

100% Money Back
Guarantee

Vendor:Cisco

Exam Code:642-902

Exam Name:Implementing cisco ip routing

Version:Demo

QUESTION 1

Which three statements are true regarding EIGRP? (Choose three.)

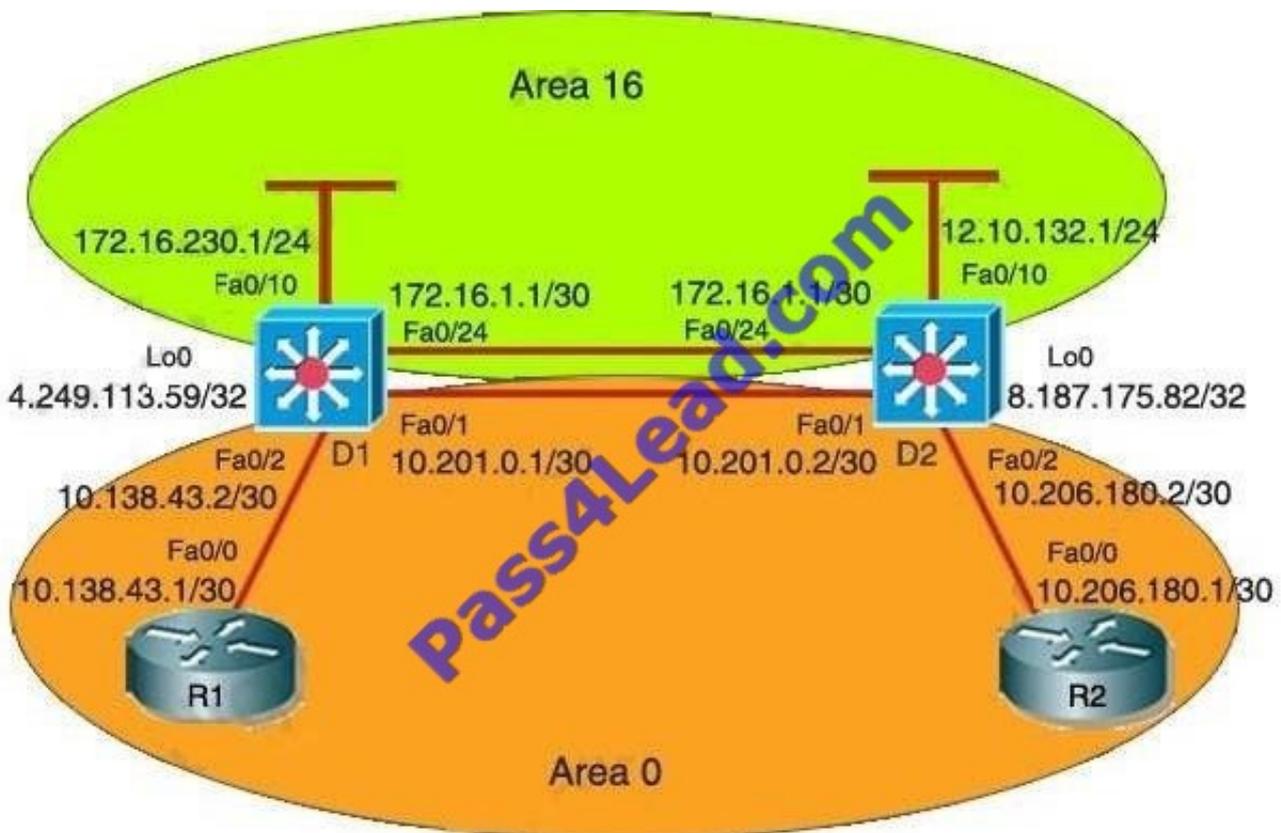
- A. By default, EIGRP performs auto-summarization across classful network boundaries.
- B. EIGRP uses an area hierarchy to increase network scalability.
- C. To speed convergence, EIGRP attempts to maintain a successor and feasible successor path for each destination.
- D. EIGRP uses hellos to establish neighbor relationships.
- E. By default, EIGRP uses the Dijkstra algorithm to determine the best path to a destination network based on bandwidth and delay.

Correct Answer: ACD

Reference:

<http://ptgmedia.pearsoncmg.com/images/1587131706/samplechapter/1587131706content.pdf> (See page 66 which is the 2nd page of this pdf)

QUESTION 2



The company and the company network have both been growing rapidly. Multiple adds, moves and changes have been

applied to the network. Your boss has asked you to troubleshoot a recent OSPF synchronization problem that has arisen. There have been synchronization problems at separate locations in the OSPF area 0. There have been reported link failures during the rapid growth of the company network. You are required to resolve the OSPF problem. OSPF must be able to converge when the network changes. Refer to the information above to answer the following question. Examine the following excerpt from the "show ip ospf" command on D1:

```
Area BACKBONE (0) Number of interfaces in the this area is 1 Area has no authentication SPF algorithm last executed 00:00:31.280 ago SPF algorithm executed 5 times Area ranges are Number of LSA 13. Checksum Sum 0x16F0FD Number of opaque link LSA 0. Checksum Sum Number of DCbitless LSA 0 Number of indication LSA 0 Number of DoNotAge LSA 0 Flood list length 0 Area 16 Number of interfaces in this area is 2 Area has message digest authentication SPF algorithm last executed 00:00:34.928 ago SPF algorithm executed 7 times Area ranges are Number of LSA 5. Checksum Sum 0x02FCD3 Number of opaque link LSA 0. Checksum Sum Number of DCbitless LSA 0 Number of indication LSA 0 Number of DoNotAge LSA 0 Flood list length 0
```

Based on the information shown above, what is most likely causing the different missing routes throughout the network?

- A. Area 16 is configured with authentication.
- B. Area 16 has been configured to use the same interfaces as Area 0.
- C. Area 0 and Area 32 have been configured with mismatched LSA numbers.
- D. Area 16 has been configured as a total stub network
- E. Area 16 has been configured as a stub network
- F. Area 0 is discontinuous.
- G. None of the above

Correct Answer: F

From the topology, we see D1 has 2 interfaces belong to Area 0, that are interfaces Fa0/1 and Fa0/2 but the output says there is only one interface in Area 0 (Number of interfaces in the this area is 1). Therefore we can deduce that a link in area 0 was down and area 0 is discontinuous.

QUESTION 3

Refer to the exhibit.

```
Core1#show ip eigrp topology all-links
IP EIGRP Topology table for AS(65001) / ID (172.17.10.1)

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 172.17.3.128/25, 2 successors, FD is 30720, serno 9
   via 172.17.10.2 (30720/28160), FastEthernet0/1
   via 172.17.3.2 (30720/28160), FastEthernet0/3
P 10.140.0.0/24, 1 successors, FD is 156160, serno 16
   via 172.17.3.2 (156160/128256), FastEthernet0/3
   via 172.17.10.2 (157720/156160), FastEthernet0/1
P 172.17.10.0/24, 1 successors, FD is 28160, serno 1
   via Connected, FastEthernet0/1
P 172.17.0.0/30, 1 successors, FD is 20514560, serno 15
   via 172.17.1.1 (20514560/205122000), FastEthernet0/2
   via 172.17.10.2 (20516120/20513560), FastEthernet0/1
P 172.17.1.0/24, 1 successors, FD is 28160, serno 2
   via Connected, FastEthernet0/2
P 172.17.2.0/24, 1 successors, FD is 30720, serno 8
   via 172.17.10.2 (30720/28160), FastEthernet0/1
   via 172.17.3.2 (33280/30720), FastEthernet0/3
P 172.17.3.0/25, 1 successors, FD is 28160, serno 3
   via Connected, FastEthernet0/3

Core1#
```

BigBids Incorporated is a worldwide auction provider. The network uses EIGRP as its routing protocol throughout the corporation. The network administrator does not understand the convergence of EIGRP. Using the output of the show ip eigrp topology all-links command, answer the administrator's question.

Which three EIGRP routes will be installed for the 172.17.3.128/25 and 172.17.2.0/24 networks? (Choose three)

- A. 172.17.3.128/25 [90/28160] via 172.17.1.2, 01:26:35, FastEthernet0/2
- B. 172.17.3.128/25 [90/30720] via 172.17.3.2, 01:26:35, FastEthernet0/3
- C. 172.17.3.128/25 [90/30720] via 172.17.10.2, 01:26:35, FastEthernet0/1
- D. 172.17.2.0/24 [90/30720] via 172.17.10.2, 02:10:11, FastEthernet0/1
- E. 172.17.2.0/24 [90/28160] via 172.17.10.2, 02:10:11, FastEthernet0/1
- F. 172.17.2.0/24 [90/33280] via 172.17.3.2, 02:10:11, FastEthernet0/3

Correct Answer: BCD

First indicate the positions of these networks:

Network 172.17.3.128/25 has 2 successors, therefore the two paths below are both successors. Network 172.17.2.0/24 has only 1 successor, therefore the path lies right under it is the successor.

QUESTION 4

Refer to the exhibit.

```
Router# show ip route
```

```
...
```

```
C 10.1.3.0/24 is directly connected, Serial2  
D 10.1.2.0/24 [90/10537472] via 10.1.1.2, 00:23:24, Serial1  
D 10.0.0.0/8 is a summary, 00:23:20, Null0  
C 10.1.1.0/24 is directly connected, Serial1  
S 192.168.20.0/24 is directly connected, Ethernet0
```

What happens when the router stops receiving advertisements for the 10.1.2.0/24 network?

- A. The summary route will be removed from the table.
- B. The summary route will remain in the table.
- C. The more specific routes will be advertised from the table.
- D. 10.1.2.0/24 will still be advertised but packets destined for it will be dropped when they reach this router.

Correct Answer: B

If you look very closely at the routing table output, we can conclude that R1 has "auto-summary" enabled under the EIGRP routing process.

D 10.0.0.0/8 is a summary, 00:23:20, Null 0 Anytime the "auto-summary" is enabled under the routing process the router will install a summary route to "null 0" as long as the router has one or more subnets within the "classful" network. In the case above, you have two directly connected interfaces (Serial1 and Serial2) that are within the "classful" network. Therefore, regardless of whether you learn a route via EIGRP that is in the "classful" network, R1 will still install this summary route to "null 0".

QUESTION 5

When learning a new route, if a LSA received is not found in the topological database, what will an internal OSPF router do?

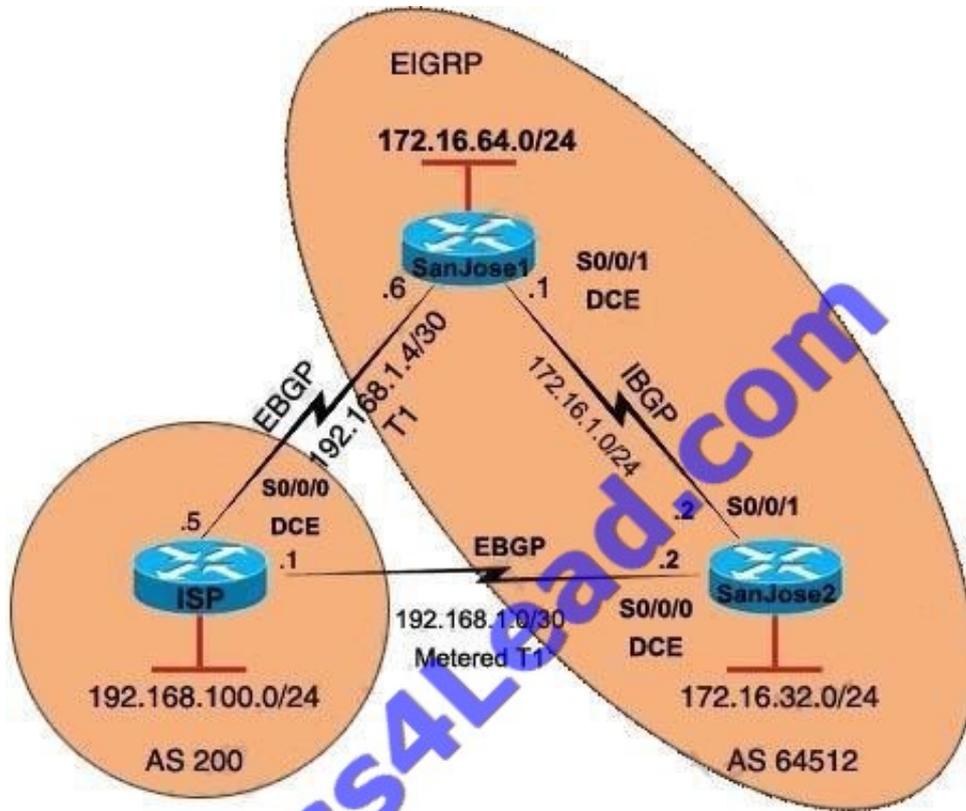
- A. The sequence numbers are checked, and if the LSA is valid it is entered into the topology database.
- B. The LSA is placed in the topological database and an acknowledgement is sent to the transmitting router.
- C. The LSA is dropped and a message is sent to the transmitting router.
- D. The LSA is flooded immediately out of all the OSPF interfaces, except the interface from which the LSA was received.

Correct Answer: D

Internal routers flood the area with new LSAs, and ABRs create and flood each area they are in with LSAs. The sequencing happens at the 2-way/ exstart stage, when exchanging the DBD.

QUESTION 6

Refer to the exhibit.



```

BGP table version is 12, local router ID is 192.168.100.1
Status codes: s suppressed, d damped, h history, * valid, > best, i -
internal   Origin codes: i - IGP, e - EGP, ? - incomplete
  Network        Next Hop        Metric    LocPrf  Weight    Path
* 172.16.0.0     192.168.1.2     75         0       0       64512 i
*>              192.168.1.6     50         0       0       64512 i
*> 192.168.1.0/30 0.0.0.0         0          32768   0       i
*> 192.168.1.4/30 0.0.0.0         0          32768   0       i
*> 192.168.100.0 0.0.0.0         0          32768   0       i
    
```

On the basis of the information in the exhibit, which two statements are true? (Choose two.)

- A. The output was generated by entering the show ip bgp command on the ISP router.
- B. The output was generated by entering the show ip bgp command on the SanJose1 router.
- C. The serial 0/0/1 interface on the ISP router has been configured with the set metric 50 command.
- D. The serial 0/0/1 interface on the ISP router has been configured with the set metric 75 command.
- E. When traffic is sent from the ISP to autonomous system 64512, the traffic will be forwarded to SanJose1 because of the lower MED value of SanJose1.

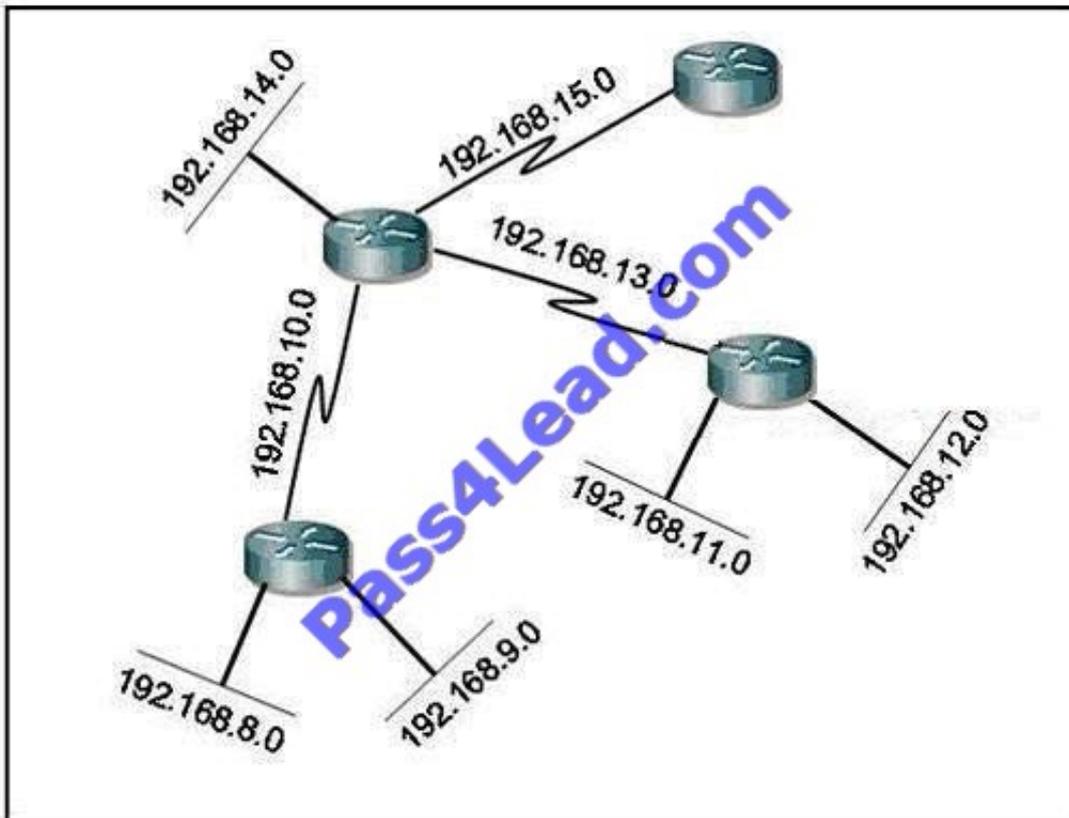
F. When traffic is sent from the ISP to autonomous system 64512, the traffic will be forwarded to SanJose2 because of the higher MED value of SanJose2.

Correct Answer: AD

The "show ip route bgp" command will display any BGP-learned routes that make it into the IP routing table, the command "show ip bgp" is required to display the contents of the actual BGP routing table. This output was seen on ISP because the local router ID is 192.168.100.1 (ISP). Since we know that this output must have been seen by ISP, we know the serial 0/0/1 interface has been configured with a metric of 75, as this is the metric to the peer with IP address 192.168.1.2 (the other side of the serial 0/0/1 interface).

QUESTION 7

Given the network diagram.



Which address would successfully summarize only the networks seen?

- A. 192.168.0.0/24
- B. 192.168.8.0/20
- C. 192.168.8.0/21
- D. 192.168.12.0/20
- E. 192.168.16.0/21
- F. These networks cannot be summarized.

Correct Answer: C

Let's suppose it is a /20 then we would have addresses from 192.168.0.1 to 192.168.15.255 Now let's suppose it is a /21 then we would have addresses from 192.168.8.1 to 192.168.15.255 So both summaries encompass the networks we want to summarize but the second one is the most restrictive one as it only encompasses the networks we were asked to summarize and not others so it is the correct summary. In fact just count the number of subnets which is 8 and find the exponent of 2 which is 8, that gives you 3 and to find out the summary mask just do $/24 - 3 = /21$. if you make it in binary you'll find out the answer too: the interesting octet is 3rd one so let's convert in binary. 8 0000 1000 9 0000 1001 10 0000 1010 11 0000 1011 12 0000 1100 13 0000 1101 14 0000 1110 15 0000 1111 I've bolded the bits in common there are 5 so $16+5=21$ which is mask and address is 192.168.8.0

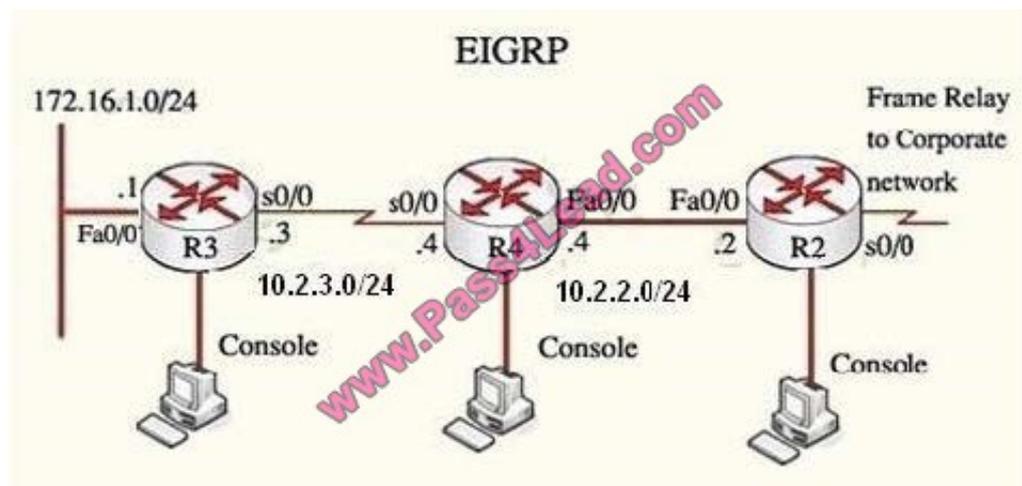
QUESTION 8

(EIGRP Stub Sim)

By increasing the first distant office, JS manufactures has extended their business. They configured the remote office router (R3) from which they can reach all Corporate subnets. In order to raise network stability and lower the memory

usage and CPU utilization to R3, JS manufactures makes use of route summarization together with the EIGRP Stub Routing feature. Another network engineer is responsible for the implementing of this solution.

However, in the process of configuring EIGRP stub routing connectivity with the remote network devices off of R3 has been missing.



Presently JS has configured EIGRP on all routers in the network R2, R3, and R4. Your duty is to find and solve the connectivity failure problem with the remote office router R3.

You should then configure route summarization only to the distant office router R3 to complete the task after the problem has been solved. The success of pings from R4 to the R3 LAN interface proves that the fault has been corrected and the

R3 IP routing table only contains two 10.0.0.0 subnets.

Correct Answer: For Answer please see explanation.

First we have to figure out why R3 and R4 can not communicate with each other.

Use the show runningconfig command on router R3

```
R3# show running-config
<output omitted>
!
router eigrp 123
  network 10.0.0.0
  network 172.16.0.0
  no auto-summary
  eigrp stub receive-only
!
<output omitted>
```

Notice that R3 is configured as a stub receive-only router. The receive-only keyword will restrict the router from sharing any of its routes with any other router in that EIGRP autonomous system. This keyword will also prevent any type of route

from being sent. Therefore we will remove this command and replace it with the eigrp stub command:

```
R3#configure terminal
```

```
R3(config)#router eigrp 123
```

```
R3(config-router)#no eigrp stub receive-only
```

```
R3(config-router)#eigrp stub
```

```
R3(config-router)#end
```

Now R3 will send updates containing its connected and summary routes to other routers. Notice that the eigrp stub command equals to the eigrp stub connected summary because the connected and summary options are enabled by default.

Next we will configure router R3 so that it has only 2 subnets of 10.0.0.0 network. Use the show ip route command on R3 to view its routing table R3#show ip route

```
Router3# show ip route
```

```
10.0.0.0/8 is variably subnetted, 9 subnets, 2 masks
```

```
D 10.0.0.0/8 is a summary, 02:04:27, Null0
```

```
D 10.2.2.0/24 [90/30720] via 10.2.3.4, 00:00:06, Serial0/0
```

```
C 10.2.3.0/24 is directly connected, Serial0/0
```

```
D 10.2.4.0/24 [90/161280] via 10.2.3.4, 00:00:03, Serial0/0
```

```
D 10.2.5.0/24 [90/161280] via 10.2.3.4, 00:00:03, Serial0/0
```

```
D 10.2.6.0/24 [90/161280] via 10.2.3.4, 00:00:03, Serial0/0
```

```
D 10.2.7.0/24 [90/161280] via 10.2.3.4, 00:00:02, Serial0/0
```

```
D 10.2.8.0/24 [90/161280] via 10.2.3.4, 00:00:02, Serial0/0
```

```
D 10.2.9.0/24 [90/161280] via 10.2.3.4, 00:00:02, Serial0/0
```

```
172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks
```

```
D 172.16.0.0/16 is a summary, 02:04:27, Null0
```

```
C 172.16.1.0/24 is directly connected, FastEthernet0/0
```

Because we want the routing table of R3 only have 2 subnets so we have to summary sub- networks at the interface which is connected with R3, the s0/0 interface of R4. There is one interesting thing about the output of the show ip route

shown above. the 10.2.3.0 /24, which is a directly connected network of R3. We can't get rid of it in the routing table no matter what technique we use to summary the networks. Therefore, to make the routing table of R3 has only 2 subnets we

have to summarize the other subnets into one subnet. In conclusion, we will use the ip summary-address eigrp 123 10.0.0.0 255.0.0.0 at the interface s0/0 of R4 to summary.

```
R4>enable
```

```
R4#configure terminal
```

```
R4(config)#interface s0/0
```

```
R4(config-if)#ip summary-address eigrp 123 10.0.0.0 255.0.0.0
```

Router3#show ip route

10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks

D 10.0.0.0/8 is a summary, 00:06:22, Null0

C 10.2.3.0/24 is directly connected, Serial0/0

172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks

D 172.16.0.0/16 is a summary, 00:06:22, Null0

C 172.16.1.0/24 is directly connected, FastEthernet0/0

Now we jump back to R3 and use the show ip route command to verify the effect, the output is shown below: (But please notice that the ip addresses and the subnet masks in your real exam might be different so you might use different ones to solve this question) Just for your information, notice that if you use another network than 10.0.0.0/8 to summary, for example, if you use the command ip summary-address eigrp 123 10.2.0.0 255.255.0.0 you will leave a /16 network in the output of the show ip route command.

Router3# show ip route

10.0.0.0/8 is variably subnetted, 3 subnets, 3 masks

D 10.0.0.0/8 is a summary, 00:18:43, Null0

D 10.2.0.0/16 [90/30720] via 10.2.3.4, 00:00:06, Serial0/0

C 10.2.3.0/24 is directly connected, Serial0/0

172.16.0.0/16 is variably subnetted, 2 subnets, 2 masks

D 172.16.0.0/16 is a summary, 00:18:43, Null0

C 172.16.1.0/24 is directly connected, FastEthernet0/0

But in your real exam, if you don't see the line "10.0.0.0/8 is a summary,....Null0" then you can summary using the network 10.2.0.0/16. This summarization is better because all the pings can work well. Finally don't forget to use the copy running-config startup-config command on routers R3 and R4 to save the configurations. R4(config-if)#end R4#copy running-config startup-config

QUESTION 9

Which three statements about configuring OSPF in a IPv6 network are true? (Choose three.)

- A. OSPF version 2 will support IPv6.
- B. OSPF version 3 will support IPv6.
- C. Multiple instances of OSPF for IPv6 can be run on a link.
- D. Networks must be explicitly configured using the network command in router OSPF configuration mode.
- E. IPv4 addresses cannot be used as the router ID in OSPF for IPv6.

F. The interface command `ipv6 ospf area` is all that is required to enable OSPF for IPv6 on an interface.

Correct Answer: BCF

Reference: <http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-ospf.html>

QUESTION 10

Above is the output from `show ip bgp neighbors` command.

```
BGP neighbor is 172.16.254.3, remote AS 150, internal link
 1. BGP version 4, remote router ID 172.16.254.3
 2. BGP state = Established, up for 19:24:07
 3. Last read 00:00:06, hold time is 180, keepalive interval is 60 seconds
 4. Neighbor capabilities:
 5. Route refresh:advertised and received(new)
 6. Address family IPv4 Unicast:advertised and received
 7. Graceful Restart Capability:advertised and received
 8. Remote Restart timer is 120 seconds
 9. Address families preserved by peer
10. IPv4 Unicast
11. Received 4231 messages, 0 notifications, 0 in queue
12. Sent 4167 messages, 0 notifications, 0 in queue
13. Default minimum time between advertisement runs is 5 seconds
14. For address family:IPv4 Unicast
15. BGP table version 159559, neighbor version 159559
16. Index 90, Offset 11, Mask 0x4
17. Route refresh request:received 0, sent 0
18. 10031 accepted prefixes consume 441364 bytes
19. Prefix advertised 29403, suppressed 0, withdrawn 9801
20. Number of NLRI in the update sent:max 242, min 0
21. Connections established 2; dropped 1
22. Last reset 19:26:54, due to NSF peer closed the session
23. Connection state is ESTAB, I/O status:1, unread inout bytes:0
24. Local host:150.254.254.2, Local port:11005
25. Foreign host:172.16.254.3, Foreign port:179
```

What is line 21 stating about the BGP connection?

- A. the number of neighbors that the router has
- B. the number of times the router has established a TCP connection
- C. the number of consecutive TCP connections to the specified remote neighbor
- D. the number of total TCP connections that the router has

Correct Answer: B

According to http://www.cisco.com/en/US/docs/ios/12_3/iproute/command/reference/ip2_s2g.html#wp104_0913, "Connections established" is the number of times a TCP and BGP connection have been successfully established while "dropped" is the number of times that a valid session has failed or been taken down.

QUESTION 11

A router is configured for redistribution to advertise EIGRP routes into OSPF on a boundary router. Given the configuration: `router ospf 1 redistribute eigrp 1 metric 25 subnets`

What is the function of the 25 parameter in the redistribute command?

- A. It specifies the seed cost to be applied to the redistributed routes.
- B. It specifies the administrative distance on the redistributed routes.
- C. It specifies the metric limit of 25 subnets in each OSPF route advertisement.
- D. It specifies a new process-id to inject the EIGRP routes into OSPF.

Correct Answer: A

Reference:

<http://www.hh.se/download/18.1a63903b12e0cb97563800024/1297326173185/Manipulating+Routing+Updates.pdf>
(slide 25, configuring redistribution)

QUESTION 12

Which of the following is a GRE Tunnel characteristic?

- A. GRE impose more CPU overhead than IPSec on VPN gateways
- B. GRE tunnels can run through IPsec tunnels.
- C. GRE Tunnel doesn't have support for IPv6
- D. GRE consists of two sub-protocols: Encapsulated Security Payload (ESP) and Authentication Header (AH).

Correct Answer: B

If you run an IPsec tunnel through a GRE tunnel then we call it as "IPsec over GRE"

To Read the [Whole Q&As](#), please purchase the [Complete Version](#) from [Our website](#).

Try our product !

100% Guaranteed Success

100% Money Back Guarantee

365 Days Free Update

Instant Download After Purchase

24x7 Customer Support

Average **99.9%** Success Rate

More than **800,000** Satisfied Customers Worldwide

Multi-Platform capabilities - **Windows, Mac, Android, iPhone, iPod, iPad, Kindle**

Need Help

Please provide as much detail as possible so we can best assist you.

To update a previously submitted ticket:



 <p>One Year Free Update Free update is available within One Year after your purchase. After One Year, you will get 50% discounts for updating. And we are proud to boast a 24/7 efficient Customer Support system via Email.</p>	 <p>Money Back Guarantee To ensure that you are spending on quality products, we provide 100% money back guarantee for 30 days from the date of purchase.</p>	 <p>Security & Privacy We respect customer privacy. We use McAfee's security service to provide you with utmost security for your personal information & peace of mind.</p>
---	---	--

Any charges made through this site will appear as Global Simulators Limited.

All trademarks are the property of their respective owners.