➢ Vendor: Cisco

➢ Exam Code: 200-125

➢ Exam Name: Cisco Certified Network Associate (v3.0)

➢ Question 151 – Question 200

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QUESTION 151
Refer to exhibit. A network administrator cannot establish a Telnet session with the indicated router. What is the cause of this failure?

```
Router#show running-config
Building configuration...

Current configuration : 659 bytes
!
version 12.4
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname Router
!

enable secret 5 $1$mERr$hx5rVt7rPNoS4wqbXKX7m0
!

interface FastEthernet0/0
 ip address 192.168.1.1 255.255.255.0
 ip access-group 101 in
 duplex auto
 speed auto
!
access-list 101 deny tcp any any eq 22
access-list 101 permit ip any any
!
line con 0
 password 7 0822455D0A16
 login
line vty 0 4
 login
line vty 5 14
 login
!
end
```

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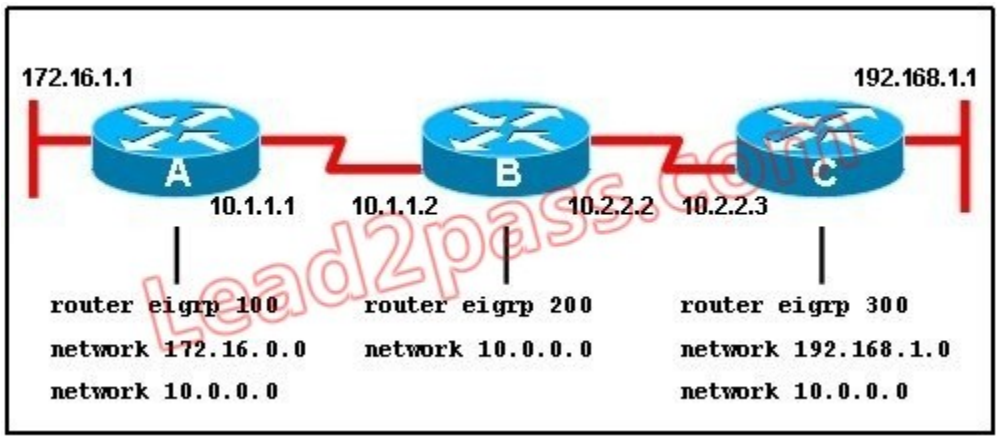
A. A Level 5 password is not set.
B. An ACL is blocking Telnet access.
C. The vty password is missing.
D. The console password is missing.

Answer: C
Explanation:
The login keyword has been set, but not password. This will result in the "password required, but none set" message to users trying to telnet to this router.

QUESTION 152
Refer to the exhibit. When running EIGRP, what is required for RouterA to exchange routing updates with RouterC?



A. AS numbers must be changed to match on all the routers
B. Loopback interfaces must be configured so a DR is elected
C. The no auto-summary command is needed on Router A and Router C
D. Router B needs to have two network statements, one for each connected network

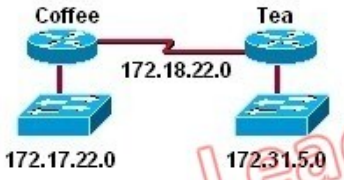
Answer: A
Explanation:
This question is to examine the understanding of the interaction between EIGRP routers. The following information must be matched so as to create neighborhood. EIGRP routers to establish, must match the following information:
1. AS Number;
2. K value.

QUESTION 153
A router has two Fast Ethernet interfaces and needs to connect to four VLANs in the local network. How can you accomplish this task, using the fewest physical interfaces and without decreasing network performance?

A. Use a hub to connect the four VLANS with a Fast Ethernet interface on the router.
B. Add a second router to handle the VLAN traffic.
C. Add two more Fast Ethernet interfaces.
D. Implement a router-on-a-stick configuration.

Answer: D
Explanation:
A router on a stick allows you to use sub-interfaces to create multiple logical networks on a single physical interface.

QUESTION 154
Users on the 172.17.22.0 network cannot reach the server located on the 172.31.5.0 network. The network administrator connected to router Coffee via the console port, issued the show ip route command, and was able to ping the server.




```
Coffee#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 172.19.22.2 to network 0.0.0.0

C    172.17.22.0 is directly connected, FastEthernet0/0
C    172.18.22.0 is directly connected, Serial0/0
S*   0.0.0.0/0 [1/0] via 172.19.22.2
```

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Based on the output of the show ip route command and the topology shown in the graphic, what is the cause of the failure?

A. The network has not fully converged.
B. IP routing is not enabled.
C. A static route is configured incorrectly.
D. The FastEthernet interface on Coffee is disabled.
E. The neighbor relationship table is not correctly updated.
F. The routing table on Coffee has not updated .

Answer: C
Explanation:
The default route or the static route was configured with incorrect next-hop ip address 172.19.22.2 The correct ip address will be 172.18.22.2 to reach server located on 172.31.5.0 network. Ip route 0.0.0.0 0.0.0.0 172.18.22.2

QUESTION 155
A network administrator is trying to add a new router into an established OSPF network. The networks attached to the new router do not appear in the routing tables of the other OSPF routers. Given the information in the partial configuration shown below, what configuration error is causing this problem?

```
Router(config)# router ospf 1
Router(config-router)# network 10.0.0.0 255.0.0.0 area 0
```

A. The process id is configured improperly.
B. The OSPF area is configured improperly.
C. The network wildcard mask is configured improperly.
D. The network number is configured improperly.
E. The AS is configured improperly.
F. The network subnet mask is configured improperly.

Answer: C
Explanation:
When configuring OSPF, the mask used for the network statement is a wildcard mask similar to an access list. In this specific example, the correct syntax would have been "network 10.0.0.0 0.0.0.255 area 0."

QUESTION 156
Which Cisco Catalyst feature automatically disables the port in an operational PortFast upon receipt of a BPDU?

A. BackboneFast
B. UplinkFast
C. Root Guard
D. BPDU Guard
E. BPDU Filter

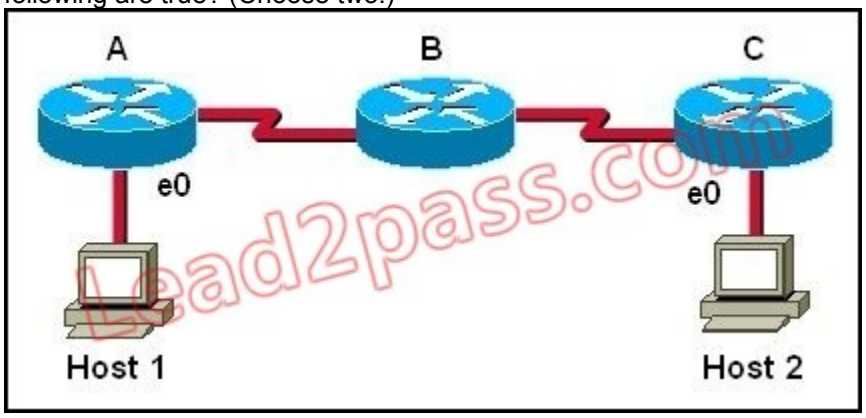
Answer: D
Explanation:
We only enable PortFast feature on access ports (ports connected to end stations). But if someone does not know he can accidentally plug that port to another switch and a loop may occur when BPDUs are being transmitted and received on these ports. With BPDU Guard, when a PortFast receives a BPDU, it will be shut down to prevent a loop.

QUESTION 157
When you are troubleshooting an ACL issue on a router, which command would you use to verify which interfaces are affected by the ACL?

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

Answer: D
Explanation:
Incorrect answer:
show ip access-lists does not show interfaces affected by an ACL.

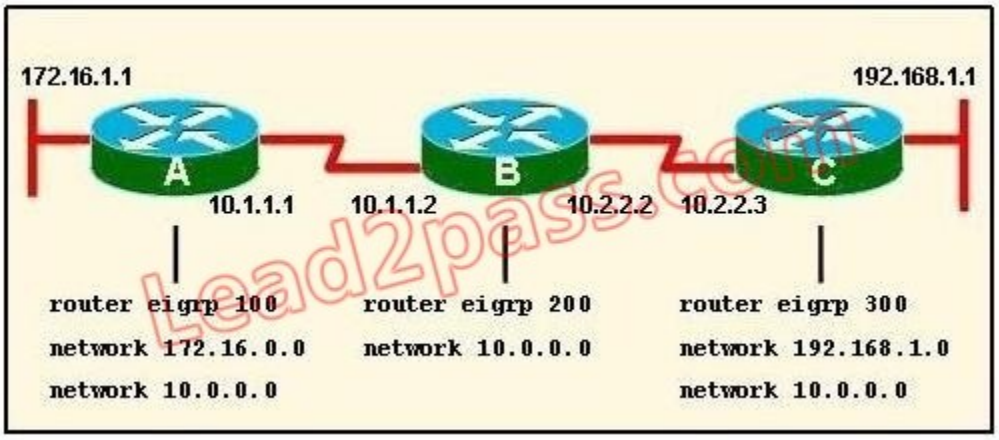
QUESTION 158
Host 1 is trying to communicate with Host 2. The e0 interface on Router C is down. Which of the following are true? (Choose two.)



A. Router C will use ICMP to inform Host 1 that Host 2 cannot be reached.
B. Router C will use ICMP to inform Router B that Host 2 cannot be reached.
C. Router C will use ICMP to inform Host 1, Router A, and Router B that Host 2 cannot be reached.
D. Router C will send a Destination Unreachable message type.
E. Router C will send a Router Selection message type.
F. Router C will send a Source Quench message type.

Answer: AD
Explanation:
Host 1 is trying to communicate with Host 2. The e0 interface on Router C is down. Router C will send ICMP packets to inform Host 1 that Host 2 cannot be reached.

QUESTION 159
Refer to the exhibit. When running EIGRP, what is required for RouterA to exchange routing updates with RouterC?



A. AS numbers must be changed to match on all the routers
B. Loopback interfaces must be configured so a DR is elected
C. The no auto-summary command is needed on Router A and Router C
D. Router B needs to have two network statements, one for each connected network

Answer: A
Explanation:
This question is to examine the understanding of the interaction between EIGRP routers. The following information must be matched so as to create neighborhood. EIGRP routers to establish, must match the following information:
1. AS Number;
2. K value.

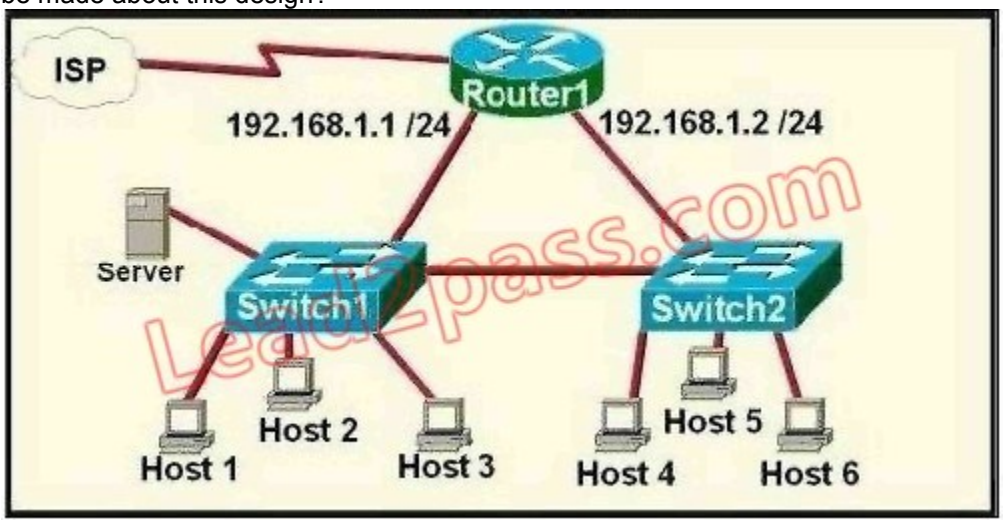
QUESTION 160
Cisco Catalyst switches CAT1 and CAT2 have a connection between them using ports FA0/13. An 802.1Q trunk is configured between the two switches. On CAT1, VLAN 10 is chosen as native, but on CAT2 the native VLAN is not specified. What will happen in this scenario?

A. 802.1Q giants frames could saturate the link.
B. VLAN 10 on CAT1 and VLAN 1 on CAT2 will send untagged frames.
C. A native VLAN mismatch error message will appear.
D. VLAN 10 on CAT1 and VLAN 1 on CAT2 will send tagged frames.

Answer: C
Explanation:
A "native VLAN mismatch" error will appear by CDP if there is a native VLAN mismatch on an 802.1Q link. "VLAN mismatch" can cause traffic from one vlan to leak into another vlan.

QUESTION 161

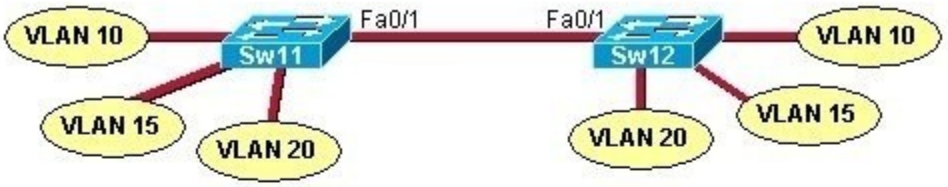
Refer to the exhibit. A network technician is asked to design a small network with redundancy. The exhibit represents this design, with all hosts configured in the same VLAN. What conclusions can be made about this design?



A. This design will function as intended.
B. Spanning-tree will need to be used.
C. The router will not accept the addressing scheme.
D. The connection between switches should be a trunk.
E. The router interfaces must be encapsulated with the 802.1Q protocol.

Answer: C
Explanation:
Each interface on a router must be in a different network. If two interfaces are in the same network, the router will not accept it and show error when the administrator assigns it.

QUESTION 162
Refer to the exhibit. A technician is troubleshooting host connectivity issues on the switches. The hosts in VLANs 10 and 15 on Sw11 are unable to communicate with hosts in the same VLANs on Sw12. Hosts in the Admin VLAN are able to communicate. The port-to-VLAN assignments are identical on the two switches. What could be the problem?



Sw11# **show vlan brief**

VLAN	Name	Status	Ports
1	default	active	
10	Marketing	active	Fa0/6, Fa0/7, Fa0/8, Fa0/9 Fa0/10, Fa0/11, Fa0/12, Fa0/13 Fa0/14, Fa0/15
15	Accounting	active	Fa0/16, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/24
20	Admin	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5
1002	fddi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

Switch#

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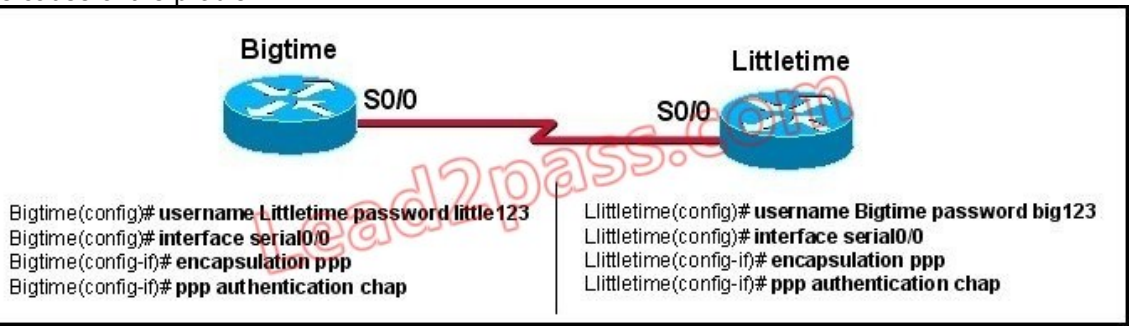
A. The Fa0/1 port is not operational on one of the switches.
B. The link connecting the switches has not been configured as a trunk.
C. At least one port needs to be configured in VLAN 1 for VLANs 10 and 15 to be able to communicate.
D. Port FastEthernet 0/1 needs to be configured as an access link on both switches.
E. A router is required for hosts on SW11 in VLANs 10 and 15 to communicate with hosts in the same VLAN on Sw12.

Answer: B
Explanation:
In order for hosts in the same VLAN to communicate with each other over multiple switches, those switches need to be configured as trunks on their connected interfaces so that they can pass traffic from multiple VLANs.

QUESTION 163
Refer to the exhibit. The Bigtime router is unable to authenticate to the Littletime router. What is the cause of the problem?



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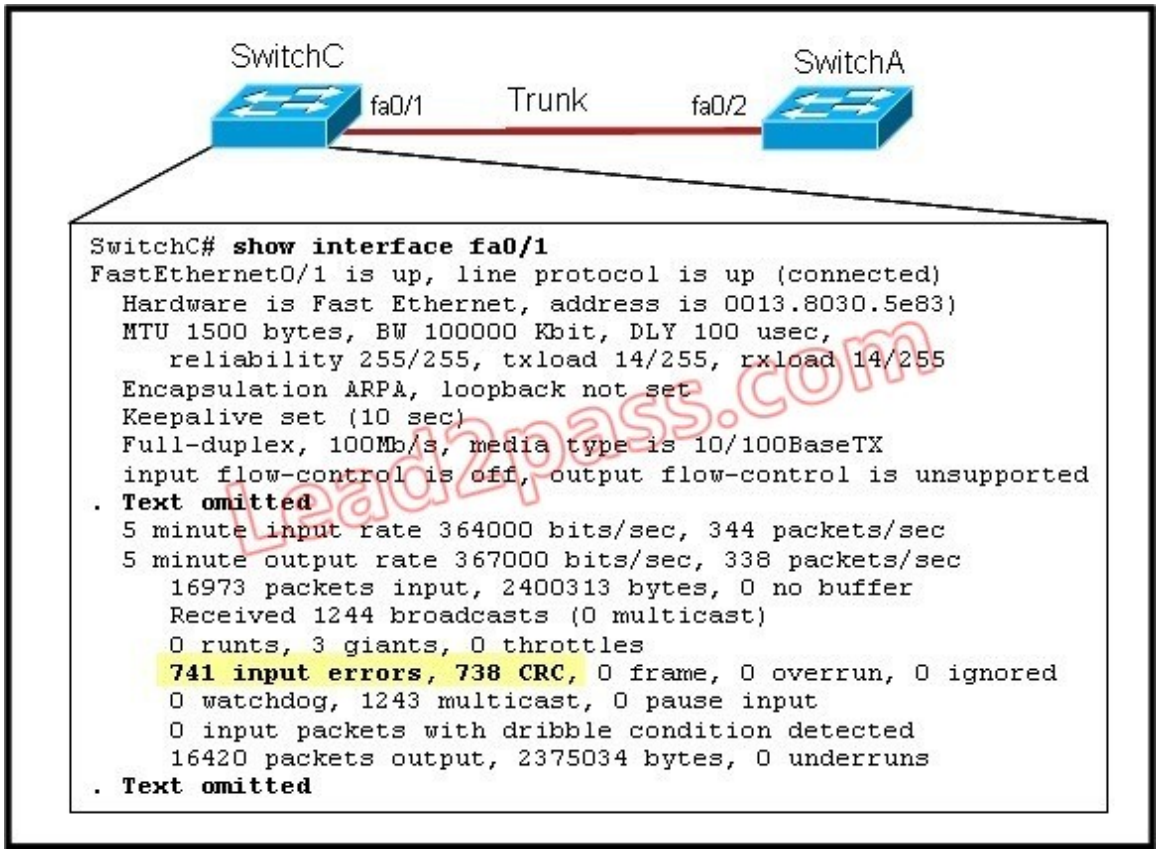
A. The usernames are incorrectly configured on the two routers.
B. The passwords do not match on the two routers.
C. CHAP authentication cannot be used on a serial interface.
D. The routers cannot be connected from interface S0/0 to interface S0/0.
E. With CHAP authentication, one router must authenticate to another router. The routers cannot be configured to authenticate to each other.

Answer: B
Explanation:
With CHAP authentication, the configured passwords must be identical on each router. Here, it is configured as little123 on one side and big123 on the other.

QUESTION 164
Refer to the exhibit. Given this output for SwitchC, what should the network administrator's next action be?



A. Check the trunk encapsulation mode for SwitchC's fa0/1 port.
B. Check the duplex mode for SwitchC's fa0/1 port.
C. Check the duplex mode for SwitchA's fa0/2 port.
D. Check the trunk encapsulation mode for SwitchA's fa0/2 port.

Answer: C
Explanation:
Here we can see that this port is configured for full duplex, so the next step would be to check the duplex setting of the port on the other switch. A mismatched trunk encapsulation would not result in input errors and CRC errors.

QUESTION 165
What will happen if a private IP address is assigned to a public interface connected to an ISP?

A. Addresses in a private range will be not be routed on the Internet backbone.
B. Only the ISP router will have the capability to access the public network.
C. The NAT process will be used to translate this address to a valid IP address.
D. A conflict of IP addresses happens, because other public routers can use the same range.

Answer: A
Explanation:
Private RFC 1918 IP addresses are meant to be used by organizations locally within their own network only, and can not be used globally for Internet use.

QUESTION 166
Refer to the exhibit. An attempt to deny web access to a subnet blocks all traffic from the subnet. Which interface command immediately removes the effect of ACL 102?

```
ACL 102
access-list 102 deny tcp  172.21.1.1 0.0.0.255 any eq 80
access-list 102 deny ip any any

RouterA#sho ip int
FastEthernet0/0 is up, line protocol is up
  Internet address is 192.168.1.144/20
  Broadcast address is 255.255.255.255
  Address determined by DHCP
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is enabled
  Outgoing access list is 102
  Inbound  access list is not set
  Proxy ARP is enabled
```

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A. no ip access-class 102 in
B. no ip access-class 102 out
C. no ip access-group 102 in
D. no ip access-group 102 out
E. no ip access-list 102 in

Answer: D
Explanation:
Now let's find out the range of the networks on serial link:
For the network 192.168.1.62/27:
Increment: 32
Network address: 192.168.1.32
Broadcast address: 192.168.1.63
For the network 192.168.1.65/27:
Increment: 32
Network address: 192.168.1.64
Broadcast address: 192.168.1.95
-> These two IP addresses don't belong to the same network and they can't see each other

QUESTION 167
Which router IOS commands can be used to troubleshoot LAN connectivity problems? (Choose three.)

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

Answer: ADF
Explanation:
Ping, show ip route, and show interfaces are all valid troubleshooting IOS commands. Tracert, ipconfig, and winipcfg are PC commands, not IOS.

QUESTION 168
A network administrator is troubleshooting the OSPF configuration of routers R1 and R2. The routers cannot establish an adjacency relationship on their common Ethernet link.

R1:
```
Ethernet0 is up, line protocol is up
  Internet address 192.168.1.2/24, Area 0
  Process ID 1, Router ID 192.168.31.33, Network Type BROADCAST, Cost: 10
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 192.168.31.33, Interface address 192.168.1.2
  No backup designated router on this network
  Timer intervals configured, Hello 5, Dead 20, Wait 20, Retransmit 5
```

R2:
```
Ethernet0 is up, line protocol is up
  Internet address 192.168.1.1/24, Area 0
  Process ID 2, Router ID 192.168.31.11, Network Type BROADCAST, Cost: 10
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 192.168.31.11, Interface address 192.168.1.1
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
```

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The graphic shows the output of the show ip ospf interface e0 command for routers R1 and R2. Based on the information in the graphic, what is the cause of this problem?

A. The OSPF area is not configured properly.
B. The priority on R1 should be set higher.
C. The cost on R1 should be set higher.
D. The hello and dead timers are not configured properly.
E. A backup designated router needs to be added to the network.
F. The OSPF process ID numbers must match.

Answer: D
Explanation:
In OSPF, the hello and dead intervals must match and here we can see the hello interval is set to 5 on R1 and 10 on R2. The dead interval is also set to 20 on R1 but it is 40 on R2.

QUESTION 169
In which circumstance are multiple copies of the same unicast frame likely to be transmitted in a

switched LAN?

A. during high traffic periods
B. after broken links are re-established
C. when upper-layer protocols require high reliability
D. in an improperly implemented redundant topology
E. when a dual ring topology is in use

Answer: D
Explanation:
If we connect two switches via 2 or more links and do not enable STP on these switches then a loop (which creates multiple copies of the same unicast frame) will occur. It is an example of an improperly implemented redundant topology.

QUESTION 170
VLAN 3 is not yet configured on your switch. What happens if you set the switchport access vlan 3 command in interface configuration mode?

A. The command is rejected.
B. The port turns amber.
C. The command is accepted and the respective VLAN is added to vlan.dat.
D. The command is accepted and you must configure the VLAN manually.

Answer: C
Explanation:
The "switchport access vlan 3" will put that interface as belonging to VLAN 3 while also updated the VLAN database automatically to include VLAN 3.

QUESTION 171
A network administrator is troubleshooting an EIGRP problem on a router and needs to confirm the IP addresses of the devices with which the router has established adjacency. The retransmit interval and the queue counts for the adjacent routers also need to be checked. What command will display the required information?

A. `Router# show ip eigrp adjacency`
B. `Router# show ip eigrp topology`
C. `Router# show ip eigrp interfaces`
D. `Router# show ip eigrp neighbors`

Answer: D
Explanation:
Below is an example of the show ip eigrp neighbors command. The retransmit interval (Smooth Round Trip Timer - SRTT) and the queue counts (Q count, which shows the number of queued EIGRP packets) for the adjacent routers are listed:

Router1# show ip eigrp neighbors

Address	Interface	Holdtime (secs)	Uptime (h:m:s)	Q Count	Seq Num	SRTT (ms)	RTO (ms)
192.168.1.2	Se0	13	01:10:20	106	636	0	30

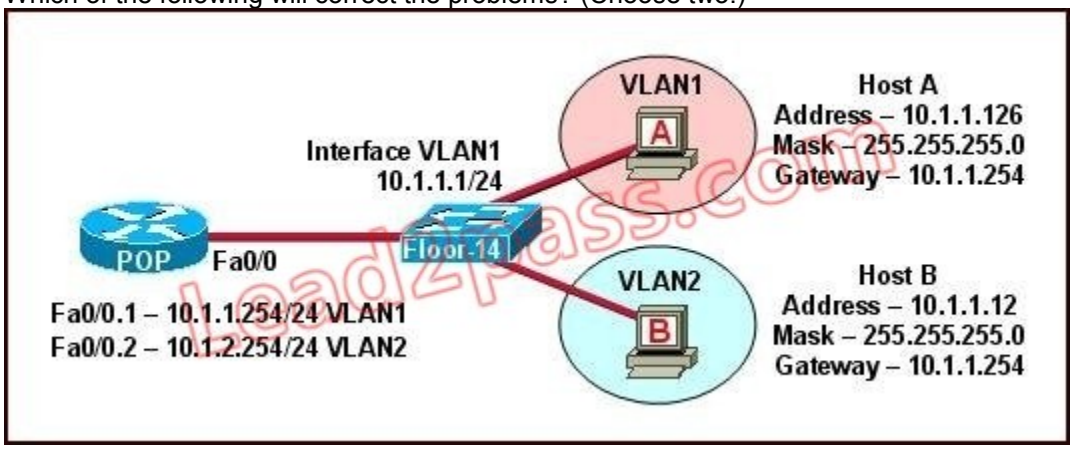
QUESTION 172
Refer to the graphic. R1 is unable to establish an OSPF neighbor relationship with R3. What are

possible reasons for this problem? (Choose two.)

A. All of the routers need to be configured for backbone Area 1.
B. R1 and R2 are the DR and BDR, so OSPF will not establish neighbor adjacency with R3.
C. A static route has been configured from R1 to R3 and prevents the neighbor adjacency from being established.
D. The hello and dead interval timers are not set to the same values on R1 and R3.
E. EIGRP is also configured on these routers with a lower administrative distance.
F. R1 and R3 are configured in different areas.

Answer: DF
Explanation:
This question is to examine the conditions for OSPF to create neighborhood. So as to make the two routers become neighbors, each router must be matched with the following items:
1. The area ID and its types;
2. Hello and failure time interval timer;
3. OSPF Password (Optional);

QUESTION 173
Refer to the exhibit. The network shown in the diagram is experiencing connectivity problems. Which of the following will correct the problems? (Choose two.)

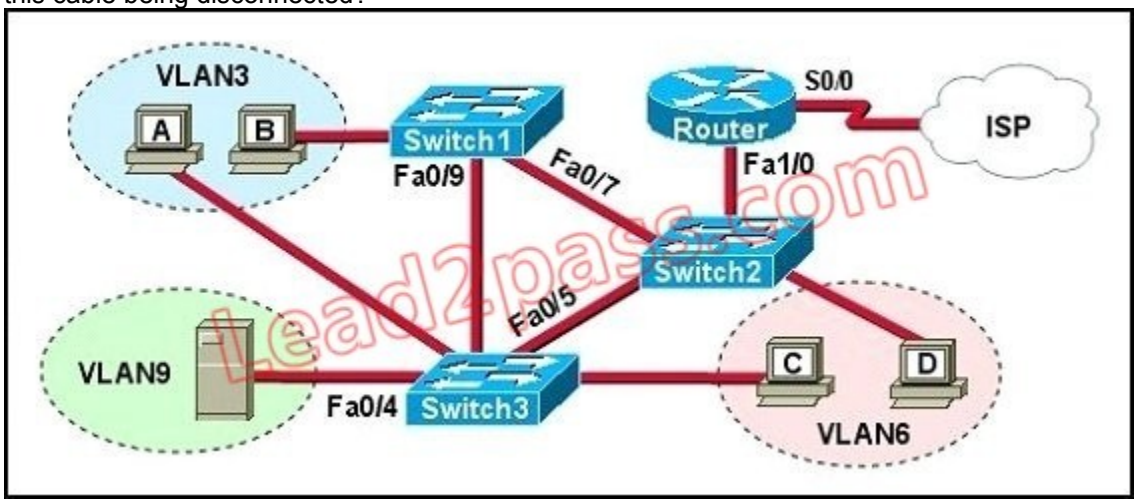


A. Configure the gateway on Host A as 10.1.1.1.
B. Configure the gateway on Host B as 10.1.2.254.
C. Configure the IP address of Host A as 10.1.2.2.
D. Configure the IP address of Host B as 10.1.2.2.
E. Configure the masks on both hosts to be 255.255.255.224.

F. Configure the masks on both hosts to be 255.255.255.240.

Answer: BD
Explanation:
The switch 1 is configured with two VLANs: VLAN1 and VLAN2. The IP information of member Host A in VLAN1 is as follows:
Address : 10.1.1.126
Mask : 255.255.255.0
Gateway : 10.1.1.254
The IP information of member Host B in VLAN2 is as follows:
Address : 10.1.1.12
Mask : 255.255.255.0
Gateway : 10.1.1.254
The configuration of sub-interface on router 2 is as follows:
Fa0/0.1 -- 10.1.1.254/24 VLAN1
Fa0/0.2 -- 10.1.2.254/24 VLAN2
It is obvious that the configurations of the gateways of members in VLAN2 and the associated network segments are wrong. The layer3 addressing information of Host B should be modified as follows:
Address : 10.1.2.X
Mask : 255.255.255.0

QUESTION 174
Refer to the exhibit. A problem with network connectivity has been observed. It is suspected that the cable connected to switch port Fa0/9 on Switch1 is disconnected. What would be an effect of this cable being disconnected?

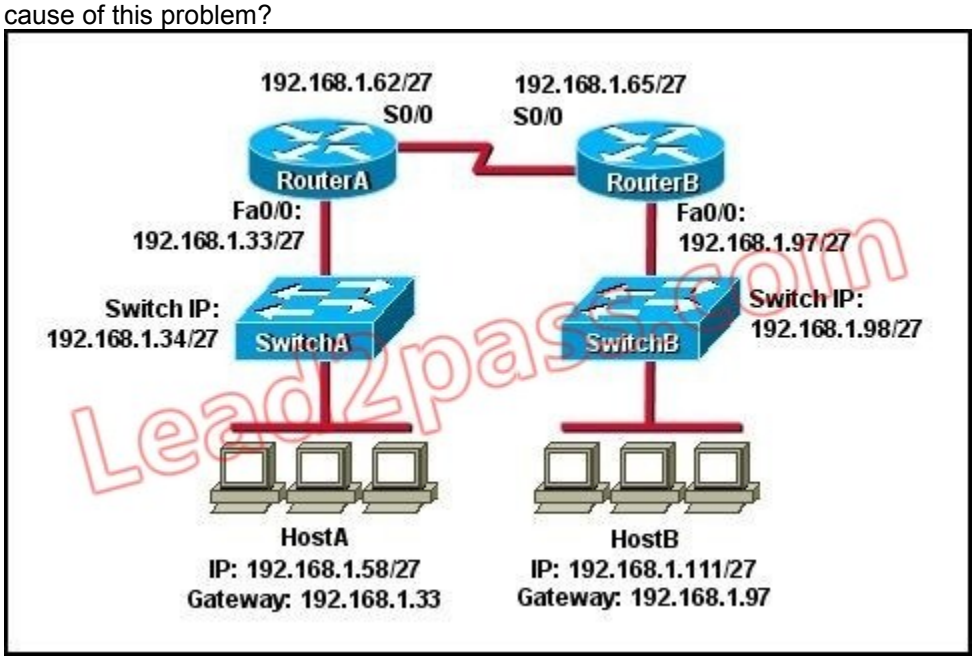


A. Host B would not be able to access the server in VLAN9 until the cable is reconnected.
B. Communication between VLAN3 and the other VLANs would be disabled.
C. The transfer of files from Host B to the server in VLAN9 would be significantly slower.
D. For less than a minute, Host B would not be able to access the server in VLAN9. Then normal network function would resume.

Answer: D
Explanation:
Spanning-Tree Protocol (STP) is a Layer 2 protocol that utilizes a special-purpose algorithm to discover physical loops in a network and effect a logical loop-free topology. STP creates a loop-free tree structure consisting of leaves and branches that span the entire Layer 2 network. The

actual mechanics of how bridges communicate and how the STP algorithm works will be discussed at length in the following topics. Note that the terms bridge and switch are used interchangeably when discussing STP. In addition, unless otherwise indicated, connections between switches are assumed to be trunks.

QUESTION 175
Refer to the exhibit. HostA cannot ping HostB. Assuming routing is properly configured, what is the cause of this problem?



A. HostA is not on the same subnet as its default gateway.
B. The address of SwitchA is a subnet address.
C. The Fa0/0 interface on RouterA is on a subnet that can't be used.
D. The serial interfaces of the routers are not on the same subnet.
E. The Fa0/0 interface on RouterB is using a broadcast address.

Answer: D
Explanation:
Now let's find out the range of the networks on serial link:
For the network 192.168.1.62/27:
Increment: 32
Network address: 192.168.1.32
Broadcast address: 192.168.1.63
For the network 192.168.1.65/27:
Increment: 32
Network address: 192.168.1.64
Broadcast address: 192.168.1.95
-> These two IP addresses don't belong to the same network and they can't see each other

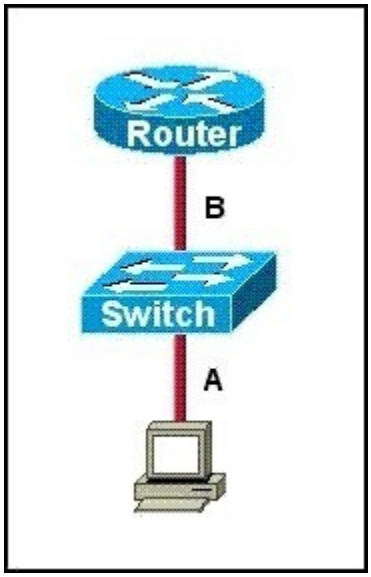
QUESTION 176
Which port state is introduced by Rapid-PVST?

A. learning
B. listening

C. discarding
D. forwarding

Answer: C
Explanation:
PVST+ is based on IEEE802.1D Spanning Tree Protocol (STP). But PVST+ has only 3 port states (discarding, learning and forwarding) while STP has 5 port states (blocking, listening, learning, forwarding and disabled). So discarding is a new port state in PVST+.

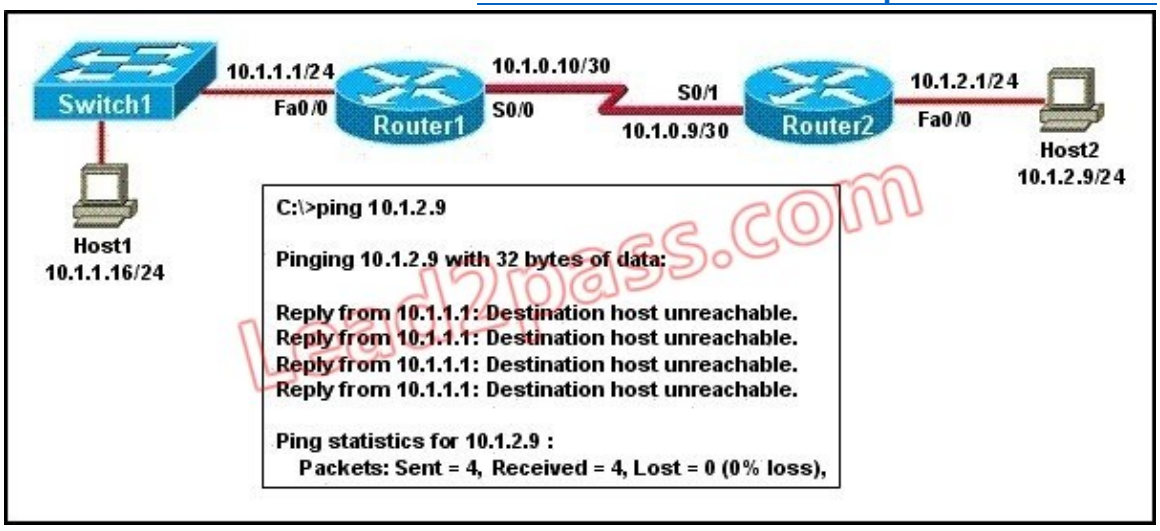
QUESTION 177
Refer to the exhibit. The two connected ports on the switch are not turning orange or green. What would be the most effective steps to troubleshoot this physical layer problem? (Choose three.)



A. Ensure that the Ethernet encapsulations match on the interconnected router and switch ports.
B. Ensure that cables A and B are straight-through cables.
C. Ensure cable A is plugged into a trunk port.
D. Ensure the switch has power.
E. Reboot all of the devices.
F. Reseat all cables.

Answer: BDF
Explanation:
The ports on the switch are not up indicating it is a layer 1 (physical) problem so we should check cable type, power and how they are plugged in.

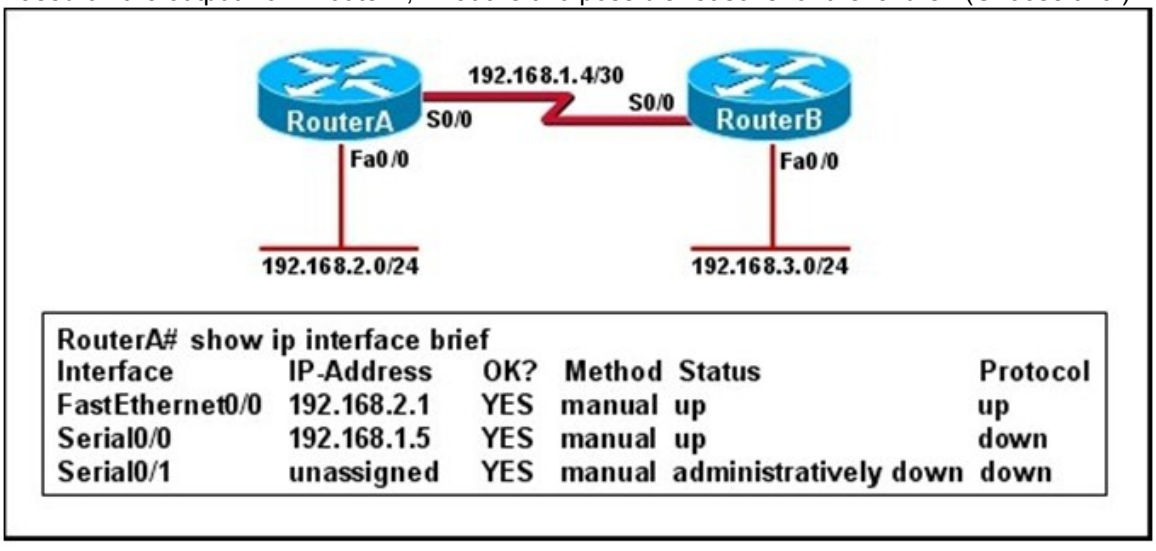
QUESTION 178
Refer to the exhibit. A network administrator attempts to ping Host2 from Host1 and receives the results that are shown.
What is the problem?



A. The link between Host1 and Switch1 is down.
B. TCP/IP is not functioning on Host1
C. The link between Router1 and Router2 is down.
D. The default gateway on Host1 is incorrect.
E. Interface Fa0/0 on Router1 is shutdown.
F. The link between Switch1 and Router1 is down.

Answer: C
Explanation:
Host1 tries to communicate with Host2. The message destination host unreachable from Router1 indicates that the problem occurs when the data is forwarded from Host1 to Host2. According to the topology, we can infer that The link between Router1 and Router2 is down.

QUESTION 179
Refer to the exhibit. Hosts in network 192.168.2.0 are unable to reach hosts in network 192.168.3.0. Based on the output from RouterA, what are two possible reasons for the failure? (Choose two.)



A. The cable that is connected to S0/0 on RouterA is faulty.

B. Interface S0/0 on RouterB is administratively down.
C. Interface S0/0 on RouterA is configured with an incorrect subnet mask.
D. The IP address that is configured on S0/0 of RouterB is not in the correct subnet.
E. Interface S0/0 on RouterA is not receiving a clock signal from the CSU/DSU.
F. The encapsulation that is configured on S0/0 of RouterB does not match the encapsulation that is configured on S0/0 of RouterA

Answer: EF
Explanation:
From the output we can see that there is a problem with the Serial 0/0 interface. It is enabled, but the line protocol is down. The could be a result of mismatched encapsulation or the interface not receiving a clock signal from the CSU/DSU.

QUESTION 180
Refer to the exhibit. An administrator pings the default gateway at 10.10.10.1 and sees the output as shown. At which OSI layer is the problem?

```
C:\> ping 10.10.10.1

Pinging 10.10.10.1 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 10.10.10.1:
Packets: Sent = 4, Received = 0, Lost = 4 (100% loss)
```

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A. data link layer
B. application layer
C. access layer
D. session layer
E. network layer

Answer: E
Explanation:
The command ping uses ICMP protocol, which is a network layer protocol used to propagate control message between host and router. The command ping is often used to verify the network connectivity, so it works at the network layer.

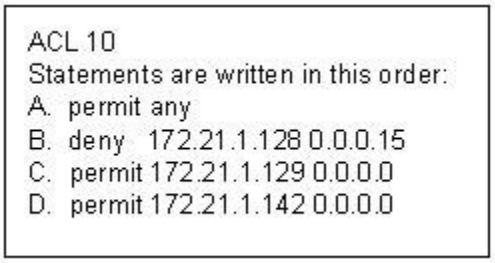
QUESTION 181
Which statement is correct regarding the operation of DHCP?

A. A DHCP client uses a ping to detect address conflicts.
B. A DHCP server uses a gratuitous ARP to detect DHCP clients.
C. A DHCP client uses a gratuitous ARP to detect a DHCP server.
D. If an address conflict is detected, the address is removed from the pool and an administrator must resolve the conflict.
E. If an address conflict is detected, the address is removed from the pool for an amount of time configurable by the administrator.
F. If an address conflict is detected, the address is removed from the pool and will not be reused until the server is rebooted.

Answer: D
Explanation:

An address conflict occurs when two hosts use the same IP address. During address assignment, DHCP checks for conflicts using ping and gratuitous ARP. If a conflict is detected, the address is removed from the pool. The address will not be assigned until the administrator resolves the conflict.
http://www.cisco.com/en/US/docs/ios/12_1/iproute/configuration/guide/1cddhcp.html

QUESTION 182
Refer to the exhibit. Statements A, B, C, and D of ACL 10 have been entered in the shown order and applied to interface E0 inbound, to prevent all hosts (except those whose addresses are the first and last IP of subnet 172.21.1.128/28) from accessing the network. But as is, the ACL does not restrict anyone from the network. How can the ACL statements be re-arranged so that the system works as intended?



A. ACDB
B. BADC
C. DBAC
D. CDBA

Answer: D
Explanation:
Routers go line by line through an access list until a match is found and then will not look any further, even if a more specific of better match is found later on in the access list. So, it it best to begin with the most specific entries first, in this cast the two hosts in line C and D. Then, include the subnet (B) and then finally the rest of the traffic (A).

QUESTION 183
The output of the show frame-relay pvc command shows "PVC STATUS = INACTIVE". What does this mean?

A. The PVC is configured correctly and is operating normally, but no data packets have been detected for more than five minutes.
B. The PVC is configured correctly, is operating normally, and is no longer actively seeking the address of the remote router.
C. The PVC is configured correctly, is operating normally, and is waiting for interesting traffic to trigger a call to the remote router.
D. The PVC is configured correctly on the local switch, but there is a problem on the remote end of the PVC.
E. The PVC is not configured on the local switch.

Answer: D
Explanation:
The PVC STATUS displays the status of the PVC. The DCE device creates and sends the report to the DTE devices. There are 4 statuses:
+ ACTIVE: the PVC is operational and can transmit data + INACTIVE: the connection from the local router to the switch is working, but the connection to the remote router is not available
+ DELETED: the PVC is not present and no LMI information is being received from the Frame Relay switch

+ STATIC: the Local Management Interface (LMI) mechanism on the interface is disabled (by using the "no keepalive" command). This status is rarely seen so it is ignored in some books.

QUESTION 184
Which command is used to enable CHAP authentication, with PAP as the fallback method, on a serial interface?

A. `Router(config-if)# ppp authentication chap fallback ppp`
B. `Router(config-if)# ppp authentication chap pap`
C. `Router(config-if)# authentication ppp chap fallback ppp`
D. `Router(config-if)# authentication ppp chap pap`

Answer: B
Explanation:
This command tells the router to first use CHAP and then go to PAP if CHAP isn't available.

QUESTION 185
Which protocol is an open standard protocol framework that is commonly used in VPNs, to provide secure end-to-end communications?

A. RSA
B. L2TP
C. IPsec
D. PPTP

Answer: C
Explanation:
IPSec is a framework of open standards that provides data confidentiality, data integrity, and data authentication between participating peers at the IP layer. IPSec can be used to protect one or more data flows between IPSec peers.

QUESTION 186
At which layer of the OSI model does PPP perform?

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

Answer: A
Explanation:
The Point-to-Point Protocol (PPP) provides a standard method for transporting multi-protocol datagrams over point-to-point links. PPP was originally emerged as an encapsulation protocol for transporting IP traffic between two peers. It is a data link layer protocol (layer 2 in the OSI model)

QUESTION 187
The command frame-relay map ip 10.121.16.8 102 broadcast was entered on the router. Which of the following statements is true concerning this command?

A. This command should be executed from the global configuration mode.
B. The IP address 10.121.16.8 is the local router port used to forward data.
C. 102 is the remote DLCI that will receive the information.

D. This command is required for all Frame Relay configurations.
E. The broadcast option allows packets, such as RIP updates, to be forwarded across the PVC.

Answer: E
Explanation:
Broadcast is added to the configurations of the frame relay, so the PVC supports broadcast, allowing the routing protocol updates that use the broadcast update mechanism to be forwarded across itself.

QUESTION 188
Which two options are valid WAN connectivity methods? (Choose two.)

A. PPP
B. WAP
C. DSL
D. L2TPv3
E. Ethernet

Answer: AC
Explanation:
The Point-to-Point Protocol (PPP) provides a standard method for transporting multi-protocol datagrams over point-to-point links. PPP was originally emerged as an encapsulation protocol for transporting IP traffic between two peers. It is a data link layer protocol used for WAN connections. DSL is also considered a WAN connection, as it can be used to connect networks, typically when used with VPN technology.

QUESTION 189
Which Layer 2 protocol encapsulation type supports synchronous and asynchronous circuits and has built-in security mechanisms?

A. HDLC
B. PPP
C. X.25
D. Frame Relay

Answer: B
Explanation:
PPP: Provides router-to-router and host-to-network connections over synchronous and asynchronous circuits. PPP was designed to work with several network layer protocols, including IP. PPP also has built-in security mechanisms, such as Password Authentication Protocol (PAP) and Challenge Handshake Authentication Protocol (CHAP).

QUESTION 190
Which encapsulation type is a Frame Relay encapsulation type that is supported by Cisco routers?

A. IETF
B. ANSI Annex D
C. Q9333-A Annex A
D. HDLC

Answer: A
Explanation:

Cisco supports two Frame Relay encapsulation types: the Cisco encapsulation and the IETF Frame Relay encapsulation, which is in conformance with RFC 1490 and RFC 2427. The former is often used to connect two Cisco routers while the latter is used to connect a Cisco router to a non-Cisco router. You can test with your Cisco router when typing the command Router(config-if)# encapsulation frame-relay ? on a WAN link. Below is the output of this command (notice Cisco is the default encapsulation so it is not listed here, just press Enter to use it).

```
R1(config-if)#encapsulation frame-relay ?
  ietf  Use RFC1490/RFC2427 encapsulation
  <cr>
```

Note: Three LMI options are supported by Cisco routers are ansi, Cisco, and Q933a. They represent the ANSI Annex D, Cisco, and ITU Q933-A (Annex A) LMI types, respectively. HDLC is a WAN protocol same as Frame-Relay and PPP so it is not a Frame Relay encapsulation type.

QUESTION 191

RouterA is unable to reach RouterB. Both routers are running IOS version 12.0. After reviewing the command output and graphic, what is the most likely cause of the problem?

```
RouterA# show running-config

<some output text omitted>

interface serial0/0
 bandwidth 64
 ip address 172.16.100.2 255.255.255.0
 encapsulation frame-relay
 frame-relay map ip 172.16.100.1 200 broadcast
```

A. incorrect bandwidth configuration
B. incorrect LMI configuration
C. incorrect map statement
D. incorrect IP address

Answer: C

Explanation:

First we have to say this is an unclear question and it is wrong. The “frame-relay map ip” statement is correct thus none of the four answers above is correct. But we guess there is a typo in the output. Maybe the “ip address 172.16.100.2 255.255.0.0 command should be “ip address 172.16.100.1 255.255.0.0.

QUESTION 192

Refer to the exhibit. What is the meaning of the term dynamic as displayed in the output of the show frame-relay map command shown?

```
R1# show frame-relay map
Serial0/0 (up): ip 172.16.3.1 dlci 100 (0x64, 0x1840), dynamic
            broadcast,, status defined, active
```

A. The Serial0/0 interface is passing traffic.
B. The DLCI 100 was dynamically allocated by the router.
C. The Serial0/0 interface acquired the IP address of 172.16.3.1 from a DHCP server.
D. The DLCI 100 will be dynamically changed as required to adapt to changes in the Frame Relay cloud.
E. The mapping between DLCI 100 and the end station IP address 172.16.3.1 was learned through

Inverse ARP.

Answer: E
Explanation:
Inverse Address Resolution Protocol (Inverse ARP) was developed to provide a mechanism for dynamic DLCI to Layer 3 address maps. Inverse ARP works much the same way Address Resolution Protocol (ARP) works on a LAN. However, with ARP, the device knows the Layer 3 IP address and needs to know the remote data link MAC address. With Inverse ARP, the router knows the Layer 2 address which is the DLCI, but needs to know the remote Layer 3 IP address. When using dynamic address mapping, Inverse ARP requests a next-hop protocol address for each active PVC. Once the requesting router receives an Inverse ARP response, it updates its DLCI-to-Layer 3 address mapping table. Dynamic address mapping is enabled by default for all protocols enabled on a physical interface. If the Frame Relay environment supports LMI autosensing and Inverse ARP, dynamic address mapping takes place automatically. Therefore, no static address mapping is required.

QUESTION 193
A network administrator needs to configure a serial link between the main office and a remote location. The router at the remote office is a non-Cisco router. How should the network administrator configure the serial interface of the main office router to make the connection?

A.
```
Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# no shut
```
B.
```
Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# encapsulation ppp
Main(config-if)# no shut
```
C.
```
Main(config)# interface serial 0/0
Main(config-if)# ip address 172.16.1.1 255.255.255.252
Main(config-if)# encapsulation frame-relay
Main(config-if)# authentication chap
Main(config-if)# no shut
```
D.
```
Main(config)# interface serial 0/0
Main(config-if)#ip address 172.16.1.1 255.255.255.252
Main(config-if)#encapsulation ietf
Main(config-if)# no shut
```

Answer: B
Explanation:
With serial point to point links there are two options for the encapsulation. The default, HDLC, is Cisco proprietary and works only with other Cisco routers. The other option is PPP which is standards based and supported by all vendors.

QUESTION 194
What are three reasons that an organization with multiple branch offices and roaming users might implement a Cisco VPN solution instead of point-to-point WAN links? (Choose three.)

A. reduced cost
B. better throughput
C. broadband incompatibility
D. increased security
E. scalability

F. reduced latency

Answer: ADE
Explanation:
IPsec offer a number of advantages over point to point WAN links, particularly when multiple locations are involved. These include reduced cost, increased security since all traffic is encrypted, and increased scalability as s single WAN link can be used to connect to all locations in a VPN, where as a point to point link would need to be provisioned to each location.

QUESTION 195
Which two statistics appear in show frame-relay map output? (Choose two.)

A. the number of BECN packets that are received by the router
B. the value of the local DLCI
C. the number of FECN packets that are received by the router
D. the status of the PVC that is configured on the router
E. the IP address of the local router

Answer: BD
Explanation:
Sample "show frame-relay map" output:
R1#sh frame mapSerial0/0 (up): ip 10.4.4.1 dlci 401(0x191,0x6410), dynamic,broadcast,, status defined, activeSerial0/0 (up): ip 10.4.4.3 dlci 403(0x193,0x6430), dynamic,broadcast,, status defined, activeSerial0/0 (up): ip 10.4.4.4 dlci 401(0x191,0x6410), static,CISCO, status defined, active

QUESTION 196
Users have been complaining that their Frame Relay connection to the corporate site is very slow. The network administrator suspects that the link is overloaded.

PVC Statistics for interface Serial0 (Frame Relay DTE)

	Active	Inactive	Deleted	Static
Local	1	0	0	0
Switched	0	0	0	0
Unused	0	0	0	0

DLCI = 100, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial0

input pkts 1300 output pkts 1270 in bytes 22121000
out bytes 21802000 dropped pkts 4 in FECN pkts 147
in BECN pkts 192 out FECN pkts 259 out BECN pkts 214
in DE pkts 0 out DE pkts 0
out bcast pkts 107 out bcast bytes 19722
pvc create time 00:25:50, last time pvc status changed 00:25:40

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Based on the partial output of the Router# show frame relay pvc command shown in the graphic, which output value indicates to the local router that traffic sent to the corporate site is experiencing congestion?

A. DLCI = 100
B. last time PVC status changed 00:25:40
C. in BECN packets 192

D. in FECN packets 147
E. in DE packets 0

Answer: C
Explanation:
If device A is sending data to device B across a Frame Relay infrastructure and one of the intermediate Frame Relay switches encounters congestion, congestion being full buffers, over-subscribed port, overloaded resources, etc, it will set the BECN bit on packets being returned to the sending device and the FECN bit on the packets being sent to the receiving device.

QUESTION 197
Which command allows you to verify the encapsulation type (CISCO or IETF) for a Frame Relay link?

A. show frame-relay lmi
B. show frame-relay map
C. show frame-relay pvc
D. show interfaces serial

Answer: B
Explanation:
When connecting Cisco devices with non-Cisco devices, you must use IETF4 encapsulation on both devices. Check the encapsulation type on the Cisco device with the show frame-relay map exec command.

QUESTION 198
It has become necessary to configure an existing serial interface to accept a second Frame Relay virtual circuit. Which of the following procedures are required to accomplish this task? (Choose three.)

A. Remove the IP address from the physical interface.
B. Encapsulate the physical interface with multipoint PPP.
C. Create the virtual interfaces with the interface command.
D. Configure each subinterface with its own IP address.
E. Disable split horizon to prevent routing loops between the subinterface networks.
F. Configure static Frame Relay map entries for each subinterface network.

Answer: ACD
Explanation:
For multiple PVC's on a single interface, you must use subinterfaces, with each subinterface configured for each PVC. Each subinterface will then have its own IP address, and no IP address will be assigned to the main interface.

QUESTION 199
What occurs on a Frame Relay network when the CIR is exceeded?

A. All TCP traffic is marked discard eligible.
B. All UDP traffic is marked discard eligible and a BECN is sent.
C. All TCP traffic is marked discard eligible and a BECN is sent.
D. All traffic exceeding the CIR is marked discard eligible.

Answer: D

Explanation:
Committed information rate (CIR): The minimum guaranteed data transfer rate agreed to by the Frame Relay switch. Frames that are sent in excess of the CIR are marked as discard eligible (DE) which means they can be dropped if the congestion occurs within the Frame Relay network. Note: In the Frame Relay frame format, there is a bit called Discard eligible (DE) bit that is used to identify frames that are first to be dropped when the CIR is exceeded.

QUESTION 200
Which two statements about using the CHAP authentication mechanism in a PPP link are true? (Choose two.)

A. CHAP uses a two-way handshake.
B. CHAP uses a three-way handshake.
C. CHAP authentication periodically occurs after link establishment.
D. CHAP authentication passwords are sent in plaintext.
E. CHAP authentication is performed only upon link establishment.
F. CHAP has no protection from playback attacks.

Answer: BC
Explanation:
CHAP is an authentication scheme used by Point to Point Protocol (PPP) servers to validate the identity of remote clients. CHAP periodically verifies the identity of the client by using a three-way handshake. This happens at the time of establishing the initial link (LCP), and may happen again at any time afterwards. The verification is based on a shared secret (such as the client user's password).

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