

642-902: Implementing Cisco IP Routing (ROUTE)

1. Answer: B, C, E

Which three statements are true about the Internet Group Management Protocol (IGMP)? (Choose three.)

- A. IGMP is a multicast routing protocol that makes packet-forwarding decisions independent of other routing protocols such as EIGRP.
- B. IGMP is used to register individual hosts with a multicast group.
- C. IGMP messages are IP datagrams with a protocol value of 2, destination address of 224.0.0.2, and a TTL value of 1.
- D. IGMP snooping runs on Layer 3 routers.
- E. IGMP version 3 enables a multicast receiving host to specify to the router which sources it should forward traffic from.
- F. There are three IGMP modes: dense mode, sparse mode, and sparse-dense mode.

2. Answer: A, D, E

Which three IP multicast group concepts are true? (Choose three.)

- A. If a packet is sent to a multicast group address, all members of the multicast group will receive it.
- B. If a packet is sent to a multicast group address, the multicast frame contains the source multicast address.
- C. A router does not have to be a member of a multicast group to receive multicast data.
- D. A router does not have to be a member of a multicast group to send to the group.
- E. A router must be a member of a multicast group to receive multicast data.
- F. A router must be a member of a multicast group to send to the group.

3. Answer: B, D, E

What are three methods that may be used to allow a switch to determine which ports to forward IP multicast messages to? (Choose three.)

- A. IGMP
- B. IGMP snooping
- C. PIM
- D. CGMP
- E. static assignment
- F. CDP

4. Answer: A, D

What two situations could require the use of multiple routing protocols? (Choose two)

- A. when using UNIX host-based routers
- B. when smaller broadcast domains are desired
- C. because having multiple routing protocols confuses hackers
- D. when migrating from an older Interior Gateway Protocol (IGP) to a new IGP
- E. when all equipment is manufactured by Cisco
- F. when there are multiple paths to destination networks

5. Answer: C, F

Which two statements are true regarding EIGRP neighbor router authentication? (Choose two.)

- A. Simple password or MD5 authentication may be used.
- B. With MD5 authentication, the key is sent across, but it is encrypted.
- C. MD5 authentication is required.
- D. With authentication configured, the router authenticates the source of each routing update packet that it receives from a neighboring router.
- E. With authentication configured, the router authenticates the source of only the first routing update packet that it receives from a neighboring router.
- F. With authentication configured, the router authenticates the source of every data packet that it receives from neighboring routers.

6. Answer: C

How is the designated querier elected in IGMPv2?

- A. The first router to appear on a subnet is designated.
- B. The host that responds first to the election query is designated.
- C. The router with the lowest IP address on a subnet is designated.
- D. The host with the lowest MAC address on a segment is designated.

7. Answer: C

Which statement is true about EBGP?

- A. An internal routing protocol can be used to reach an EBGP neighbor.
- B. The next hop does not change when BGP updates are exchanged between EBGP neighbors.
- C. A static route can be used to form an adjacency between neighbors.
- D. EBGP requires a full mesh.

8. Answer: B, E

Which two statements are true about IBGP neighbor relationships? (Choose two.)

- A. An EGP or static routing is required between IBGP neighbors.
- B. A full-mesh IBGP requires that neighbor relationships be established between all BGP enabled routers in the autonomous system.
- C. IBGP neighbors must be in different autonomous systems.
- D. The BGP split-horizon rule specifies that routes learned via EBGP are never propagated to other IBGP peers.
- E. The BGP split horizon rule specifies that routes learned via IBGP are never propagated to other IBGP peers.

9. Answer: B

Which code from the show ip eigrp topology command output indicates a convergence problem for the associated network?

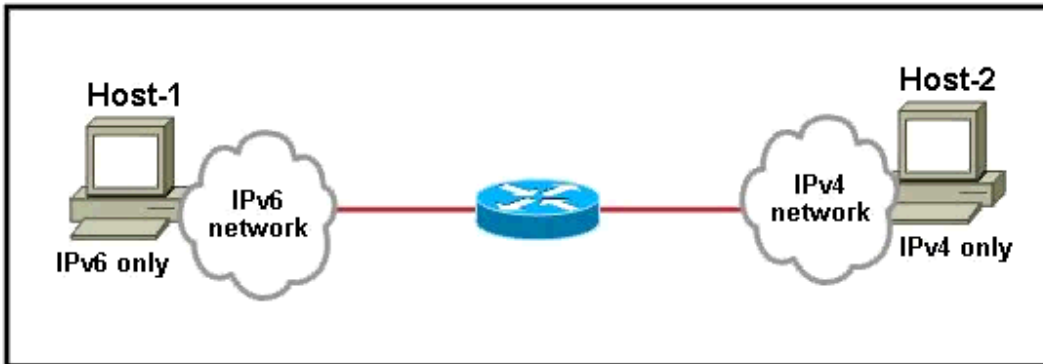
- A. *
- B. SIA
- C. Query
- D. Active
- E. Update
- F. Passive

10. Answer: A

In IPv6, the interfaces running OSPF can be configured with multiple address prefixes. Which statement is true about the IPv6 addresses that can be included into the OSPF process?

- A. Specific addresses cannot be selected for importation into the OSPF process.
- B. Specific addresses can be selected using an ACL.
- C. Specific addresses can be selected using a route map.
- D. Specific addresses can be selected using a prefix list.

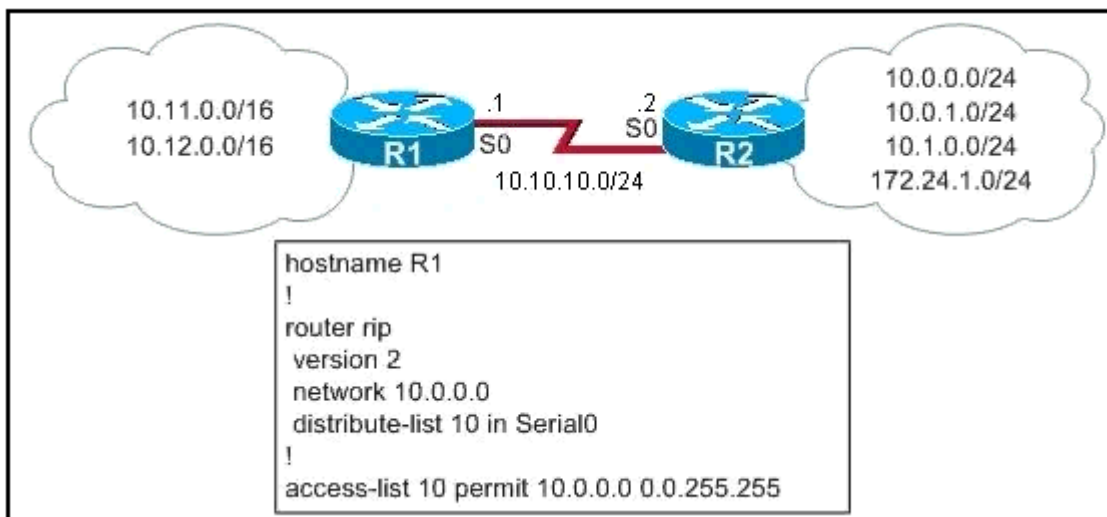
11. Answer: A



Refer to the exhibit. Which interoperability technique implemented on the router would allow Host-1 to communicate with Host-2?

- A. Dual Stack
- B. NAT-PT
- C. 6to4 tunnel
- D. GRE tunnel
- E. ISATAP tunnel

12. Answer: C



Refer to the exhibit. What is the effect of the distribute-list command in the R1 configuration?

- A. R1 will filter only the 172.24.1.0/24 route from the R2 RIP updates.
- B. R1 will permit only the 10.0.0.0/24 route in the R2 RIP updates.
- C. R1 will filter the 10.1.0.0/24 and the 172.24.1.0/24 routes from the R2 RIP updates.
- D. R1 will not filter any routes because there is no exact prefix match.

13. Answer: A, C

```
Router# debug ip mrouting 224.2.0.1
MRT: Create (*, 224.2.0.1), if_input NULL
MRT: Create (224.69.15.0/24, 225.2.2.4), if_input Ethernet0, RPF nbr 224.69.61.15
MRT: Create (224.69.39.0/24, 225.2.2.4), if_input Ethernet1, RPF nbr 224.0.0.0
MRT: Create (10.9.0.0/16, 224.2.0.1), if_input Ethernet1, RPF nbr 0.0.0.0
MRT: Create (10.16.0.0/16, 224.2.0.1), if_input Ethernet1, RPF nbr 0.0.0.0
```

Refer to the exhibit. Given the output of a debug ip mrouting command, which two statements are true? (Choose two.)

- A. This router received an IGMP host report from a group member or a PIM join message.
- B. The reverse path forwarding (RPF) for the route 224.2.0.1 failed to find the interface on which the multicast packet was received.
- C. Multicast route to 10.16.0.0/16 was added to the mroute table and created by a source directly connected to the router.
- D. Multicast route to 224.69.15.0/24 was added to the mroute table and created by a source directly connected to the router.
- E. The route to 224.69.15.0/24 will be out Ethernet 0.

14. Answer: B, C

```
NA-1#sh ip mroute
IP Multicast Routing Table
Flags: D - Dense, S - Sparse, B - Bidir Group, s - SSM Group, C - Connected
       L - Local, P - Pruned, R - RP-bit set, F - Register flag,
       T - SPT-bit set, J - Join SPT, M - MSDP created entry,
       X - Proxy Join Timer Running, A - Advertised via MSDP, U - URD,
       I - Received Source Specific Host Report
Outgoing interface flags: H - Hardware switched
Timers: Uptime/Expires
Interface state: Interface, Next-Hop or VCD, State/Mode

(*, 224.1.1.1), 00:07:54/00:02:59, RP 10.127.0.7, flags: S
  Incoming interface: Null, RPF nbr 0.0.0.0
  Outgoing interface list:
    Serial1/3, Forward/Sparse, 00:07:54/00:02:32

(172.16.8.1, 224.1.1.1), 00:01:29/00:02:08, flags: TA
  Incoming interface: Serial1/4, RPF nbr 10.139.16.130
  Outgoing interface list:
    Serial1/3, Forward/Sparse, 00:00:57/00:02:02
```

Refer to the exhibit. Based upon the information provided, which two statements are correct regarding the PIM sparse mode network? (Choose two.)

- A. The RP for this network is 172.16.8.1.
- B. The RP for this network is this router.
- C. The multicast source is connected to the serial 1/4 interface.
- D. The multicast source is directly connected to this router.
- E. The multicast receiver is directly connected to this router.