Exam Report: 7.2.9 Practice Questions

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Overall Performance

Your Score: 100%

Passing Score: 80%

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Individual Responses

Question 1: Correct

Which of the following routing protocols uses relative link cost as the metric?

- BGP
- OSPF
- RIP
- EIGRP

Explanation

OSPF is a link-state routing protocol used for routing within an AS. OSPF uses relative link cost for the metric.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm *NP15_ROUTING_PROTOCOLS_02]

Question 2: Correct

Which of the following routing protocols is used by routers on the internet for learning and sharing routes?

- EIGRP
- IS-IS
- OSPF
- RIP
- BGP

Explanation

BGP is the protocol used on the internet. ISPs use BGP to identify routes between ASs. Very large networks can use BGP internally, but typically only share routes on the internet if the AS has two (or more) connections to the internet through different ISPs.

RIP is used on small private networks, while OSPF and EIGRP are used on larger private networks. IS-IS is used on very large private networks and within the internet service provider (ISP) network.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-5 #MCS1]

Question 3: Correct

Which of the following routing protocols divides the network into areas, with all networks required to have an area 0 (area 0 identifying the backbone area)?

- [x] OSPF
- [ ] IS-IS
- [ ] EIGRP
- [ ] RIP

Explanation

OSPF divides a large network into areas. Each autonomous system requires an area 0 that identifies the network backbone. All areas are connected to area 0, either directly or indirectly through another area. Routes between areas must pass through area 0.

IS-IS uses areas, but does not have an area 0 requirement. Neither RIP nor EIGRP use areas.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-5 #MCS2]

Question 4: Correct

Which of the following routing protocols is classified as a hybrid routing protocol?

- [x] EIGRP
- [ ] IS-IS
- [ ] RIP
- [ ] OSPF

Explanation

EIGRP is a hybrid routing protocol developed by Cisco for routing within an AS.

RIP is a distance vector protocol, while OSPF and IS-IS are link state protocols.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-5 #MCS3]

Question 5: Correct

What are the main differences between the OSPF and IS-IS routing protocols?

- [ ] OSPF is an IGP routing protocol, while IS-IS is a BGP routing protocol.
- [x] OSPF requires an area 0, while IS-IS does not.
- [ ] OSPF is a link state protocol, while IS-IS is not.
- [ ] OSPF is a classful protocol, while IS-IS is a classless protocol.

Explanation

Like OSPF, IS-IS uses areas when designing the network. However, IS-IS does not require an area 0 like OSPF does. Because IS-IS was originally designed for non-IP protocols, it can more easily support IPv6 routing.

Both OSPF and IS-IS have the following characteristics:

- Both are link-state protocols.
- Both are classless protocols, supporting CIDR and VLSM.
- Both are Interior Gateway Protocols (IGPs) that are used within an AS.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-5 #MCS4]

Question 6: Correct

Which of the following protocols has a limit of 15 hops between any two networks?

- BGP
- IS-IS
- RIP
- OSPF
- EIGRP

Explanation

RIP networks are limited in size to a maximum of 15 hops between any two networks. A network with a hop count of 16 indicates an unreachable network.

The other routing protocols do not use the hop count as the metric. EIGRP uses bandwidth and delay for the metric. OSPF and IS-IS use a relative link cost. BGP uses paths, rules, and policies for the metric.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-5 #MCS5]

Question 7: Correct

Under which of the following circumstances might you implement BGP on your company network and share routes with Internet routers?

- If the network is connected to the Internet using public addressing.
- If the network is connected to the Internet using multiple ISPs.
- If the network has over 15 hops.
- If the network has over 15 areas and uses IPv6.

Explanation

Very large networks can use BGP internally, but typically only share routes on the Internet if the AS has two (or more) connections to the Internet through different ISPs.

If your network has over 15 hops, use a routing protocol other than RIP. Use OSPF or IS-IS to divide your network into areas. Private networks that use public IP addresses do not need to share routes with Internet routers; it is typically the responsibility of the ISP to configure routes into the private network, even when public addressing is being used. A single route out of the private network is all that is required if the network has a single connection to the Internet.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-5 #MCS7]

Question 8: Correct

Which of the following statements about RIP is true?

- RIP is suitable for large networks.
- RIP is the routing protocol used on the internet.
- RIP is a link state routing protocol.
- ➡ RIP uses hop counts as the cost metric.

Explanation

RIP is a distance vector routing protocol. As such, it is susceptible to the count-to-infinity problem. RIP uses the hop count as the cost metric. Because it has a limitation of 15 hops in one route, it is not suited for large networks.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm C802_411N #23]

Question 9: Correct

Which of the following best describes OSPF?

- ➡ OSPF is a classless link state routing protocol.
- OSPF is a classful link state routing protocol.
- OSPF is a classless distance vector routing protocol.
- OSPF is a classful distance vector routing protocol.

Explanation

OSPF is a classless link state routing protocol.

RIP version 1 and IGRP are both classful distance vector routing protocols. EIGRP is a hybrid protocol that supports classless addressing.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm C802_411 #23]

Question 10: Correct

You have a private network connected to the internet. Your routers will not share routing information about your private network with internet routers.

Which of the following best describes the type of routing protocol you would use?

- Distance vector
- Link state
- Dynamic
- Static
- BGP
- ➡ IGP

Explanation

You would use an interior gateway protocol (IGP) on routers within your network. Routing protocols can be classified based on whether they are routing traffic within or between autonomous systems. An interior gateway protocol (IGP) routes traffic within an AS; an exterior gateway protocol (EGP) routes traffic between ASs.

Link state and distance vector describe how routing protocols share routing information. The network size might determine which protocol is best for your network. Static routing uses manually-defined routes in the routing table, while dynamic routing uses a protocol so routers learn and share routes with other routers. You can use static routing, dynamic routing, or both on a private network.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-6 #MCS4]

Question 11: Correct

A router is connected to network 192.168.1.0/24 and network 192.168.2.0/24. The router is configured to use RIP and has learned of networks 192.168.3.0/24 and 192.168.4.0/24.

The next hop router for network 192.168.3.0 has changed. You need to make the change with the least amount of effort possible.

What should you do?

- Stop and restart the RIP protocol on the router.
- Manually reconfigure the default route to point to the new next hop router.
- Wait for convergence to take place.
- Force RIP to perform an immediate update.

Explanation

When using a routing protocol, changes in routing information take some time to be propagated to all routers on the network. The term "convergence" is used to describe the condition when all routers have the same (or correct) routing information.

Static routes in the routing table must be updated manually. Restarting RIP might actually increase the time required for changes to be learned. Forcing an update (if the router supports it) is not a requirement, as the periodic sharing of routes will eventually update the routing table entry.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-6 #MCS7]

Question 12: Correct

You have a network configured to use the OSPF routing protocol.

Which of the following describes the state when all OSPF routers have learned about all other routes in the network?

- Classful
- VLSM
- Link state
- Distance vector
- Convergence

Explanation

The term "convergence" is used to describe the condition when all routers have the same (or correct) routing information. Convergence requires some time, but once it is reached, it means that any router has learned about all other networks that are being advertised (or shared) on the network.

Link-state and distance vector describe general methods that routers use to share routes with

other routers. Classful describes a routing protocol that assumes the subnet mask based on the address class of the network. Variable length subnet masks (VLSM) lets you use custom subnet masks for subnetting or supernetting.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm NP09_1-6 #MCS8]

Question 13: Correct

Which of the following routing protocols uses paths, rules, and policies instead of a metric for making routing decisions?

- (selected) BGP
- EIGRP
- RIP
- IS-IS
- OSPF

Explanation

BGP is an advanced distance vector protocol (also called a path vector protocol) that uses paths, rules, and policies to make routing decisions instead of a metric.

References

LabSim for Network Pro, Section 7.2.
[netpro18v5_all_questions_en.exm *NP15_ROUTING_PROTOCOLS_03]