Chapter 6: Quiz – IP Routing Essentials (Answers) CCNPv8 ENCOR

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1. Consider the following command:

ip route 192.168.10.0 255.255.255.0 10.10.10.2 5

What does the 5 at the end of the command signify?

- metric
- exit interface
- **administrative distance**
- maximum number of hops to the 192.168.10.0/24 network

Explanation: The 5 at the end of the command signifies administrative distance. This value is added to floating static routes or routes that only appear in the routing table when the preferred route has gone down. The 5 at the end of the command signifies administrative distance configured for the static route. This value indicates that the floating static route will appear in the routing table when the preferred route (with an administrative distance less than 5) is down.

2. What type of static route is created when the next-hop IP address and exit interface are specified?

- recursive static route
- directly connected static route
- **fully specified static route**
- floating static route

Explanation: A fully specified static route has the next-hop IP address and exit interface specified. A recursive static route has only the next-hop IP address specified. A directly attached static route has only the router exit interface specified. A floating static route has a higher metric than the dynamic routes and serves as a backup route.

3. Which two parameters are used by EIGRP as metrics to select the best path to reach a network? (Choose two.)

- hop count
- **bandwidth**
- jitter
- resiliency

- **delay**
- confidentiality

Explanation: EIGRP uses bandwidth, delay, load, and reliability as metrics for selecting the best path to reach a network.

4. Which type of static route typically uses the *distance* parameter in the ip route global configuration command?

- summary static route
- default static route
- **floating static route**
- standard static route

Explanation: Because a floating static route is not designed to be used as a primary route, its configuration requires a higher administrative distance than the usual default value of 1. When set higher than the administrative distance for the current routing protocol, the distance parameter allows the route to be used only when the primary route fails. All other forms of static routes have specific uses as primary routes.

5. What is the purpose of a routing protocol?

- It is used to build and maintain ARP tables.
- It provides a method for segmenting and reassembling data packets.
- It allows an administrator to devise an addressing scheme for the network.
- **It allows a router to share information about known networks with other routers.**
- It provides a procedure for encoding and decoding data into bits for packet forwarding.

Explanation: Routing protocols allow routers to exchange routing information about known networks.

6. Which type of routing protocol uses LSAs and TLVs to support extended features?

- **link-state**
- hybrid
- distance vector
- path vector

Explanation: Link-state routing protocols include capabilities such as LSAs for OSPF and TLVs (type/length/value) for IS-IS that allow them to support extended features.

7. Which dynamic routing protocol was developed to interconnect different Internet service providers?

- **BGP**
- EIGRP
- OSPF
- RIP

Explanation: BGP is a protocol developed to interconnect different levels of ISPs as well as ISPs and some of their larger private clients.

8. Which BGP attribute is used by BGP to ensure a loop-free topology on the Internet?

- Next_hop
- **As_path**
- local preference
- Atomic aggregate
- Origin

Explanation: The AS_Path attribute is used by BGP to avoid routing loops by keeping a record of each AS that a routing advertisement traverses.

9. What is the default administrative distance for OSPF?

- 90
- 100
- **110**
- 115
- 120

Explanation: The default administrative distance for OSPF is 110.

10. Which route description best defines a floating static route?

- a route with a metric equal to the metric of a corresponding dynamic route
- a route with a metric less than the metric of a corresponding dynamic route
- a route with a metric greater than the metric of a corresponding dynamic route
- a route with an administrative distance less than the administrative distance of a corresponding dynamic route
- **a route with an administrative distance greater than the administrative distance of a corresponding dynamic route**

Explanation: A floating static route must be configured with an administrative distance that is greater than the administrative distance of the dynamic routing protocol advertising the route.

11. Which static path would be the primary default path out of the network?

- ip route 0.0.0.0 0.0.0.0 12.1.20.2 70
- ip route 0.0.0.0 0.0.0.0 19.68.6.1 60
- ip route 0.0.0.0 0.0.0.0 22.16.20.2 50
- **ip route 0.0.0.0 0.0.0.0 22.68.6.1 40**

Explanation: A floating static route is a static route that includes an administrative distance value at the end of the command. The lower the administrative distance, the more trusted the route. In this case the command `ip route 0.0.0.0 0.0.0.0 22.68.6.1 40` creates a static route with an administrative distance of 40.

12. Which technology creates segmentation between network interfaces, IP addresses, and routing tables?

- **virtual routing and forwarding**
- virtual LANs
- multiprotocol label switching
- virtual router redundancy protocol

Explanation: Virtual routing and forwarding, or VRF, is a technology that creates several separate virtual routers on a single physical router. Each of the virtual routers acts as an independent and separate router so that their paths are isolated from each other.