcast storms.
- ☐ All ports on both switches may change to a forwarding state.
- ☐ It may cause a collision storm.
- ☐ These switches will not forward VTP information.

Question 95

Your company's network must make the most efficient use of the IP address space. In the following diagram, the circles define separate network segments. The requirements of each network segment are given in the diagram. (Click the Exhibit(s) button.)



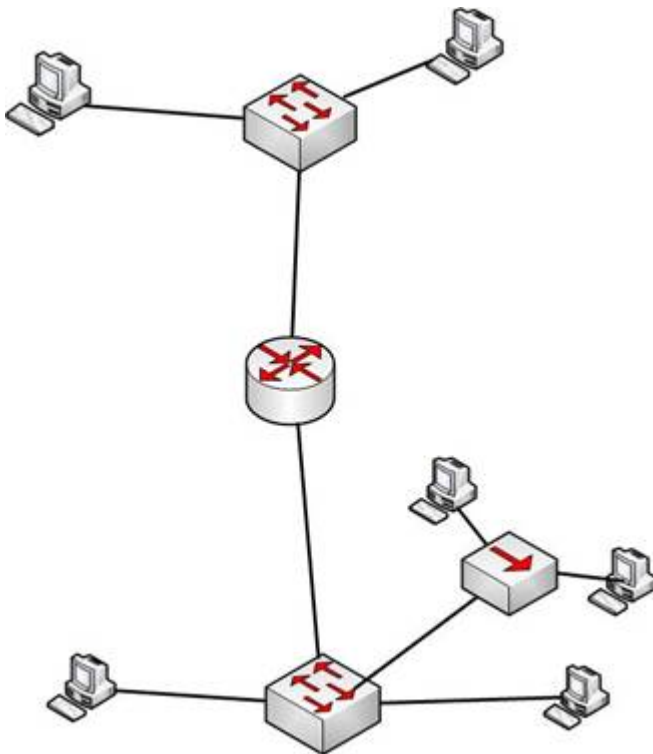
Users complain of connectivity issues. You need to discover the problems with the network configuration.

What are the three problems with the network diagram? (Choose three.)

- ☐ The 172.16.1.0/30 segment requires more user address space.
- ☐ The 172.16.2.0/26 segment requires more user address space.
- ☐ The 172.16.3.0/25 segment requires more user address space.
- ☐ The 172.16.2.64/26 segment requires more user address space.
- ☐ Interface fa0/2 has an IP address that belongs to the 172.16.2.64/26 segment.
- ☐ Interface fa0/4 has an IP address that belongs to the 172.16.2.0/26 segment.
- ☐ Interface fa0/3 has an IP address outside the 172.16.3.0/25 segment.

Question 96

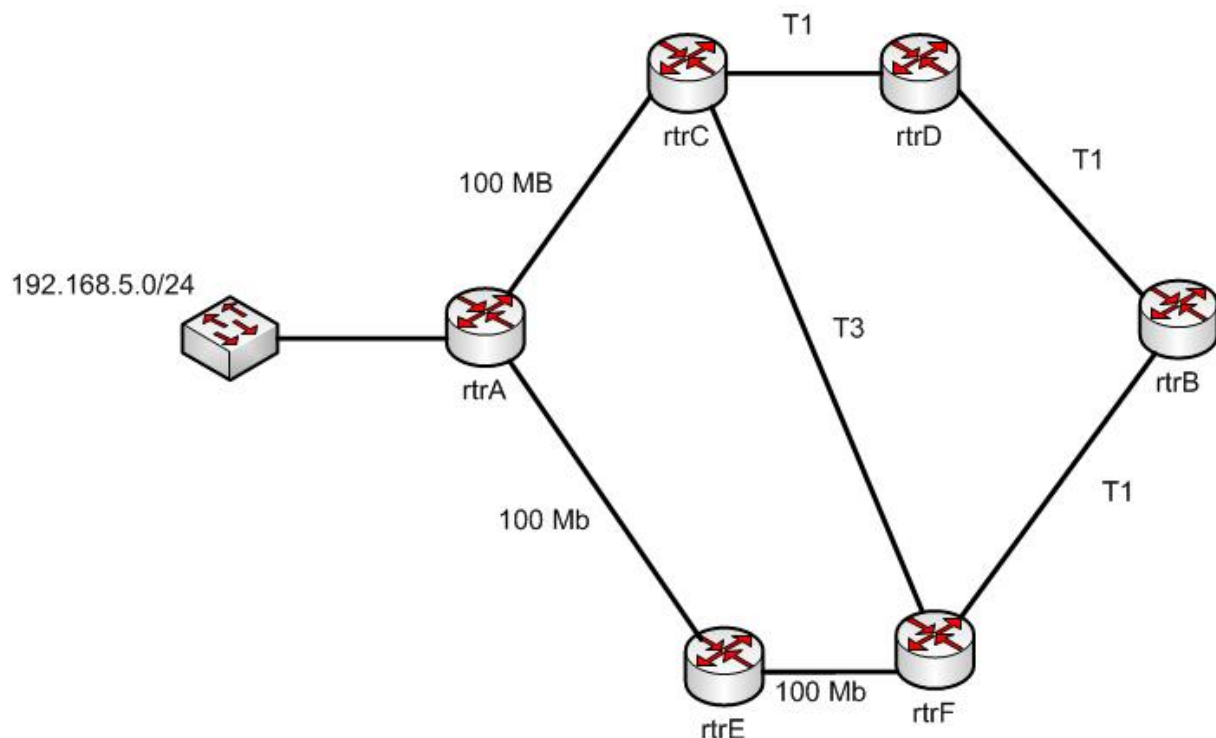
How many collision and broadcast domains are in the network shown below?



- ☐ 4 collision domains and 3 broadcast domains
- ☐ 7 collision domains and 2 broadcast domains
- ☐ 8 collision domains and 1 broadcast domain
- ☐ 6 collision domains and 2 broadcast domains

Question 97

Examine the following diagram:



While troubleshooting an OSPF routing problem, you need to determine the cost for Router F to reach the 192.168.5.0 24 network via the best route.

What will that cost be?

- ☐ 110
- ☐ 2
- ☐ 3
- ☐ 7

Question 98

You know that Router2 is configured for RIP. Which Cisco Internetwork Operating System (IOS) command is used to view the current state of all active routing protocols?

- ☐ show ip arp
- ☐ debug ip rip
- ☐ show ip protocols
- ☐ show ip routing process
- ☐ show arp
- ☐ show interfaces

Question 99

Router 5 has four interfaces. The networks hosted on each interface are as follows:

Fa0/1 192.168.5.4/29
Fa0/2 192.168.6.0/24
Fa0/3 192.168.7.0/24
S0/0 172.16.5.0/24

You execute the following commands on the router:

```
Router5(config)# router bgp 20
Router5(config-router)# network 192.168.5.0
Router5(config-router)# network 192.168.6.0
Router5(config-router)# network 192.168.7.0
Router5(config-router)# network 172.16.5.0
Router5(config-router)# neighbor 172.16.5.2 remote-as 50
Router5(config-router)# aggregate-address 192.168.5.0 255.255.252.0
```

After this command sequence is executed, what routes will be present in the routing table of the router at 172.16.5.2? (Choose all that apply.)

- ☐ 192.168.5.4/29
- ☐ 172.16.5.0/24
- ☐ 192.168.6.0/24
- ☐ 192.168.7.0/24
- ☐ none of these will be present
- ☐ only network addresses beginning with 192 will be present

Question 100

```
Protocol [ip]:
Target IP address: 10.10.10.1
Repeat count [5]:
Datagram size [100]:
Timeout in seconds [2]:
Extended commands [n]: y
Source address or interface: 12.1.10.2
Type of service [0]:
Set DF bit in IP header? [no]:
Validate reply data? [no]:
Data pattern [0xABCD]:
Loose, Strict, Record, Timestamp, Verbose[none]:
Sweep range of sizes [n]:
Type escape sequence to abort.
```

Which Cisco IOS command would produce the preceding menu-based prompt for additional information?

- ☐ tracert 10.10.10.1
- ☐ traceroute 12.1.10.2
- ☐ ping 10.10.10.1
- ☐ ping

Question 101

From which of the following attacks can Message Authentication Code (MAC) shield your network?

- ☐ DoS
- ☐ DDoS
- ☐ spoofing
- ☐ SYN floods

Question 102

Which type of switching process requires a switch to wait for the entire frame to be received before forwarding it to a destination port?

- ☐ store and forward
- ☐ cut-through
- ☐ fragment free
- ☐ frame-forward

Question 103

The following shows the partial output of the show cdp neighbors command:

```
DevicID Local Intrfce Holdtme Capability Platform Port ID
lab-7206 Eth 0 157 R 7206VXR Fas 0/0/0
lab-as5300-1 Eth 0 163 R AS5300 Fas 0
lab-as5300-2 Eth 0 159 R AS5300 Eth 0
lab-as5300-3 Eth 0 122 R AS5300 Eth 0
lab-as5300-4 Eth 0 132 R AS5300 Fas 0/0
lab-3621 Eth 0 140 R S 3631-telcoFas 0/0
008024 2758E0 Eth 0 132 T CAT3000 1/2
lab-400-1 Eth 0 130 r FH400 Fas 0/0
```

What does "r" represent in this output?

- ☐ Router
- ☐ Route bridge
- ☐ Hub
- ☐ Repeater

Question 104

Which commands would be used to enable Enhanced Interior Gateway Routing Protocol (EIGRP) on a router, and configure the IP addresses 10.2.2.2 and 192.168.1.1 as a part of complete EIGRP configuration? (Choose three.)

- ☐ router eigrp 10
- ☐ router eigrp
- ☐ network 10.2.2.2
- ☐ network 10.0.0.0
- ☐ network 192.168.1.0
- ☐ network 192.168.1.1

Question 105

You are the network administrator for your company. The Chief Technical Officer of the company is looking for a routing solution that satisfies the following requirements:

- No routing protocol advertisements
- Increased network security
- No routing protocol overhead
- Not concerned about fault tolerance

Which of the following routing techniques matches the criteria?

- ☐ Dynamic routing
- ☐ Hybrid routing
- ☐ Static routing
- ☐ Public routing

Question 106

Which Cisco Internetwork Operating System (IOS) command would be used to set the privileged mode password to "cisco"?

- ☐ router(config)# enable password cisco
- ☐ router# enable secret cisco
- ☐ router(config)# line password cisco
- ☐ router(config-router)# enable password cisco

Question 107

Which layer in the Open Systems Interconnection (OSI) model enables coding and conversion functions for application layer data?

- ☐ Presentation layer
- ☐ Session layer
- ☐ Application layer
- ☐ Physical layer

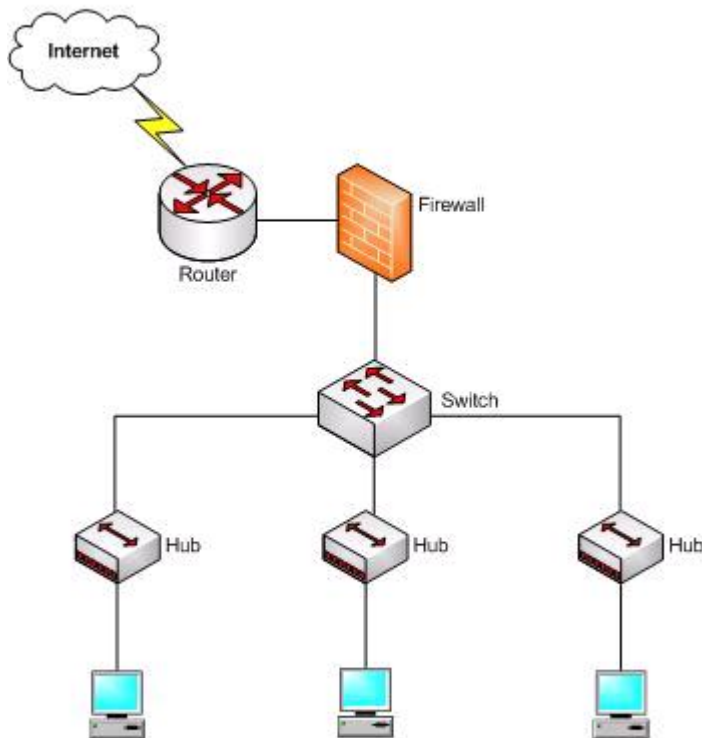
Question 108

Which protocol is responsible for negotiating and maintaining Point-to-Point Protocol (PPP) connections?

- ☐ LCP
- ☐ NCP
- ☐ BRI
- ☐ ISDN

Question 109

Which device in the given network diagram has as its primary responsibility the regulation of network traffic flow based on different trust levels for different computer networks?



- ☐ the router
- ☐ the switch
- ☐ the hub(s)
- ☐ the firewall

Question 110

Which of the following features is used with the `ip nat inside` command to translate multiple devices in the internal network to the single address in the IP address pool?

- ☐ static
- ☐ override
- ☐ overload
- ☐ dynamic

Question 111

Which statement best describes a converged network?

- ☐ a network with real-time applications
- ☐ a network with a mix of voice, video, and data traffic
- ☐ a network with a mix of voice and video traffic
- ☐ a network with mix of data and video traffic

Question 112

Refer to the following configuration on a Cisco router to allow Telnet access to remote users:

```
Router(config)#line vty 0 2
Router(config-line)#login
Router(config-line)#password guest
```

How many users can Telnet into this router at the same time?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 5

Question 113

Which is the valid IP address range that can be assigned to hosts on the subnet that includes the address 172.16.4.6/23?

- ☐ 172.16.2.1 - 172.16.4.254
- ☐ 172.16.3.1 - 172.16.5.254
- ☐ 172.16.4.1 - 172.16.5.254
- ☐ 172.16.4.1 - 172.16.4.254

Question 114

Which of the following is NOT a feature offered by Enhanced Interior Gateway Routing Protocol (EIGRP)?

- ☐ variable length subnet masks (VLSM)
- ☐ partial updates
- ☐ neighbor discovery mechanism
- ☐ multiple vendor compatibility

Question 115

Which Cisco Internetwork Operating System (IOS) command would be used to define a static route for network 192.168.11.0 through default gateway 192.168.43.1?

- ☐ router(config)# ip route 192.168.11.0 255.255.255.0 192.168.43.1
- ☐ router# ip route 192.168.11.0 255.255.255.0 192.168.43.1
- ☐ router(config)# ip classless 192.168.43.1
- ☐ router(config)# ip default gateway 192.168.11.0 255.255.255.0 192.168.43.1
- ☐ router# ip default gateway 192.168.43.1

Question 116

What IOS command produced the following output?

```
<output omitted>
Vlan Mac Address Type Ports
----
1 0040.63d8.ba0a DYNAMIC Fa0/1
1 0004.274c.9ca0 DYNAMIC Fa0/3
1 0040.63d8.bab8 DYNAMIC Fa0/10
1 000f.1fd3.d85a DYNAMIC Fa0/7
<output omitted>
```

- ☐ show interface mac
- ☐ show mac
- ☐ show mac-address-table
- ☐ show ip interface

Question 117

Which of the following commands will set the line speed of a serial connection that connects to a Channel Service Unit /Digital Service Unit (CSU/DSU) at 56 Kbps?

- ☐ service-module 56000 clock rate speed
- ☐ service-module 56k clock rate speed
- ☐ bandwidth 56k
- ☐ bandwidth 56000

Question 118

You are configuring a serial link between a Cisco router and a router produced by another vendor.

What would be the advantages of using Point to Point Protocol (PPP) over High Level Data Link Control (HDLC) in this scenario?

- ☐ HDLC has a proprietary "type" field that may be incompatible with equipment from other vendors.
- ☐ HDLC is not available on non-Cisco routers.
- ☐ PPP is faster.
- ☐ PPP performs error checking.

Question 119

Which Cisco 2950 switch command or set of commands would be used to create a Virtual LAN (VLAN) named MARKETING with a VLAN number of 25?

- ☐ switch(config)# vtp domain MARKETING 25
- ☐ switch(config)# vlan 25
- ☐ switch(config-vlan)# name MARKETING
- ☐ switch(config-if)# vlan 25 name MARKETING
- ☐ switch(config)# vtp 25
- ☐ switch(config-vtp)# name MARKETING

Question 120

Which of the following values will be used by a router to make a routing decision when two routes have been learned from OSPF?

- ☐ cost
- ☐ administrative distance
- ☐ composite metric
- ☐ hop count

Question 121

Which of these applications uses the IMAP protocol to transfer information between a server and a host?

- ☐ E-mail
- ☐ FTP
- ☐ Web browser
- ☐ Telnet

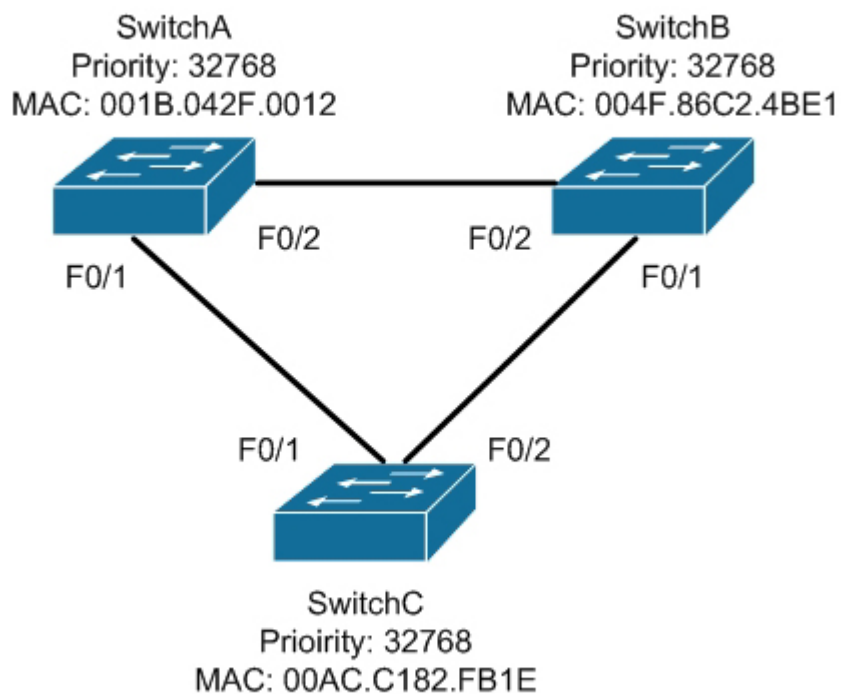
Question 122

Which service is denoted by TCP/UDP port number 53?

- ☐ Domain Name Service (DNS)
- ☐ File Transfer Protocol (FTP)
- ☐ Telnet
- ☐ HTTP

Question 123

View the following network diagram:

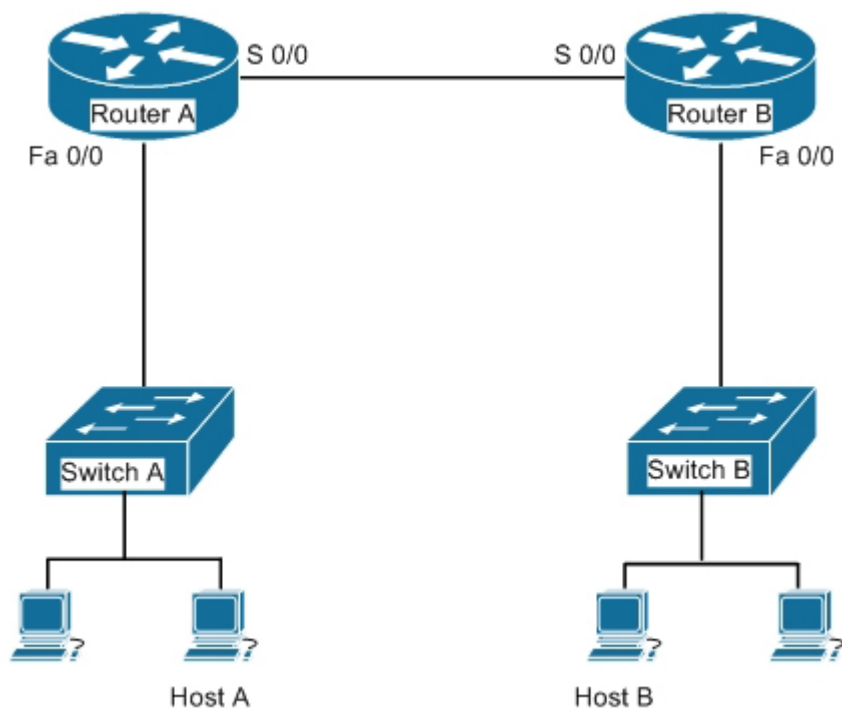


Which switch will become the root bridge?

- ☐ SwitchA
- ☐ SwitchB
- ☐ SwitchC
- ☐ The root bridge cannot be determined from the given information.

Question 124

Your assistant just finished configuring a small test network as part of his training. The network is configured as shown in the diagram below:



When testing the configuration, you find that Host A in the diagram cannot ping Host B.

Which of the following pairs of connections are required to be in the same subnet for Host A to be able to ping Host B? (Choose all that apply.)

- ☐ The IP address of Host A and the IP address of the Fa0/0 interface of Router A
- ☐ The IP address of the Fa0/0 interface of Router A and the IP address of the Fa0/0 interface of Router B
- ☐ The IP address of Host A and the IP address of the Fa0/0 interface of Router B
- ☐ The IP address of Host A and the IP address of Switch A
- ☐ The IP address of the S 0/0 interface of Router A and the IP address of the S 0/0 interface of Router B
- ☐ The IP address of Host A and the IP address of Host B
- ☐ The IP address of Host B and the IP address of the Fa0/0 interface of Router B

Question 125

Which Cisco IOS Cisco Discovery Protocol (CDP) command displays the IP address of the directly connected Cisco devices?

- ☐ show cdp
- ☐ show cdp devices
- ☐ show cdp traffic
- ☐ show cdp neighbors detail

Question 126

Which of the following is NOT a benefit of cloud computing to cloud users?

- ☐ On-demand self-service resources provisioning
- ☐ Centralized appearance of resources
- ☐ Highly available, horizontally scaled applications
- ☐ Cost reduction from standardization and automation

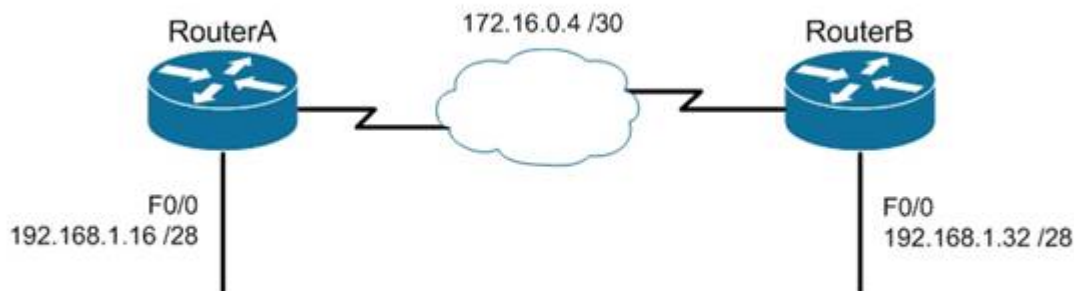
Question 127

Which Cisco Internetwork Operating System (IOS) command can be used to configure the location of the configuration file?

- ☐ boot buffersize
- ☐ configure
- ☐ boot config
- ☐ service config

Question 128

Consider the following diagram:



Which of the following routing protocols could NOT be used with this design?

- ☐ RIPv1
- ☐ RIPv2
- ☐ EIGRP
- ☐ OSPF

Question 129

You have added a new router to your network using all of the default settings. You can connect to everything by IP address, but the router doesn't seem to be resolving names to IP addresses. The DNS server is in a directly connected network.

Which of the following is most likely the problem?

- ☐ You configured an incorrect IP address for the DNS server
- ☐ You configured an incorrect default gateway on the router
- ☐ You failed to execute the ip domain lookup command
- ☐ You failed to create an IP helper address

Question 130

When the copy running-config startup-config command is issued on a router, where is the configuration saved?

- ☐ Random access memory (RAM)
- ☐ Flash
- ☐ Non-volatile random access memory (NVRAM)
- ☐ Read-only memory (ROM)

Question 131

Which of the following statements are TRUE regarding carrier sense multiple access collision detection (CSMA/CD)? (Choose three.)

- ☐ Networks are segmented into multiple collision domains using switches for CSMA/CD networks.
- ☐ Networks are segmented into multiple broadcast domains using switches for CSMA/CD networks.
- ☐ CSMA/CD networks normally operate on half-duplex mode.
- ☐ CSMA/CD networks normally operate on full-duplex mode.
- ☐ Gigabit Ethernet uses CSMA/CD as the media access control method.
- ☐ Gigabit Ethernet uses carrier sense multiple access with collision avoidance (CSMA/CA) as the media access control method.

Question 132

What two devices can be connected to a router WAN serial interface that can provide clocking? (Choose two.)

- ☐ CSU/DSU
- ☐ switch
- ☐ modem
- ☐ hub

Question 133

When packets are transmitted from one host to another across a routed segment, which two addresses are changed? (Choose two.)

- ☐ source IP address
- ☐ source MAC address
- ☐ destination IP address
- ☐ destination MAC address

Question 134

What command was used to generate the output shown below?

```
Connection-specific DNS Suffix . : ajax.acme.com
Description . . . . . : Broadcom NetXtreme 57xx Gigabit Controller

Physical Address. . . . . : 00-1A-A0-E1-95-AB
DHCP Enabled. . . . . : Yes
Autoconfiguration Enabled . . . : Yes
Link-local IPv6 Address . . : fe80::ada3:8b73:a66e:6bc0%10 (Preferred)
IPv4 Address. . . . . : 10.88.2.177 (Preferred)
Subnet Mask . . . . . : 255.255.255.0
Lease Obtained. . . . . : Wednesday, October 05, 2011 4:31:32 PM
Lease Expires . . . . . : Friday, October 07, 2011 4:33:32 AM
Default Gateway . . . . . : 10.88.2.6
DHCP Server . . . . . : 10.88.10.48
DHCPv6 IAID . . . . . : 234887840
DHCPv6 Client DUID. . . : 00-01-00-01-14-EE-0F-98-00-1A-A0-E1-95-AB

DNS Servers . . . . . : 10.88.10.48
10.75.139.18
NetBIOS over Tcpip. . . . . : Enabled
```

- ☐ winipcfg
- ☐ ipconfig
- ☐ ifconfig
- ☐ ipconfig/all

Question 135

What command can be used on a Cisco switch to display the virtual MAC address for the HSRP groups of which the switch is a member?

- ☐ switch# show standby mac
- ☐ switch# show hsrp mac
- ☐ switch# show standby
- ☐ switch# show standby brief

Question 136

On a Cisco 2950 switch, which status LED and color combination indicates a Power On Self-Test (POST) failure?

- ☐ system LED: no color
- ☐ system LED: solid red
- ☐ system LED: solid amber
- ☐ stat LED: no color
- ☐ stat LED: green

Question 137

Which Cisco IOS command will display the following partial output?

```
Codes: I - IGRP derived, R - RIP derived, O - OSPF derived,
C - Connected, S - static, E - EGP derived, B - BGP derived,
* - candidate default route, IA - OSPF inter area route,
i - IS-IS derived, ia - IS-IS, U - per-user static route,
o - on-demand routing, M - mobile, P - periodic downloaded static route,
D - EIGRP, EX - EIGRP external, E1 - OSPF external type 1 route,
E2 - OSPF external type 2 route, N1 - OSPF NSSA external type 1 route,
N2 - OSPF NSSA external type 2 route
```

```
Gateway of last resort is 10.30.10.85 to network 10.71.0.0
```

```
E 168.28.0.0 [140/8] via 10.212.215.122, 0:03:34, serial0/0
E 172.43.0.0 [140/8] via 10.145.231.221, 0:43:54, Ethernet 2
```

- ☐ show ip
- ☐ show ip route
- ☐ show ip route summary
- ☐ show route summary

Question 138

You have multiple departments sharing a common network. You are concerned about network traffic from one department reaching another department.

What would be a solution for isolating the departments? (Choose all that apply.)

- ☐ Configure separate VLANs for each department.
- ☐ Assign a unique VTP domain for each department.
- ☐ Put each department in a separate collision domain.
- ☐ Configure trunk links between departmental switches.
- ☐ Configure separate subnets for each department

Question 139

What configuration is needed to span a user defined Virtual LAN (VLAN) between two or more switches?

- ☐ A VTP domain must be configured.
- ☐ VTP pruning should be enabled.
- ☐ The VTP mode of operation should be server.
- ☐ A trunk connection should be set up between the switches.

Question 140

You run the following command:

```
switch# show ip interface brief
```

What information is displayed?

- ☐ A summary of the IP addresses and subnet mask on the interface
- ☐ A summary of the IP addresses on the interface and the interface's status
- ☐ The IP packet statistics for the interfaces
- ☐ The IP addresses for the interface and the routing protocol advertising the network

Question 141

You are configuring a WAN connection between two offices. You cannot ping between the routers in a test. The Serial0 interface on RouterA is connected to the Serial1 interface on RouterB.

The commands you have executed are shown below. What is the problem with the configuration?

```
RouterA(config)#username RouterB password lie
RouterA(config)#interface serial0
RouterA(config-if)#encapsulation ppp
RouterA(config-if)#ppp authentication chap
```

```
RouterB(config)#username RouterA password lie
RouterB(config)#interface serial0
RouterB(config-if)#encapsulation ppp
RouterB(config-if)#ppp authentication chap
```

- ☐ The passwords are incorrectly configured
- ☐ The usernames are incorrectly configured
- ☐ The wrong interface has been configured
- ☐ The encapsulation is incorrect on RouterA
- ☐ The encapsulation is incorrect on RouterB
- ☐ The authentication types do not match

Question 142

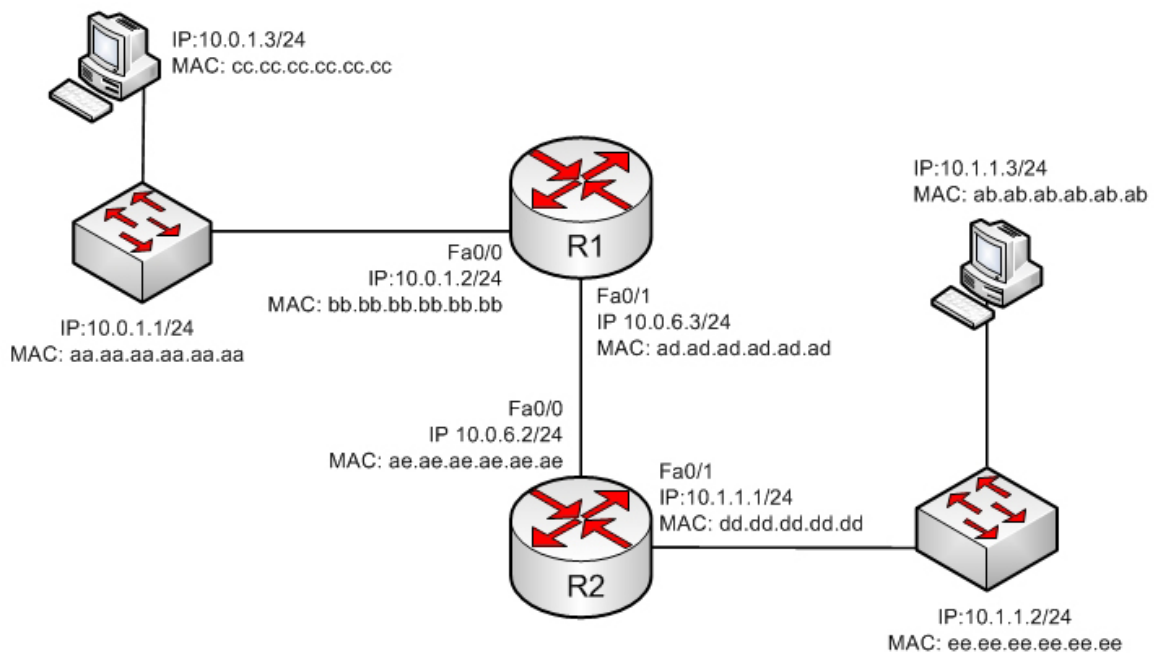
You wish to configure Secure Shell (SSH) support on your router so that incoming VTY connections are secure.

Which of the following commands must be configured? (Choose all that apply.)

- ☐ ip domain-name
- ☐ transport input ssh
- ☐ ip access-group
- ☐ crypto key generate rsa
- ☐ service config

Question 143

The workstation at 10.0.1.3 sends a packet to the workstation at 10.1.1.3.



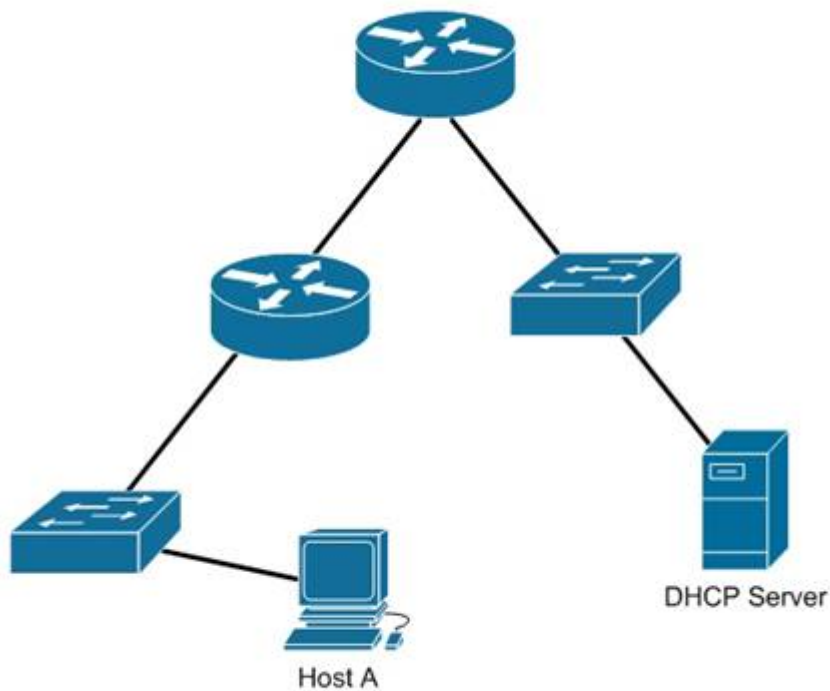
When the packet leaves the R2 router, what addresses will be located in the header? (Choose two.)

- ☐ Source MAC bb.bb.bb.bb.bb.bb Dest MAC ab.ab.ab.ab.ab.ab
- ☐ Source MAC dd.dd.dd.dd.dd.dd Dest MAC ab.ab.ab.ab.ab.ab
- ☐ Source MAC ee.ee.ee.ee.ee.ee Dest MAC ab.ab.ab.ab.ab.ab
- ☐ Source IP 10.0.1.3 Dest IP 10.1.1.3
- ☐ Source IP 10.0.1.1 Dest IP 10.1.1.2
- ☐ Source IP 10.0.1.2 Dest IP 10.1.1.3
- ☐ Source IP 10.0.1.1 Dest IP 10.1.1.3

Question 144

Host A is configured for DHCP, but it is not receiving an IP address when it powers up.

What is the most likely cause? (Click the Exhibit(s) button to view the network diagram.)



- ☐ The DHCP server is on the wrong subnet.
- ☐ Routers do not forward broadcast traffic.
- ☐ The DHCP server is misconfigured.
- ☐ Port security is enabled on the switch.

Question 145

Which of the following are classless routing protocols? (Choose four.)

- ☐ Open Shortest Path First (OSPF)
- ☐ Enhanced Interior Gateway Routing Protocol (EIGRP)
- ☐ Interior Gateway Routing Protocol (IGRP)
- ☐ Routing Information Protocol version 1 (RIPv1)
- ☐ Border Gateway Protocol (BGP)
- ☐ Routing Information Protocol version 2 (RIPv2)

Question 146

Which type of network uses Carrier Sense Multiple Access with Collision Detection (CSMA/CD) as an access method?

- ☐ Token Ring
- ☐ LocalTalk
- ☐ 100VG-AnyLan
- ☐ Ethernet

Question 147

Which WAN switching technology is used by Asynchronous Transfer Mode (ATM)?

- ☐ cell-switching
- ☐ virtual switching
- ☐ circuit-switching
- ☐ packet switching

Question 148

Which Cisco IOS command will enable a switch to copy the configuration from NVRAM to its RAM?

- ☐ copy tftp flash
- ☐ copy running-config flash
- ☐ copy startup-config flash
- ☐ copy startup-config running-config
- ☐ copy running-config startup config

Question 149

Which technique is used to stop routing loops by preventing route update information from being sent back over the interface on which it arrived?

- ☐ Holddown timer
- ☐ Triggered updates
- ☐ Route poisoning
- ☐ Split horizon
- ☐ Maximum hop count

Question 150

Enhanced Interior Gateway Routing Protocol (EIGRP) uses which algorithm to select the best path to the destination?

- ☐ Diffusing Update Algorithm (DUAL)
- ☐ Dijkstra algorithm
- ☐ Bellman-Ford algorithm
- ☐ Shortest Path First (SPF) algorithm

Question 151

How is load balancing achieved when implementing HSRP?

- ☐ By configuring multiple gateways on the routers
- ☐ By using multiple HSRP groups
- ☐ By configuring the same priority on all HSRP group members
- ☐ By configuring multiple virtual router addresses

Question 152

Which command is used to view the entire routing table?

- ☐ show route-map
- ☐ show ip mroute
- ☐ show ip route
- ☐ show ip protocols

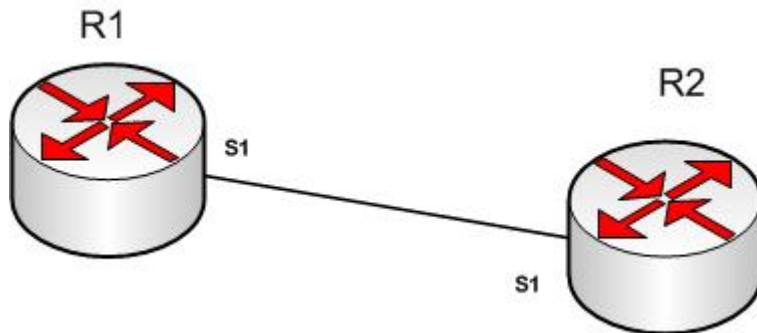
Question 153

Which is NOT a valid range for private IP addresses?

- ☐ 10.0.0.0 - 10.255.255.255
- ☐ 172.16.0.0 - 172.31.255.255
- ☐ 192.168.0.0 - 192.168.255.255
- ☐ 192.255.255.255-193.0.0.0

Question 154

R1 and R2 are connected as shown in the diagram and are configured as shown in output in the partial output of the show run command.



```
R1#show run
```

```
version 12.0
hostname R1
```

```
interface s1
ip address 192.168.5.5 255.255.255.252
```

```
ip host R1 192.168.5.6
```

```
R2#show run
```

```
version 12.0
hostname R2
```

```
interface s1
ip address 192.168.5.6 255.255.255.252
ip host R1 192.168.5.5
```

The command ping R2 fails when executed from R1. What command(s) would allow R1 to ping R2 by name?

- ☐ R1(config)#int S1
- ☐ R1(config-if)#no ip address 192.168.5.5
- ☐ R1(config-if)# ip address 192.168.5.9 255.255.255.252
- ☐ R1(config)#no ip host R1
- ☐ R1(config)# ip host R2 192.168.5.6 255.255.255.252
- ☐ R1(config)#no hostname R2
- ☐ R1(config)# hostname R1
- ☐ R2(config)#int S1
- ☐ R1(config-if)#no ip address 192.168.5.5
- ☐ R1(config-if)# ip address 192.168.5.9 255.255.255.0

Question 155

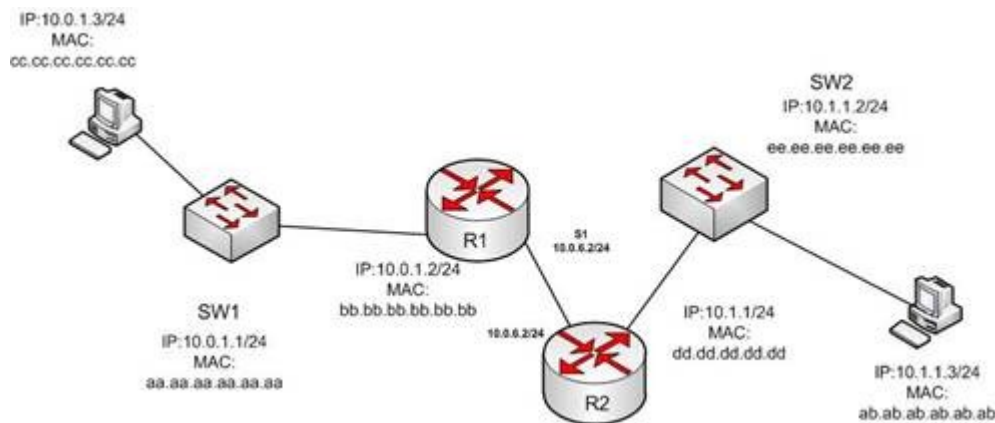
Which is the shortest possible notation of the following Internet Protocol version 6 (IPv6) address?

2001:0DB8:0000:0001:0000:0000:F00D

- ☐ 2001:DB8::1::F00D
- ☐ 2001:DB8:0:1::F00D
- ☐ 2001:DB8:0:1:0:0:F00D
- ☐ 2001:0DB8:0:1::F00D

Question 156

In the diagram below, if the workstation at 10.0.1.3 sends a packet to the workstation at 10.1.1.3, what will be the source physical address when the packet arrives at 10.1.1.3?



- ☐ ab.ab.ab.ab.ab.ab
- ☐ ee.ee.ee.ee.ee.ee
- ☐ dd.dd.dd.dd.dd.dd
- ☐ cc.cc.cc.cc.cc.cc
- ☐ aa.aa.aa.aa.aa.aa
- ☐ bb.bb.bb.bb.bb.bb

Question 157

Examine the partial output of the show ip interface command below.

```
Router# show ip interface

Serial0 is up, line protocol is up
Internet address is 1.1.1.2/24
Broadcast address is 255.255.255.255
Address determined by setup command
MTU is 1500 bytes
Helper address is not set
Directed broadcast forwarding is disabled
Outgoing access list is not set
Inbound access list is not set

GigabitEthernet0/3 is up, line protocol is up
Internet address is 192.168.93.1/28
Broadcast address is 255.255.255.255
Address determined by setup command
MTU is 1500 bytes
Helper address is not set
Directed broadcast forwarding is disabled
Outgoing access list is not set
Inbound access list is not set
```

What is the subnet broadcast address of the LAN connected to the router from which the command was executed?

- ☐ 192.168.93.15
- ☐ 192.168.93.255
- ☐ 1.1.1.255
- ☐ 1.1.1.127

Question 158

What Cisco Catalyst switch feature can be used to define ports as trusted for DHCP server connections?

- ☐ DHCP snooping
- ☐ port security
- ☐ 802.1x
- ☐ private VLANs

Question 159

Which command would be used to list the timers, version of spanning tree and the bridge ID of the local and designated switch for a specific VLAN on a Cisco Catalyst 2950 series switch?

- ☐ show spanning-tree vlan vlan-id
- ☐ show vlan database
- ☐ show vlan vlan-id
- ☐ show vlan brief

Question 160

You are attempting to add an IP address to an interface on a router with which you are unfamiliar. You type the following command and receive the following error:

```
Router78(config)#interfce Serial0
                        ^
```

%invalid input detected at '^' marker.

Which of the following could be a reason for receiving this message?

- ☐ the command syntax is incorrect
- ☐ the interface type does not exist on this router
- ☐ the command is entered at the wrong prompt
- ☐ the interface is configured already

Question 161

Which statement is supported by the following output?

```
router# show ip protocols
Routing Protocol is "eigrp 3"
Sending updates every 90 seconds, next due in 24 seconds
<<some output omitted>>
EIGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
EIGRP maximum hopcount 100
EIGRP maximum metric variance 1
Redistributing: eigrp 3
Automatic network summarization is not in effect
Maximum path: 4
Routing for Networks:
172.160.72.0
192.168.14.0
<<output omitted>>
```

- ☐ EIGRP supports load-balancing over three equal-cost paths
- ☐ EIGRP supports load-balancing over three unequal-cost paths
- ☐ EIGRP supports load-balancing over four equal-cost paths
- ☐ EIGRP supports load-balancing over four unequal-cost paths

Question 162

Which of the following cables would be used to connect a router to a switch?

- ☐ v.35
- ☐ crossover
- ☐ rollover
- ☐ straight-through

Question 163

A newly implemented IP-based video conferencing application is causing the network to slow down.

Which OSI layer needs to be addressed to resolve the problem?

- ☐ Layer 1
- ☐ Layer 2
- ☐ Layer 3
- ☐ Layer 4
- ☐ Layer 5
- ☐ Layer 6
- ☐ Layer 7

Question 164

Which of the following are Wide Area Network (WAN) protocols? (Choose three.)

- ☐ PPP
- ☐ AAA
- ☐ WEP
- ☐ STP
- ☐ HDLC
- ☐ Frame Relay

Question 165

RouterA and RouterB, which connect two locations, are unable to communicate. You run the show running-configuration command on both router interfaces, RouterA and RouterB. The following is a partial output:

```
routerA#show running-config
interface Serial0
description Router_A
ip address 192.10.191.2 255.255.255.0
encapsulation ppp
no ip mroute-cache
clockrate 64000
```

```
routerB#show running-config
interface Serial1
description Router_B
ip address 192.10.192.1 255.255.255.0
encapsulation ppp
no ip mroute-cache
clockrate 64000
```

Based on the information given in the output, what are two likely causes of the problem? (Choose two.)

- ☐ The IP address defined is incorrect.
- ☐ Both routers cannot have a clock rate defined.
- ☐ Both routers cannot have an identical clock rate.
- ☐ The Layer 2 framing is misconfigured.
- ☐ At least one of the routers must have the ip mroute-cache command enabled.

Question 166

Below is the output of the show ip route command from one of your routers:

```
R66#show ip route
```

```
.....
```

```
1.0.0.0/30 is subnetted, 4 subnets
```

- C 1.1.1.0 is directly connected, FastEthernet0/1
 - O 1.1.1.4 [110/2] via 1.1.1.2, 00:10:04, FastEthernet0/1
 - O 1.1.1.8 [110/2] via 1.1.1.13, 00:10:04, FastEthernet0/0
 - C 1.1.1.12 is directly connected, FastEthernet0/0
- ```
172.16.0.0/24 is subnetted, 4 subnets
```
- C 172.16.0.0 is directly connected, Ethernet0/0/0
  - O 172.16.1.0 [110/11] via 1.1.1.2, 00:10:04, FastEthernet0/1
  - O 172.16.2.0 [110/12] via 1.1.1.13, 00:09:24, FastEthernet0/0
  - [110/12] via 1.1.1.2, 00:09:24, FastEthernet0/1
  - O 172.16.3.0 [110/11] via 1.1.1.13, 00:10:04, FastEthernet0/0

What does the value 110 represent in the output?

- ☐ OSPF administrative distance
- ☐ EIGRP administrative distance
- ☐ OSPF cost
- ☐ EIGRP cost

**Question 167**

Which of the following is the correct command to define a default route using a gateway address of 172.16.0.254?

- ☐ ip default-route 172.16.0.254 255.255.0.0
- ☐ ip route 0.0.0.0 0.0.0.0 172.16.0.254
- ☐ default-gateway 172.16.0.254
- ☐ ip route default 172.16.0.254

**Question 168**

You and your team are evaluating the use of OSPFv3 in your IPv6 network.

Which of the following statements is true of OSPFv3?

- ☐ There will be a higher demand on the processor to run the link-state routing algorithm
- ☐ Router IDs must match for adjacency formation
- ☐ Area IDs do not need to match for adjacency formation
- ☐ Area types do not need to match for adjacency formation

**Question 169**

Which of the following statements best describes the result of issuing the command `standby 44 timers 3 1` on an HSRP router?

- ☐ The holdtime will be set to a value of 3, and the hellotime will be set to a value of 1.
- ☐ The status of the standby router will be displayed as unknown expired.
- ☐ The role of active router will be passed repeatedly from one router to another.
- ☐ The router will be configured to reassume the role of active router in the event that the router fails and is subsequently restarted.

**Question 170**

Which are among the valid steps in the process of recovering a password on a Cisco router? (Choose all that apply.)

- ☐ Restart the router.
- ☐ Configure the enable secret password.
- ☐ Enter the router diagnostic mode.
- ☐ Enter user mode.
- ☐ Answer the security question to recover the password.

**Question 171**

What command disables 802.1x authentication on a port and permits traffic without authentication?

- ☐ `dot1x port-control disable`
- ☐ `dot1x port-control force-unauthorized`
- ☐ `dot1x port-control auto`
- ☐ `dot1x port-control force-authorized`

**Question 172**

Which Cisco IOS command would produce the following output?

```
Serial0/0/0 is administratively down, line protocol is down
Hardware is GT96K Serial
Internet address is 134.108.28.8, subnet mask is 255.255.255.0
MTU 1500 bytes, BW 10000 Kbit, DLY 100000 usec, rely 255/255, load
1/255
Encapsulation HDLC, loopback not set,
Keepalive set (10 sec)
Last input never, output 0:00:14, output hang never
Last clearing of "show interface" counters 0:00:00
Input queue 0/40/0/0, (size/max/drops/flushes);Total output drops :81071
Queueing strategy:FIFO
Output Queue: 0/40 (size/max)
Five minute input rate 0 bits/sec, 0 packets/sec
Five 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
145 packets output, 5084 bytes, 0 underruns
0 output errors, 0 collisions, 4 interface resets, 0 restarts
<<output omitted>>
```

- ☐ show ip interface
- ☐ show ip interface brief
- ☐ show interfaces
- ☐ show interface brief

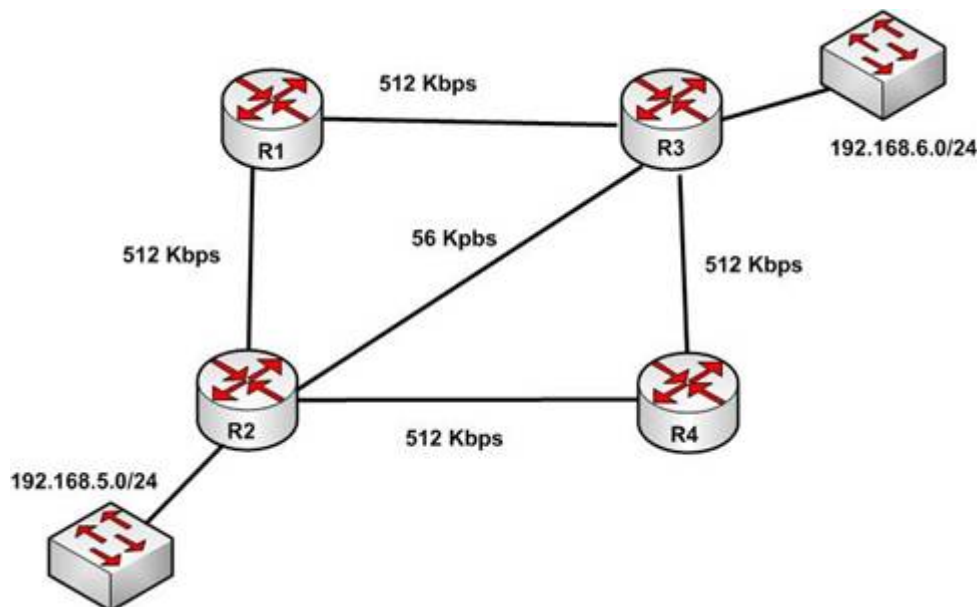
**Question 173**

Which Enhanced Interior Gateway Routing Protocol (EIGRP) packet type is used for neighbor discovery?

- ☐ Hello
- ☐ Update
- ☐ Queries
- ☐ Replies

### Question 174

With respect to the network shown below, which of the following statements are true when R2 sends a packet to the 192.168.6.0/24 network? (Choose all that apply.)



- ☐ If RIPv1 is in use, the path taken will be R2 - R4 - R3
- ☐ If both RIPv2 and EIGRP are in use, the EIGRP route will be placed in the routing table
- ☐ If EIGRP is in use, the only path taken will be R2 - R4 - R3
- ☐ If RIPv2 is in use, the path taken will be R2 - R3

### Question 175

You manage the EIGRP subnet in your organization. You have enabled EIGRP for IPv6 on all the routers in the EIGRP AS 260 using the following commands on all the routers:

The **ipv6 unicast-routing** command in global configuration mode

The **interface** command in global configuration mode

The **ipv6 enable** command in interface configuration mode

The **ipv6 eigrp** command in interface configuration mode

The **ipv6 router eigrp** command in global configuration mode

The **eigrp router-id** command in global configuration mode

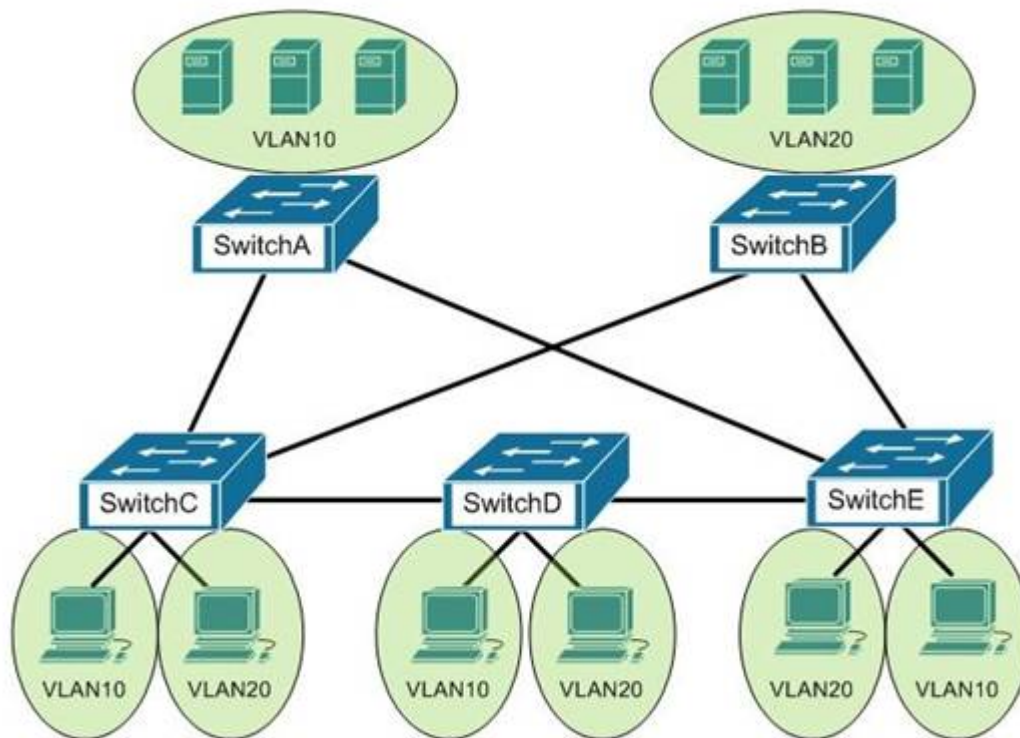
During verification, you discover that EIGRP for IPv6 is not running on the routers.

Which of the following should be done to fix the issue?

- ☐ The **ipv6 address** command should be executed in interface configuration mode.
- ☐ The **ipv6 address** command should be executed in router configuration mode.
- ☐ The **eigrp router-id** command should be executed in interface configuration mode.
- ☐ The **eigrp router-id** command should be executed in router configuration mode.

**Question 176**

You are the switch administrator for InterConn. The network is physically wired as shown in the diagram. You are planning the configuration of STP. The majority of network traffic runs between the hosts and servers within each VLAN.



You would like to designate the root bridges for VLANS 10 and 20. Which switches should you designate as the root bridges?

- ☐ Switch A for VLAN 10 and Switch E for VLAN 20
- ☐ Switch A for VLAN 10 and Switch B for VLAN 20
- ☐ Switch A for VLAN 10 and Switch C for VLAN 20
- ☐ Switch D for VLAN 10 and Switch B for VLAN 20
- ☐ Switch E for VLAN 10 and Switch A for VLAN 20
- ☐ Switch B for VLAN 10 and Switch E for VLAN 20

**Question 177**

Which of the following splits the network into separate broadcast domains?

- ☐ bridges
- ☐ VLANs
- ☐ switches
- ☐ hubs

**Question 178**

Which of the following is NOT a characteristic of Open Shortest Path First (OSPF)?

- ☐ Is a Cisco-proprietary routing protocol
- ☐ Has a default administrative distance of 110
- ☐ Supports authentication
- ☐ Uses cost as the default metric

**Question 179**

Which Cisco IOS command enables a router to copy IOS images to a router?

- ☐ copy tftp flash
- ☐ copy flash tftp
- ☐ copy running-config tftp
- ☐ copy running-config startup-config
- ☐ copy tftp running-config

**Question 180**

You have a router that is not syncing with its configured time source.

Which of the following is NOT a potential reason for this problem?

- ☐ The reported stratum of the time source is 12
- ☐ The IP address configured for the time source is incorrect
- ☐ NTP authentication is failing
- ☐ There is an access list that blocks port 123

**Question 181**

Which Cisco Internetwork Operating System (IOS) command is used to encrypt passwords on Cisco routers?

- ☐ password secure
- ☐ service encryption-password
- ☐ service password-encryption
- ☐ enable password

**Question 182**

Why is it recommended to use Spanning Tree Protocol (STP) in Local Area Networks (LANs) with redundant paths?

- ☐ To prevent loops
- ☐ To manage VLANs
- ☐ To load balance across different paths
- ☐ To prevent forwarding of unnecessary broadcast traffic on trunk links

**Question 183**

Which statements are TRUE regarding Internet Protocol version 6 (IPv6) addresses? (Choose three.)

- ☐ An IPv6 address is divided into eight 16-bit groups.
- ☐ A double colon (::) can only be used once in a single IPv6 address.
- ☐ IPv6 addresses are 196 bits in length.
- ☐ Leading zeros cannot be omitted in an IPv6 address.
- ☐ Groups with a value of 0 can be represented with a single 0 in IPv6 address.

**Question 184**

Which type of network connection requires a straight-through cable?

- ☐ host to host
- ☐ switch to router
- ☐ switch to switch
- ☐ host to router's Ethernet port

**Question 185**

Which of the following is a Point-to-Point Protocol (PPP) authentication protocol that supports sending of hashed values instead of sending passwords in clear text?

- ☐ LCP
- ☐ NCP
- ☐ PAP
- ☐ CHAP

**Question 186**

A router is running several routing protocols, and as a result has learned three routes to the 192.168.5.0 network. Below are the details about the three learned routes:

| Routing Protocol | Cost    |
|------------------|---------|
| RIP              | 5       |
| OSPF             | 25      |
| EIGRP            | 2269571 |

Based on this information, which route will be placed in the routing table?

- ☐ the RIP route
- ☐ the OSPF route
- ☐ the EIGRP route
- ☐ all of the routes

**Question 187**

Which of the following statements are NOT part of the guidelines for configuring VLAN Trunking Protocol (VTP) to ensure that VLAN information is distributed to all Cisco switches in the network? (Choose all that apply.)

- ☐ The VTP version must be the same on all switches in a VTP domain.
- ☐ The configuration revision number must be configured identically on all switches in a VTP domain.
- ☐ The VTP password must be the same on all switches in a VTP domain.
- ☐ The VTP domain name must be the same on all switches in a VTP domain.
- ☐ VLANs configured on clients should exist on the server switch.
- ☐ The switch(s) that will share VLAN information is(are) operating in VTP server mode
- ☐ The switches must be configured to use the same method of VLAN tagging
- ☐ The switches must be connected with trunk links

**Question 188**

Which feature enables a host to obtain an IP address from a DHCP server on another subnet?

- ☐ DHCP relay agent
- ☐ DHCP BOOTP agent
- ☐ DHCP relay protocol
- ☐ DHCP BOOTP relay

**Question 189**

You are the network administrator for your company. You wanted to connect the host computers to the switches.

Which cable should you use to ensure the connectivity?

- ☐ Straight-through cable
- ☐ Rollover cable
- ☐ Crossover cable
- ☐ Serial cable

**Question 190**

Which of the following protocols is responsible for negotiating upper-layer protocols that will be carried across a Point-to-Point Protocol (PPP) connection?

- ☐ LCP
- ☐ NCP
- ☐ LMI
- ☐ ISDN

**Question 191**

Which statement is TRUE of the CSMA/CD Ethernet media access method?

- ☐ It requires centralized monitoring and control.
- ☐ It is ideal for a switched network environment.
- ☐ It uses a back-off algorithm to calculate a random time value.
- ☐ Each station is allotted a time slot in which they can transmit data.

**Question 192**

You network team is exploring the use of switch stacking.

Which of the following statements is NOT true of switch stacking?

- ☐ The master switch is the only switch with full access to the interconnect bandwidth
- ☐ Switches are connected with special cable
- ☐ The stack has a single IP address
- ☐ Up to nine switches can be added to the stack

**Question 193**

You are configuring a Cisco router.

Which command would you use to convey a message regarding the remote access security policy of your organization to a user logging into the router?

- ☐ hostname
- ☐ banner motd
- ☐ description
- ☐ boot system
- ☐ terminal monitor

**Question 194**

You are advising a client on the options available to connect a small office to an ISP.

Which of the following is an advantage of using an ADSL line?

- ☐ it uses the existing cable TV connection
- ☐ it uses the existing phone line
- ☐ you receive a committed information rate (CIR) from the provider
- ☐ the upload rate is as good as the download rate

**Question 195**

Which Cisco Internetwork Operating System (IOS) command is used to make the running configuration in Random Access Memory (RAM) to the configuration the router will use at startup?

- ☐ copy running-config startup-config
- ☐ copy flash running-config
- ☐ copy tftp flash
- ☐ copy running-config flash memory
- ☐ copy startup-config tftp
- ☐ copy tftp running-config
- ☐ copy running-config tftp

**Question 196**

As part of a new initiative to tighten the security of your Cisco devices, you have configured the firewall to restrict access to the devices from the outside.

What would be other recommended ways of protecting the integrity of the device configuration files on the devices while ensuring your continued ability to manage the devices remotely? (Choose all that apply.)

- ☐ encrypt the configuration files
- ☐ use SSH to connect to the devices for management
- ☐ prevent the loss of administrator passwords by disabling their encryption
- ☐ disable the VTY ports on the devices
- ☐ use an encrypted password for VTY access

**Question 197**

Which two are the limitations of the service password-encryption command? (Choose two.)

- ☐ It uses the MD5 algorithm for password hashing.
- ☐ It uses the Vigenere cipher algorithm.
- ☐ An observer cannot read the password when looking at the administrator's screen.
- ☐ The algorithm used by this command cannot protect the configuration files against detailed analysis by attackers.

**Question 198**

You set up several routers in your lab. Two of them are connected back to back using Data Terminal Equipment (DTE)-to-Data Circuit-terminating Equipment (DCE) cable. You need to configure the clock rate.

On which router would you configure the clock rate?

- ☐ the DCE
- ☐ the DTE
- ☐ The clock rate is set by default
- ☐ The clock rate cannot be configured

**Question 199**

You are the network administrator for your company. You have been assigned the task of configuring an appropriate IP addressing scheme in the network.

Assuming that the network address is 192.16.100.0/28, what will be the number of hosts per network in this scenario?

- ☐ 2
- ☐ 6
- ☐ 14
- ☐ 30

**Question 200**

Which command is used to disable Cisco Discovery Protocol (CDP) on a Cisco router?

- ☐ disable cdp
- ☐ no cdp run
- ☐ no cdp enable
- ☐ no cdp advertise-v2

**Question 201**

What command produced the following as a part of its output?

```
1 14.0.0.2 4 msec 4 msec 4 msec
2 63.0.0.3 20 msec 16 msec 16 msec
3 33.0.0.4 16 msec * 16 msec
```

- ☐ Ping
- ☐ Traceroute
- ☐ Tracert
- ☐ Extended ping

### Question 202

What will be the effect of executing the following command on port F0/1?

```
switch(config-if)# switchport port-security mac-address 00C0.35F0.8301
```

- ☐ The command statically defines the MAC address of 00c0.35f0.8301 as an allowed host on the switch port.
- ☐ The command expressly prohibits the MAC address of 00c0.35f0.8301 as an allowed host on the switch port.
- ☐ The command configures an inbound access control list on port F0/1 limiting traffic to the IP address of the host.
- ☐ The command encrypts all traffic on the port from the MAC address of 00c0.35f0.8301.

### Question 203

You apply the following commands to a router named R2:

```
R2(config)# interface Tunnel1
R2(config-if)# ip address 172.16.1.2 255.255.255.0
R2(config-if)# ip mtu 1400
R2(config-if)# ip tcp adjust-mss 1360
R2(config-if)# tunnel source 2.2.2.2
R2(config-if)# tunnel destination 1.1.1.1
```

Which statement is NOT true with regard to this configuration?

- ☐ The physical IP address of R2 is 2.2.2.2
- ☐ The connection will operate in IP mode
- ☐ The configuration will increase packet fragmentation
- ☐ The configuration alters the maximum segment size

### Question 204

You are configuring all your devices for IPv6. Which of the following is the only device that requires the `ipv6 unicast-routing` command?

- ☐ Layer 2 switch
- ☐ Router
- ☐ Adaptive security appliance
- ☐ Wireless AP

**Question 205**

Which of the following are NOT valid IPv6 addresses? (Choose all that apply.)

- ☐ 225.1.4.2
- ☐ ::FFFF:10.2.4.1
- ☐ ::
- ☐ 2001:0:42:3:ff::1
- ☐ fe80:2030:31:24
- ☐ 2001:42:4:0:0:1:34:0
- ☐ 2003:dead:bef:4dad:ab33:46:abab:62

**Question 206**

What is the broadcast address for subnet 172.25.4.0/23?

- ☐ 172.25.4.255
- ☐ 172.25.5.255
- ☐ 172.25.6.255
- ☐ 172.25.7.255

**Question 207**

On which of the following networks will OSPF elect a designated router (DR)? (Choose two.)

- ☐ Broadcast
- ☐ NBMA
- ☐ Point-to-point
- ☐ Point-to-multipoint

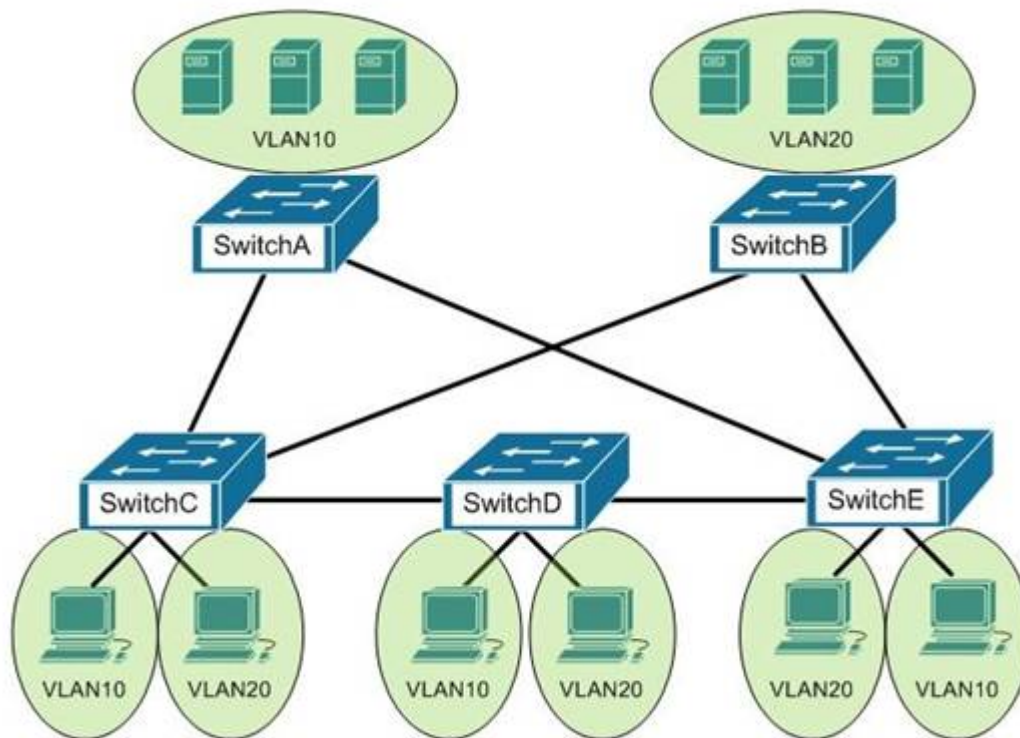
**Question 208**

Which Cisco IOS command can be issued on a router to test the connectivity of one interface from another interface on the same router?

- ☐ ping (with no address specified)
- ☐ ping (with an address specified)
- ☐ tracert
- ☐ traceroute

### Question 209

You are the switch administrator for InterConn. The network is physically wired as shown in the diagram. You are planning the configuration of STP. The majority of network traffic runs between the hosts and servers within each VLAN.



You would like to designate the root bridges for VLANS 10 and 20. Which switches should you designate as the root bridges?

- ☐ Switch A for VLAN 10 and Switch E for VLAN 20
- ☐ Switch A for VLAN 10 and Switch B for VLAN 20
- ☐ Switch A for VLAN 10 and Switch C for VLAN 20
- ☐ Switch D for VLAN 10 and Switch B for VLAN 20
- ☐ Switch E for VLAN 10 and Switch A for VLAN 20
- ☐ Switch B for VLAN 10 and Switch E for VLAN 20

### Question 210

Which Cisco Internetwork Operating System (IOS) command is used to save the running configuration to non-volatile random access memory (NVRAM)?

- ☐ copy startup-config running-config
- ☐ move startup-config running-config
- ☐ copy running-config startup-config
- ☐ move startup-config running-config

**Question 211**

Which command is NOT mandatory for inclusion in a plan to implement IP Service Level Agreements (SLAs) to monitor IP connections and traffic?

- ☐ ip sla
- ☐ ip sla schedule
- ☐ ip sla reset
- ☐ icmp-echo

**Question 212**

What is the default Administrative Distance (AD) value for an Enhanced Interior Gateway Routing Protocol (EIGRP) summary route?

- ☐ 1
- ☐ 5
- ☐ 90
- ☐ 20

**Question 213**

Which of the following is NOT a mode of Dynamic Trunking Protocol (DTP)?

- ☐ dynamic auto
- ☐ dynamic trunk
- ☐ dynamic desirable
- ☐ nonegotiate

**Question 214**

Which Enhanced Interior Gateway Routing Protocol (EIGRP) packet is NOT sent reliably over the network?

- ☐ Update
- ☐ Query
- ☐ Reply
- ☐ Acknowledgement

**Question 215**

File Transfer Protocol (FTP) and Simple Mail Transfer Protocol (SMTP) work at which layer in the Open Systems Interconnection (OSI) model?

- ☐ the Session layer
- ☐ the Presentation layer
- ☐ the Application layer
- ☐ the Network layer

**Question 216**

A new switch is added to the network, and several production VLANs are shut down.

Which of the following is a probable cause for this scenario? (Choose two.)

- ☐ The new switch has a lower configuration revision number than existing switches.
- ☐ The new switch has a higher configuration revision number than existing switches.
- ☐ The new switch is operating in transparent mode.
- ☐ The new switch is operating in server mode.

**Question 217**

Which Cisco command will display the version and configuration data for Secure Shell (SSH)?

- ☐ show ssh
- ☐ show ip ssh
- ☐ debug ssh
- ☐ debug ip ssh

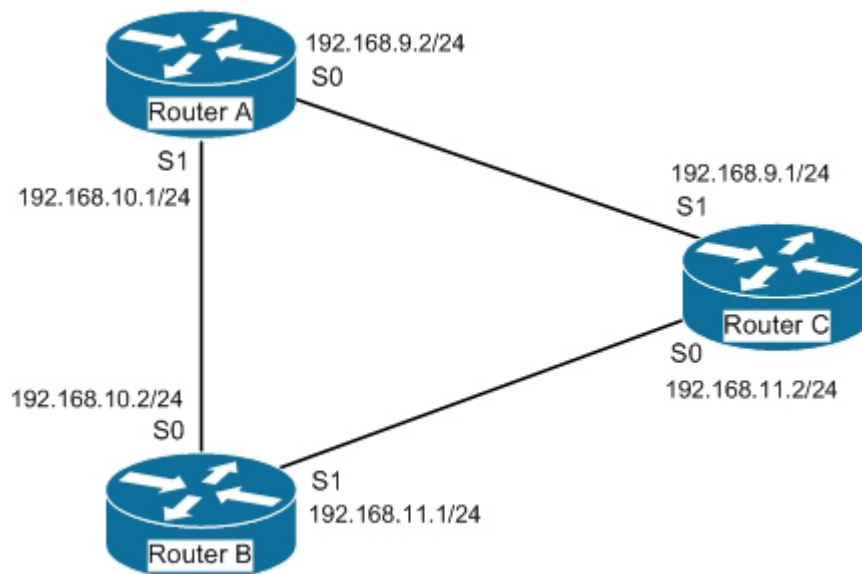
**Question 218**

Which two statements are TRUE of Internet Protocol (IP) addressing? (Choose two.)

- ☐ Public addresses are registered with the Internet Assigned Numbers Authority (IANA).
- ☐ These addresses are publicly registered with the Internet Service Provider (ISP).
- ☐ Through a public IP address, you can access another computer on the Internet, such as a Web server.
- ☐ The ranges of public IP addressing are 10.0.0.0 to 10.255.255.255, 172.16.0.0 to 172.31.255.255, and 192.168.0.0 to 192.168.255.255.
- ☐ Private addresses are allocated by the Internet Assigned Numbers Authority (IANA).

**Question 219**

You have three EIGRP routers that are connected as shown in the diagram below.



Router A and Router C do not seem to be exchanging information. You execute commands on all three routers, and receive as output the information shown below:

```
Router A# show ip eigrp neighbors
Address Interface holdtime uptime Q Seq SRTT RTO
192.168.10.2 S1 13 1:20:10 100 458 0 30
```

```
routerA# show run
<output omitted>
router eigrp 56
network 192.168.10.0
network 192.168.9.0
no auto-summary
```

```
routerC# show run
<output omitted>
router eigrp 56
network 192.168.11.0
no auto-summary
```

What needs to be done to make Routers A and C start exchanging information?

- ☐ Execute the auto-summary command on Router A
- ☐ Execute the network 192.168.9.0 command under EIGRP 56 on Router C
- ☐ Correct the IP address on the S1 interface of Router C
- ☐ Recreate the EIGRP configuration on Router C as EIGRP 55

**Question 220**

You are the network administrator for your company. You have a Class B address range and are planning for a network that allows 150 hosts per subnet and at least 164 subnets.

Which subnet mask should you use to accomplish the task?

- ☐ 255.255.192.0
- ☐ 255.255.255.192
- ☐ 255.255.255.0
- ☐ 255.255.255.252

**Question 221**

Which of the following is a frame tagging method for identifying Virtual LAN (VLAN) memberships over trunk links?

- ☐ STP
- ☐ RIP
- ☐ CDP
- ☐ 802.1q

**Question 222**

Which device will always have all of its ports in the same collision domain?

- ☐ Hub
- ☐ Bridge
- ☐ Switch
- ☐ Router

**Question 223**

Which Cisco Internetwork Operating System (IOS) command is used to view information about the Dynamic Host Configuration Protocol (DHCP) address pool?

- ☐ show ip dhcp server statistics
- ☐ show ip dhcp pool
- ☐ show dhcp pool
- ☐ show ip dhcp server pool

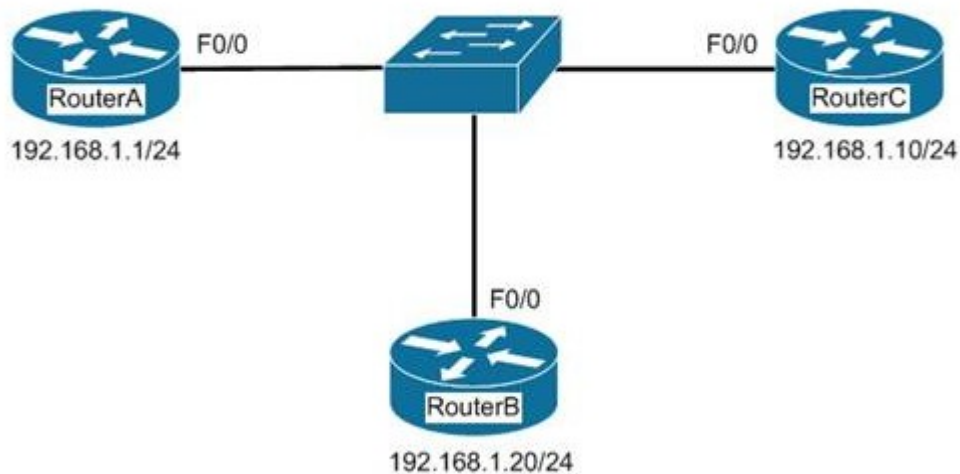
**Question 224**

Which of the following fields are in a Transmission Control Protocol (TCP) header? (Choose three.)

- ☐ Length
- ☐ Sequence Number
- ☐ Data Offset
- ☐ Type-of-Service
- ☐ Window

**Question 225**

In the network exhibit, the routers are running OSPF and are set to the default configurations. (Click the Exhibit(s) button.)



What would be the effect of configuring a loopback interface on RouterA with an address of 192.168.1.50/24?

- ☐ Router B would become the DR
- ☐ Router A would become the DR
- ☐ Router C would become the DR
- ☐ Router A would become the BDR

### Question 226

You are the network administrator for your company and have configured Cisco Discovery Protocol (CDP) in your network. You recently noticed that when devices send large numbers of CDP neighbor announcements, some devices are crashing. You decide to disable CDP on the router.

Which command should you use to achieve the objective?

- ☐ no cdp run
- ☐ set cdp disable
- ☐ no cdp enable
- ☐ no cdp advertise-v2

### Question 227

Which option lists the given applications in the correct sequence of increasing bandwidth consumption?

- ☐ an interactive Telnet session on a server running an SAP application
- ☐ a voice conversation between PC-based VoIP services
- ☐ a voice conversation between two IP phones while accessing an online video site
- ☐ a voice conversation between two IP phones while accessing an online video site
- ☐ an interactive Telnet session on a server running an SAP application
- ☐ a voice conversation between PC-based VoIP services
- ☐ a voice conversation between PC-based VoIP services
- ☐ a voice conversation between two IP phones while accessing an online video site
- ☐ an interactive Telnet session on a server running an SAP application
- ☐ an interactive Telnet session on a server running an SAP application
- ☐ a voice conversation between two IP phones while accessing an online video site
- ☐ a voice conversation between PC-based VoIP services

### Question 228

As part of a new initiative to tighten the security of your Cisco devices, you have configured the firewall to restrict access to the devices from the outside.

What would be other recommended ways of protecting the integrity of the device configuration files on the devices while ensuring your continued ability to manage the devices remotely? (Choose all that apply.)

- ☐ encrypt the configuration files
- ☐ use SSH to connect to the devices for management
- ☐ prevent the loss of administrator passwords by disabling their encryption
- ☐ disable the VTY ports on the devices
- ☐ use an encrypted password for VTY access

**Question 229**

Which of the following technologies should be used to prevent a switching loop if a switch is connected to a port configured for PortFast?

- ☐ RSTP
- ☐ BPDU Guard
- ☐ Root Guard
- ☐ PVST

**Question 230**

Which Wide Area Network (WAN) switching technology is used by Asynchronous Transfer Mode (ATM)?

- ☐ packet switching
- ☐ virtual switching
- ☐ circuit switching
- ☐ cell switching

**Question 231**

If a routing table contains multiple routes for the same destination, which were inserted by the following methods, which route will the router use to reach the destination network?

- ☐ The route inserted by RIP
- ☐ The route inserted by OSPF
- ☐ The route inserted by BGP
- ☐ The route configured as a static route

**Question 232**

What is the term used for the Ethernet communication mechanism by which hosts can send and receive data simultaneously?

- ☐ full-duplex
- ☐ multiplex
- ☐ half-duplex
- ☐ duplex

**Question 233**

When transmitting to a remote destination, what two things will occur after a host has determined the IP address of the destination to which it is transmitting? (Choose two.)

- ☐ The sending host will perform an ARP broadcast in its local subnet using the IP address of the destination host.
- ☐ The sending host will perform an ARP broadcast in its local subnet using the IP address of the local router interface.
- ☐ The local router interface will respond with the MAC address of the destination host.
- ☐ The local router interface will respond with its own MAC address.
- ☐ The destination host will respond with its own MAC address.

**Question 234**

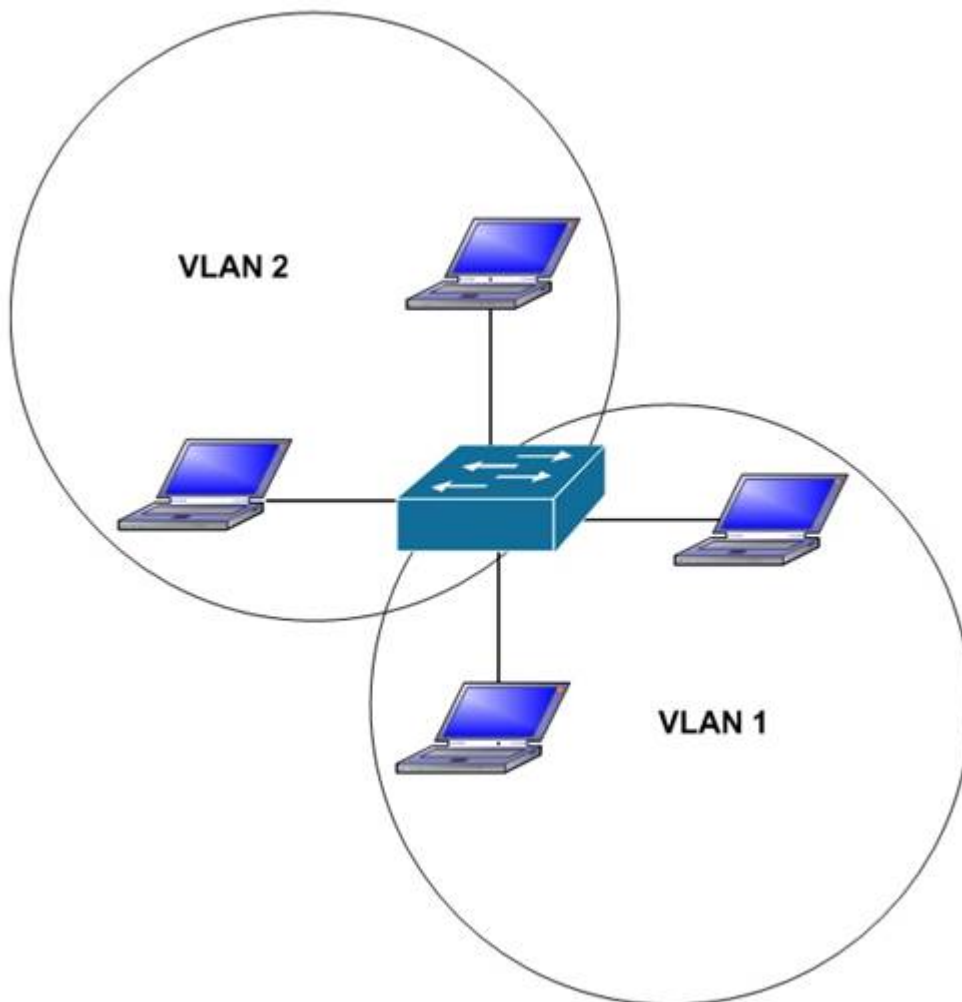
You just finished configuring VLAN Trunking Protocol (VTP) in a network containing five switches. One of the switches is not receiving VLAN information from the switch that is acting as the server.

Which of the following could NOT be a reason why the switch is not receiving the information?

- ☐ The VTP domain name on the switch may be misspelled
- ☐ The VTP password may be misspelled on the switch
- ☐ The configuration revision number may be out of sync
- ☐ The VTP version used on the switch may be different

**Question 235**

Which of the following statements are true with regard to the network shown in the exhibit? (Click the Exhibit(s) button.)



- ☐ there is one broadcast domain and one collision domain
- ☐ there is one broadcast domain and four collision domains
- ☐ there are two broadcast domains and two collision domains
- ☐ there are two broadcast domains and four collision domains
- ☐ the hosts in VLAN1 could use IP addresses 192.168.5.4/24 and 192.168.5.5/24 and the hosts in VLAN2 could use IP addresses 192.168.6.1/24 and 192.168.6.2/24
- ☐ the hosts in VLAN2 could use IP addresses 192.168.5.5/24 and 192.168.6.5/24

**Question 236**

Which command will save a dynamically learned MAC address in the running-configuration of a Cisco switch?

- ☐ switchport port-security mac-address
- ☐ switchport port-security
- ☐ switchport port-security sticky mac-address
- ☐ switchport port-security mac-address sticky
- ☐ switchport mac-address sticky

**Question 237**

Which of the following is NOT a possible component of Enhanced Interior Gateway Routing Protocol's (EIGRP) composite metric?

- ☐ Cost
- ☐ Load
- ☐ Delay
- ☐ Bandwidth

**Question 238**

A new trainee is setting up a router in a test lab, and he asks you to describe the use of the connector marked BRI on the router.

Which is a correct use for this connector?

- ☐ A WAN interface for a T1 connection
- ☐ A LAN interface to connect to a switch
- ☐ An interface to connect a console cable
- ☐ A WAN interface for an ISDN connection

### Question 239

You instructed your assistant to add a new router to the network. The routers in your network run OSPF. The existing router, OldRouter, is configured as follows:

```
router ospf 1
network 192.168.5.0 0.0.0.255 area 0
network 192.168.10.0 0.0.0.255 area 0
```

The OldRouter interface that connects to NewRouter is 192.168.5.3/24. Your assistant shows you the configuration that will be implemented:

```
newrouter(config)# router ospf 1
newrouter(config-router)# network 192.168.5.0 255.255.255.0 area 0
```

What is wrong with this configuration?

- ☐ The area ID is incorrectly configured.
- ☐ The wildcard mask is incorrectly configured.
- ☐ The network statement is incorrectly configured.
- ☐ The process ID number is incorrectly configured.

### Question 240

You are discovering that there are differences between the configuration of EIGRP for IPv6 and EIGRP for IPv4. Which statement is true with regard to the difference?

- ☐ A router ID is required for both versions
- ☐ A router ID must be configured under the routing process for EIGRP for IPv4
- ☐ AS numbers are not required in EIGRP for IPv6
- ☐ AS numbers are not required in EIGRP for IPv4

### Question 241

Which command will display the Virtual LAN (VLAN) frame tagging method for a switch link?

- ☐ show vlan
- ☐ show vlan encapsulation
- ☐ show vtp status
- ☐ show interfaces trunk

**Question 242**

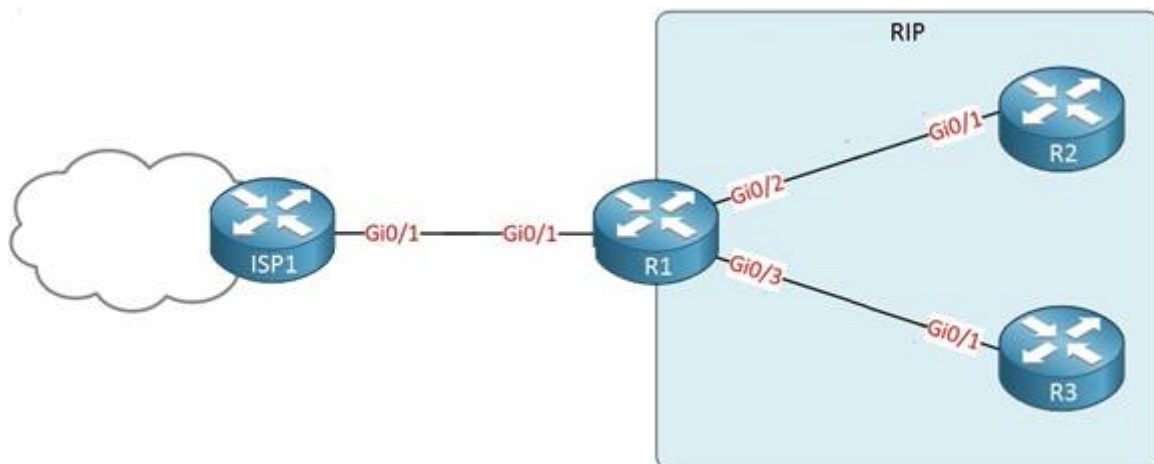
A host is powered up, but the connected switch port does not turn amber or green.

Which of the following methods would you use to troubleshoot the situation? (Choose three. Each answer is a complete solution.)

- ☐ Ensure the switch is powered up.
- ☐ Reinstall Windows on the workstation.
- ☐ Reseat the cable.
- ☐ Ensure that the cable is straight-through.
- ☐ Ensure that the cable is crossover.

**Question 243**

Your network is configured as shown in the following exhibit. When you trace traffic sourced from R3 destined for a LAN network off of R2 (not shown in the diagram), you see the traffic is being forwarded from R1 to ISP1 rather than to R2.



Which of the following issues could NOT be causing this behavior?

- ☐ The network command has not been executed on the interface leading to the LAN off R2
- ☐ The passive interface command has been issued on the Gi0/4 interface of R1
- ☐ A default route exists on R1 that leads to ISP1
- ☐ RIPv2 has not been enabled on R2

**Question 244**

You are the network administrator for your company and have configured Cisco Discovery Protocol (CDP) in your network. You recently noticed that when devices send large numbers of CDP neighbor announcements, some devices are crashing. You decide to disable CDP on the router.

Which command should you use to achieve the objective?

- ☐ no cdp run
- ☐ set cdp disable
- ☐ no cdp enable
- ☐ no cdp advertise-v2

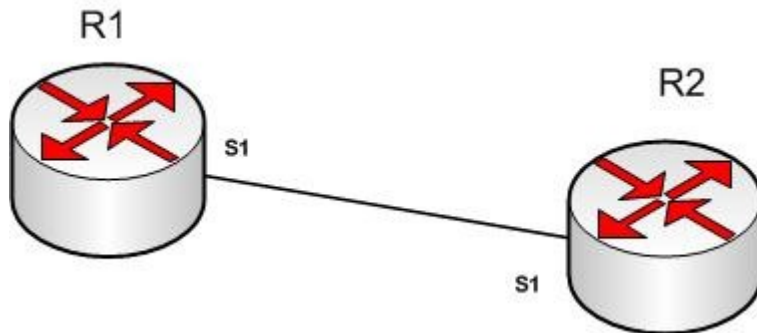
**Question 245**

Which Cisco IOS command is used to provide a description to an interface?

- ☐ description
- ☐ interface-description
- ☐ interface description
- ☐ description interface number

**Question 246**

R1 and R2 are connected as shown in the diagram and are configured as shown in output in the partial output of the show run command.



```
R1#show run
```

```
version 12.0
hostname R1
```

```
interface s1
ip address 192.168.5.5 255.255.255.252
```

```
ip host R1 192.168.5.6
```

```
R2#show run
```

```
version 12.0
hostname R2
interface s1
ip address 192.168.5.6 255.255.255.252
ip host R1 192.168.5.5
```

The command ping R2 fails when executed from R1. What command(s) would allow R1 to ping R2 by name?

- ☐ R1(config)#int S1
- ☐ R1(config-if)#no ip address 192.168.5.5
- ☐ R1(config-if)# ip address 192.168.5.9 255.255.255.252
- ☐ R1(config)#no ip host R1
- ☐ R1(config)# ip host R2 192.168.5.6 255.255.255.252
- ☐ R1(config)#no hostname R2
- ☐ R1(config)# hostname R1
- ☐ R2(config)#int S1
- ☐ R1(config-if)#no ip address 192.168.5.5

- ☐ R1(config-if)# ip address 192.168.5.9 255.255.255.0

### Question 247

Which two are NOT valid Cisco IOS commands used for Cisco Discovery Protocol (CDP)? (Choose two.)

- ☐ show cdp
- ☐ show cdp entry \*
- ☐ show cdp neighbor entries
- ☐ show cdp neighbors detail
- ☐ show cdp devices

### Question 248

You are configuring a serial link between a Cisco router and a router produced by another vendor. What would be the advantages of using Point to Point Protocol (PPP) over High Level Data Link Control (HDLC) in this scenario?

- ☐ HDLC has a proprietary "type" field that may be incompatible with equipment from other vendors.
- ☐ HDLC is not available on non-Cisco routers.
- ☐ PPP is faster.
- ☐ PPP performs error checking.

### Question 249

Which of the following protocols allow the root switch location to be optimized per VLAN? (Choose all that apply.)

- ☐ PVST+
- ☐ RSTP
- ☐ PVRST
- ☐ STP

### Question 250

Which command is used on the Cisco Catalyst 2950 series switch to configure a port as a VLAN trunk port?

- ☐ switchport mode trunk
- ☐ set trunk on
- ☐ switchport trunk on
- ☐ trunk mode on

**Question 251**

What command would you run to determine which switch is the root bridge for a particular VLAN?

- ☐ show spantree vlan
- ☐ show spanning tree
- ☐ show vlan spantree
- ☐ show spanning-tree vlan
- ☐ show spanning-tree interface

**Question 252**

You are working with an Internet Service Provider (ISP) as network manager. A corporate client approaches you to lease a public IP subnet that can accommodate 250 users. You have assigned him the 192.25.27.0 subnet.

What subnet mask should be assigned to this IP address so that it can accommodate the number of users required by the corporate client?

- ☐ 255.255.255.0
- ☐ 255.255.255.128
- ☐ 255.255.255.224
- ☐ 255.255.255.252

**Question 253**

Which Cisco IOS command disables Cisco Discovery Protocol Version 2 (CDPv2) advertisements?

- ☐ no cdp advertise-v2
- ☐ no cdp v2-advertise
- ☐ no cdp run
- ☐ no cdp enable

### Question 254

You have implemented SNMP v3 in your network. After making the configuration changes, you find that technicians in the TECHS group cannot access the MIB. You execute the show run command and receive the following output that relates to SNMP:

<output omitted>

```
snmp-server group NORMAL v3 priv read NORMAL write NORMAL
snmp-server group TECHS v3 priv read TECHS access 99
snmp-server group TRAP v3 priv

!!
snmp-server user NORMAL NORMAL v3 auth sha CISCO priv des56 CISCO
snmp-server user TECHS TECHS v3 auth sha CISCO priv des56 CISCO
snmp-server user TRAP TRAP v3 auth sha CISCO priv des56 CISCO

snmp-server enable traps snmp linkup linkdown
snmp-server host 155.1.146.100 traps version 3 priv TRAP
```

What is preventing the TECHS group from viewing the MIB?

- ☐ The presence of the keyword priv in the command creating the RESTRICTED group
- ☐ A mismatch between the authentication mechanism and the encryption type in the command creating the TECHS user
- ☐ The absence of an access list defining the stations that can used by the TECHS group
- ☐ The presence of the keyword auth in the command creating the TECHS user

### Question 255

Which of the following is a classful routing protocol?

- ☐ RIPv1
- ☐ EIGRP
- ☐ BGPv4
- ☐ RIPv2

**Question 256**

The following is a partial output of the show interfaces command:

```
Serial 0 is up, line protocol is down
Hardware is MCI Ethernet, address is 0000.0c00.750c (bia 0000.0c00.750c)
Internet address is 134.108.28.8, subnet mask is 255.255.255.0
MTU 1500 bytes, BW 10000 Kbit, DLY 100000 usec, rely 255/255, load 1/255
Encapsulation ARPA, loopback not set, keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 4:00:00
Last input 0:00:00, output 0:00:00, output hang never
Last clearing of "show interface" counters 0:00:00
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
Five minute input rate 0 bits/sec, 0 packets/sec
Five minute output rate 2000 bits/sec, 4 packets/sec
1127576 packets input, 447251251 bytes, 0 no buffer
Received 354125 broadcasts, 0 runts, 0 giants, 57186* throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
5332142 packets output, 496316039 bytes, 0 underruns
0 output errors, 432 collisions, 0 interface resets, 0 restarts
<<output omitted>>
```

What does the Serial 0 is up, line protocol is down statement signify in the output? (Choose all that apply.)

- ☐ the shutdown interface command is present in the router configuration
- ☐ a cable is unplugged
- ☐ the interface is displaying normal operation
- ☐ there are no problems with physical connectivity
- ☐ there is a configuration problem in the local or remote router

**Question 257**

Examine the network diagram.



Which switch port(s) will be in a forwarding state? (Choose two.)

- ☐ SwitchA - Fa0/1 and Fa0/2
- ☐ SwitchA - Fa0/1
- ☐ SwitchA - Fa0/2
- ☐ SwitchB - Fa0/1
- ☐ SwitchB - Fa0/2

### Question 258

Which command produced the following output?

```
<output omitted>
Routing Process "ospf 203" with ID 21.0.0.1 and Domain ID 21.20.0.1
Supports only single TOS(TOS0) routes
Supports opaque LSA
SPF schedule delay 10 secs, Hold time between two SPFs 20 secs
Minimum LSA interval 10 secs. Minimum LSA arrival 5 secs
LSA group pacing timer 200secs
Interface flood pacing timer 110 msec
Retransmission pacing timer 110 msec
Number of external LSA 1. Checksum Sum 0x0
Number of opaque AS LSA 1. Checksum Sum 0x0
Number of DCbitless external and opaque AS LSA 0
Number of DoNotAge external and opaque AS LSA 0
Number of areas in this router is 3. 1 normal 0 stub 1 nssa
External flood list length 0

Area BACKBONE(0)
Number of interfaces in this area is 4
Area has message digest authentication
SPF algorithm executed 6 times
Area ranges are
Number of LSA 3. Checksum Sum 0x29BEB
Number of opaque link LSA 1. Checksum Sum 0x0
Number of DCbitless LSA 3
Number of indication LSA 0
Number of DoNotAge LSA 0
Flood list length 0
```

- ☐ show ip ospf database
- ☐ show ip ospf statistics
- ☐ show ip ospf
- ☐ show ip ospf traffic

### Question 259

What is the primary benefit of the Virtual Local Area Network (VLAN) Trunking Protocol (VTP)?

- ☐ broadcast control
- ☐ frame tagging
- ☐ inter-VLAN routing
- ☐ consistent VLAN configuration across switches in a domain

**Question 260**

Which of the following is NOT true of APIC-EM?

- ☐ It supports greenfield but not brownfield deployments
- ☐ It provides a single point for network automation
- ☐ It saves time and cost
- ☐ It is open and programmable

**Question 261**

You are the network administrator for your company. You recently configured Cisco Discovery Protocol (CDP) in the network. You want to view output regarding all of the neighboring devices discovered by CDP. This information should include network address, enabled protocols, and hold time.

Which Cisco Internetwork Operating System (IOS) command would allow you to accomplish this task?

- ☐ show cdp
- ☐ show cdp entry
- ☐ show cdp neighbor entries
- ☐ show cdp neighbors detail

**Question 262**

Refer to the following sample output:

```

*: interface is up
IHQ: pkts in input hold queue IQD: pkts dropped from input queue
OHQ: pkts in output hold queue OQD: pkts dropped from output queue
RXBS: rx rate (bits/sec) RXPS: rx rate (pkts/sec)
TXBS: tx rate (bits/sec) TXPS: tx rate (pkts/sec)
TRTL: throttle count
Interface IHQ IQD OHQ OQD RXBS RXPS TXBS TXPS TRTL

* FastEthernet0/0 0 0 0 0 0 0 0 0 0
Serial0/0 0 0 0 0 0 0 0 0 0
FastEthernet0/1 0 0 0 0 0 0 0 0 0
Serial0/1 0 0 0 0 0 0 0 0 0

```

Which Cisco Internetwork Operating System (IOS) command produces this output?

- ☐ show interfaces
- ☐ show interfaces summary
- ☐ show interfaces serial fast-ethernet
- ☐ show interfaces fast-ethernet 0/0

**Question 263**

Which of the following commands will configure a router to use DNS for hostname resolution?

- ☐ ip dns primary
- ☐ ip domain lookup
- ☐ ip dns server
- ☐ ip name-server

**Question 264**

Which command would be used to establish static translation between an inside local address 192.168.144.25 and an inside global address 202.56.63.102?

- ☐ router(config)#ip nat inside source static 192.168.144.25 202.56.63.102
- ☐ router(config)#ip source nat inside static local-ip 192.168.144.25 global-ip 202.56.63.102
- ☐ router(config)#ip nat static inside source 192.168.144.25 202.56.63.102
- ☐ router(config)#ip nat inside static source 192.168.144.25 202.56.63.102

**Question 265**

Which command would you use to see which interfaces are currently operating as trunks?

- ☐ show interface switchports
- ☐ show trunk interface
- ☐ show interfaces trunk
- ☐ show switchport trunk

### Question 266

Examine the following partial output of the show interfaces command.

```
Router# show interfaces ethernet 0/0
Ethernet0/0 is administratively down, line protocol is down
Hardware is AmdP2, address is 0003.e39b.9220 (bia 0003.e39b.9220)
Internet address is 10.1.0.254/16
MTU 1500 bytes, BW 10000 Kbit, DLY 1000 usec,
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
<<output omitted>>
```

Which of the following statements are true? (Choose all that apply.)

- ☐ the interface is functional
- ☐ the largest frame allowed through this connection is 1500 bytes
- ☐ the interface needs the no shutdown command executed to be functional
- ☐ the largest frame allowed through this connection is 10000 Kbs

### Question 267

Which Cisco Internetwork Operating System (IOS) command is used to assign a router a name for identification?

- ☐ description
- ☐ banner motd
- ☐ hostname
- ☐ banner exec

**Question 268**

What command produced the following output?

```

Routing Protocol is "igrp 120"
Sending updates every 90 seconds, next due in 44 seconds
Invalid after 270 seconds, hold down 280, flushed after 630
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Default networks flagged in outgoing updates
Default networks accepted from incoming updates
IGRP metric weight K1=1, K2=0, K3=1, K4=0, K5=0
IGRP maximum hopcount 100
IGRP maximum metric variance 1
Redistributing: igrp 109
Routing for Networks:
172.160.74.0
Routing Information Sources:
Gateway Distance Last Update
172.160.74.18 100 0:56:41
172.160.74.19 100 6d19
172.160.74.22 100 0:25:41
172.160.74.20 100 0:01:04
172.160.74.30 100 0:02:29
Distance: (default is 100)
Routing Protocol is "bgp 18"
Sending updates every 60 seconds, next due in 0 seconds
Outgoing update filter list for all interfaces is 1
Incoming update filter list for all interfaces is not set
Redistributing: igrp 109
IGP synchronization is disabled
Automatic route summarization is enabled
Neighbor(s):
Address FiltIn FiltOut DistIn DistOut Weight RouteMap
192.109.211.17 1
192.109.213.89 1
198.6.255.13 1
172.161.72.18 1
172.161.72.19
172.161.84.17 1
Routing for Networks:
192.108.209.0
192.108.211.0
198.6.254.0
Routing Information Sources:
Gateway Distance Last Update
172.161.72.19 20 0:05:28
Distance: external 20 internal 200 local 200

```

- ☐ show ip process
- ☐ show ip route
- ☐ show ip protocols
- ☐ show ip routing process

**Question 269**

You have the following configuration on your router:

```
ip dhcp pool POOLNAME
network 10.1.0.0 255.255.255.0
default-router 10.1.0.254
dns-server 10.1.0.200
```

What command would you run to prevent the last available IP address in the scope from being allocated to a host via DHCP?

- ☐ ip dhcp restrict 10.1.0.254
- ☐ ip dhcp excluded-address 10.1.0.253
- ☐ ip dhcp excluded-address 10.1.0.254
- ☐ ip dhcp 10.1.0.253 excluded-address

**Question 270**

Which of the following situations could cause a switch to enter initial configuration mode upon booting?

- ☐ Corrupt or missing image file in flash memory
- ☐ Corrupt or missing configuration file in NVRAM memory
- ☐ Corrupt or missing configuration file in flash memory
- ☐ Corrupt or missing configuration file in ROM memory

**Question 271**

Which Cisco IOS command is used on a Cisco Catalyst 6500 series switch to view the spanning-tree protocol (STP) information for a virtual LAN (VLAN)?

- ☐ show spanning tree
- ☐ show spanning-tree vlan
- ☐ show spantree
- ☐ show spantree vlan

## Question 272

Refer to the partial output of the show interfaces command:

```
Serial 0 is administratively down, line protocol is down
Hardware is MCI Ethernet, address is 0000.0c00.750c (bia 0000.0c00.750c)
Internet address is 134.108.28.8, subnet mask is 255.255.255.0
MTU 1500 bytes, BW 10000 Kbit, DLY 1000000 usec, rely 255/255, load 1/255
Encapsulation ARPA, loopback not set, keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 4:00:00
Last input 0:00:00, output 0:00:00, output hang never
Last clearing of "show interface" counters 0:00:00
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
Five minute input rate 0 bits/sec, 0 packets/sec
Five minute output rate 2000 bits/sec, 4 packets/sec
1127576 packets input, 447251251 bytes, 0 no buffer
Received 354125 broadcasts, 0 runs, 0 giants, 57186* throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
5332142 packets output, 496316039 bytes, 0 underruns
0 output errors, 432 collisions, 0 interface resets, 0 restarts
<<output omitted>>
```

What does the Serial 0 is administratively down, line protocol is down line indicate with certainty?

- ☐ There is no problem with the physical connectivity.
- ☐ There is a configuration problem in the local or remote router.
- ☐ There is a problem at the telephone company's end.
- ☐ The shutdown interface command is present in the router configuration.

## Question 273

With which type of service is bandwidth and latency the biggest consideration?

- ☐ streaming video
- ☐ telnet sessions
- ☐ FTP transfers
- ☐ authentication traffic