Vendor: Cisco

Exam Code: 642-902

Exam Name: Implementing Cisco IP Routing (ROUTE)

Version: DEMO

QUESTION 1
Which two reductions are the correct reductions of the IPv6 address 2001:0d02:0000:0000:0014:0000:0000:0095? (Choose two.)

A. 2001:d02::14::95
B. 2001:0d02:::0014:::0095
C. 2001:0d02:::0014:0:0:0095
D. 2001:d02::14:0:0:95
E. 2001:d02:0:0:14::95
F. FF::0014:0:0:0095

Answer: DE
We can't use triple colons (:::) in IPv6 presentation. Also We can't use double colons (::) twice. You can use it only once in any address because if two double colons are placed in the same address, there will be no way to identify the size of each block of 0s. Remember the following techniques to shorten an IPv6 address:
- Omit leading 0s in the address field, so :0000 can be compressed to just :0 and :0d02 can be com-pressed to :d02 (but :1d00 can not be compressed to :1d)
- Use double colons (::), but just once, to represent a contiguous block of 0s, so 2001:0d02:0000:0000:0014:0000:0000:0095 can be compressed to 2001:0d02::14:0:0:95 or 2001:0d02:0:0:14::95

QUESTION 2
A network administrator is troubleshooting a redistribution of OSPF routes into EIGRP. Given the exhibited commands, which statement is true?

```
router rip
  network 10.0.0.0
!
router ospf 5
  network 172.10.0.0  0.0.255.255 area 0
  redistribute rip
```

A. Redistributed routes will have an external type of 1 and a metric of 1.
B. Redistributed routes will have an external type of 2 and a metric of 20.
C. Redistributed routes will maintain their original OSPF routing metric.
D. Redistributed routes will have a default metric of 0 and will be treated as reachable and advertised.
E. Redistributed routes will have a default metric of 0 but will be treated as unreachable and not advertised.

Answer: B
Explanation:
By default, all routes redistributed into OSPF will be tagged as external type 2 (E2) with a metric of 20, except for BGP routes (with a metric of 1).
Note: The cost of a type 2 route is always the external cost, irrespective of the interior cost to reach that route. A type 1 cost is the addition of the external cost and the internal cost used to reach that route.

QUESTION 3
Which is the most effective technique to contain EIGRP queries?

A. route summarization
B. configuring route filters
C. using a hierarchical addressing scheme
D. establishing separate autonomous systems

Answer: A
Explanation:
The most basic SIA routes occur when it simply takes too long for a query to reach the other end of the network and for a reply to travel back. One of the most effective techniques for containing EIGRP queries is to use route summarization or stub networks.
Stub networks are configured in a hub and spoke network and is configured only on the stub router. The command is
router eigrp 100
eigrp stub
The result of this configuration is that the stub routers will send updates about routes they have to the hub router but the hub router will never query the stub router for updates in the event of a route being lost.

QUESTION 4
Identify three characteristics of EIGRP feasible successors? (Choose three.)

A. A feasible successor is selected by comparing the advertised distance of a non-successor route to the feasible distance of the best route.
B. If the advertised distance of the non-successor route is less than the feasible distance of best route, then that route is identified as a feasible successor.
C. If the successor becomes unavailable, then the feasible successor can be used immediately without recalculating for a lost route.
D. The feasible successor can be found in the routing table.
E. Traffic will be load balanced between feasible successors with the same advertised distance.

Answer: ABC
Explanation:
http://packetlife.net/blog/2010/aug/9/eigrp-feasible-successor-routes/

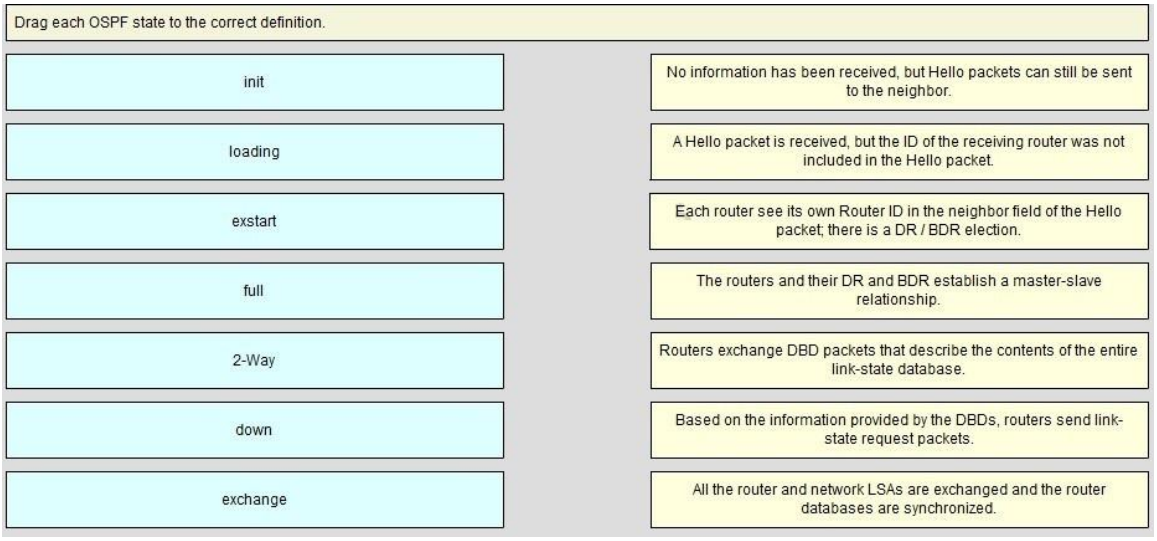
QUESTION 5
Which of the following are methods EIGRP uses to initially populate (seed) its EIGRP topology table, before learning topology data from neighbors? (Choose two.)

A. By adding all subnets listed by the show ip route connected command
B. By adding the subnets of working interfaces over which static neighbors have been defined
C. By adding subnets redistributed on the local router from another routing source
D. By adding all subnets listed by the show ip route static command

Answer: BC
Explanation:
Other than the two listed correct answers, the local router also adds connected routes for which the network command matches the corresponding interfaces, so it may not add all connected routes. Also, EIGRP does not add static routes to the EIGRP topology table, unless those routes are redistributed.

QUESTION 6

Drag and Drop Question



Answer:

QUESTION 7
An engineer has added the following configuration snippet to an implementation planning document. The configuration will be added to Router R1, whose Fa0/0 interface connects to a LAN to which Routers R2 and R3 also connect. R2 and R3 are already EIGRP neighbors with each other. Assuming the snippet shows all commands on R1 related to EIGRP authentication, which answer lists an appropriate comment to be made during the implementation plan peer review?

```
key chain fred
key 3
key-string whehew
interface fa0/0
ip authentication key-chain eigrp 9 fred
```

A. The configuration is missing one authentication-related configuration command.
B. The configuration is missing two authentication-related configuration commands.
C. Authentication type 9 is not supported; type 5 should be used insteaD.
D. The key numbers must begin with key 1, so change the key 3 command to key 1.

Answer: A
Explanation:
The configuration requires the ip authentication mode eigrp asn md5 command, which is currently missing. This command enables MD5-style authentication, rather than the default of no authentication. Adding this one command completes the configuration. Any valid key numbers can be used. Also, the 9 in the ip authentication key-chain eigrp 9 fred command refers to the EIGRP ASN, not an authentication type.

QUESTION 8
What administrative distance is given to EIGRP summary routes?

A. 0
B. 1
C. 5
D. 90
E. 95
F. 170

Answer: C
Explanation:
http://www.cisco.com/en/US/docs/ios/iproute_eigrp/command/reference/ire_i1.html

QUESTION 9
A network administrator is troubleshooting an EIGRP connection between RouterA, IP address 10.1.2.1, and RouterB, IP address 10.1.2.2.
Given the debug output on RouterA, which two statements are true?

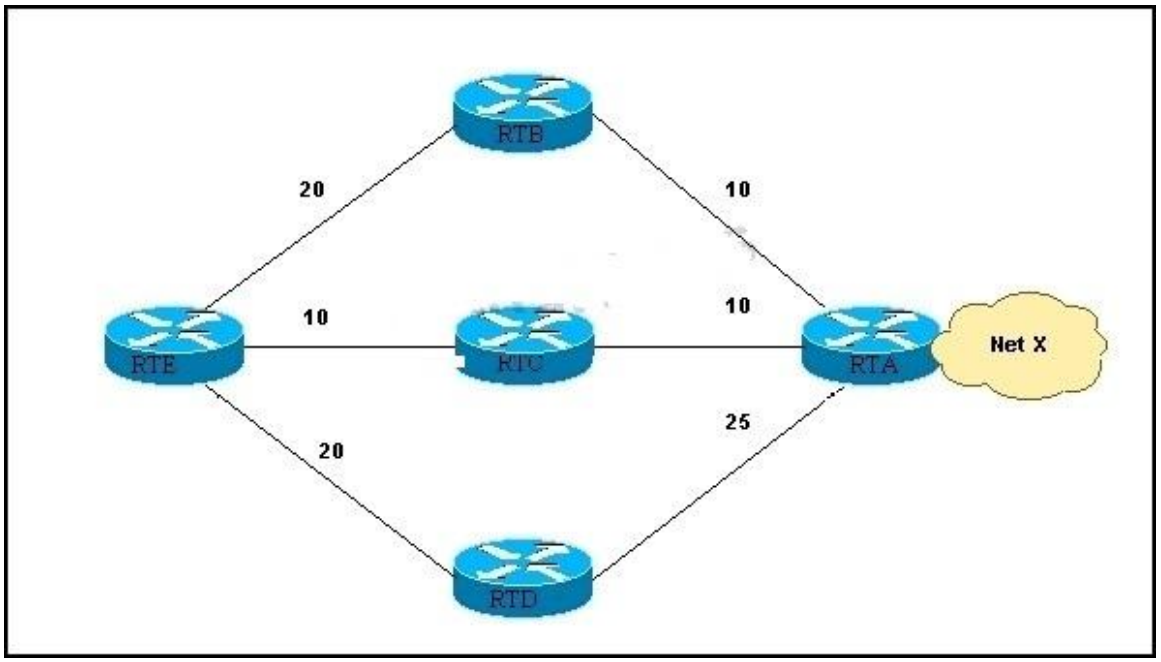
```
RouterA# debug eigrp packets
...
01:39:13:  EIGRP: Received HELLO on Serial0/0 nbr 10.1.2.2
01:39:13: AS 100, Flags 0x0, Seq 0/0 idbQ 0/0 iidbQ un/rely 0/0 peerQ un/rely 0/0
01:39:13:              K-value mismatch
```

A. RouterA received a hello packet with mismatched autonomous system numbers.
B. RouterA received a hello packet with mismatched hello timers.
C. RouterA received a hello packet with mismatched authentication parameters.
D. RouterA received a hello packet with mismatched metric-calculation mechanisms.
E. RouterA will form an adjacency with RouterB.
F. RouterA will not form an adjacency with RouterB.

Answer: DF
Explanation:
If the k-value mismatch occurs, Router A will never form an adjacency with Router B since it is

one of the basic requirements of adjacency. If you see the exhibit, Router A received HELLO packet with a mismatched metric.

QUESTION 10
Observe the exhibit. If the command variance 3 were added to RTE, which path or paths would be chosen to route traffic to network X?



A. E-B-A
B. E-B-A and E-C-A
C. E-C-A and E-D-A
D. E-B-A, E-C-A and E-D-A

Answer: B
Explanation:
Advertised distance of RTD is greater than FD of RTE-RTC-RTA, so the route through D will not be used.

QUESTION 11
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.

Answer: ACD
Explanation:

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

QUESTION 12
Which of the following must match for two directly connected routers running OSPF to establish a neighbor adjacency? (Select 2 choices.)

A. area IDs
B. process IDs
C. router IDs
D. hello timers

Answer: AD
Explanation:
Hello packets are sent every 10 seconds by default. In order for OSPF routers to establish neighbor adjacencies and exchange routing information successfully, the hello interval needs to match all OSPF routers in the OSPF area.
The area number is a number from 0-255, declared at the end of the network command after the wildcard bits. Routers in the same area will exchange routing information or Link State Updates or LSUs

QUESTION 13
Which of the following is an OSPF configuration parameter that is used on an ABR, but not on an internal router?

A. A virtual link to area 0.
B. OSPF summarization command.
C. default-cost extension to the area command.
D. no-summary extension to the area stub command.
E. None of the other alternatives apply

Answer: D
Explanation:
The no-summary extension of the area stub command is used only for ABRs connected to totally stubby areas. It prevents and ABR from sending summary link advertisements into the stub area. This option is used for creating a totally stubby area.

QUESTION 14
If no metric is specified for the routes being redistributed into IS-IS, what metric value is assigned to the routes?

A. 20
B. 10
C. 0
D. 1

Answer: C
Explanation:
The IS-IS metric must be between 1 and 63. There is no default-metric option in IS-IS--you should define a metric for each protocol. If no metric is specified for the routes being redistributed into IS- IS, a metric value of 0 is used by default.

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