Exam 3: Routing Part 1

Due	Points	Questions	Time Limit
No due date	100	29	65 Minutes

Instructions

This is an **individual, closed-book** exam.

Access to course materials is not allowed; looking up answers online; and any form of communication and sharing of answers (e.g. messaging, sharing of class materials, screen sharing, etc) between students is considered as academic dishonesty. This automatically merits a 0 in the course and and will be subject to a discipline case as stipulated in the student handbook.

Take note that your actions are logged while taking the exam and any excessive switching of pages in your browser will be flagged.

Once you begin, you will be given 60 minutes to complete the exam.

Read the questions carefully and select the best answer/s among the given choices.

Once you proceed, you signify that you have read and understood the exam instructions above

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	35 minutes	83 out of 100

Correct answers are no longer available.

Score for this quiz: **83** out of 100
Submitted Apr 11 at 9am
This attempt took 35 minutes.

Course Chat

Question 1

Which value in a routing table represents th
used by the router to determine which rout
table when there are multiple routes towar

- (●) Metric
- ( ) Hop Count
- ( ) Administrative distance
- ( ) Route Cost

Send

Incorrect

Question 2

What happens to a static route entry in a routing table when the next hop address associated with that route becomes unavailable?

- ( ) The router polls neighbors for a replacement route.
- (●) The static route is removed from the routing table.
- ( ) The router automatically redirects the static route to use another interface.
- ( ) The static route remains in the table because it was defined as static.

Question 3

2 / 2 pts

Which of the statements below correctly describes an interior gateway routing protocol

It is a routing protocol used to share routes between routers between routers belonging to different autonomous systems

It is a routing protocol wherein routers have information only about the direction and distance of a destination network

It is a routing protocol that has a full map of the entire network topology

It is a routing protocol used to share routes between routers within the same autonomous system

Question 4

6 / 6 pts

Match the following packet forwarding methods to the statements that best describe them:

Process Switching — Each packet must be

Fast Switching — A packet with a newly

Express forwarding — A precalculated datab

Question 5

2 / 2 pts

When referring to dynamic routing, what does it mean when the network is 'converged'?

- (●) All routers have complete and stable routing tables
- ( ) All routers have already agreed on the root bridge of the network
- ( ) All routers are using the same routing protocol
- ( ) All routers are no longer sending routing updates

Question 6

2 / 2 pts

How does the route poisoning mechanism of RIP prevent routing loops from occurring?

- ( ) It prevents routes learned using a certain interface from being sent out as updates on the same interface
- (●) It explicitly declares a route as unreachable when its network becomes unavailable
- ( ) It prevents routers from accepting updates about a route that was recently declared to be down
- ( ) It prevents routing updates to be sent out on interfaces connected to user LANs

Question 7

2 / 2 pts

If a network topology uses static routing in its routing domain, what configuration changes are needed to provide full connectivity to all networks if a new subnet will be added to one of the existing routers?

- ○ No new route configurations are needed.
- ◉ New routes need to be added on all network routers except the one where the new subnet is directly connected
- ○ New routes need to be added on all network routers including the one where the new subnet will be directly connected
- ○ A new route needs to be configured only on the router where the new subnet will be directly connected

Partial

Question 8

4 / 6 pts

Which of the following statements are TRUE regarding how a router learns its routes? (Choose 3)

- ☑ A route to a remote network may be manually configured by an administrator
- ☐ Remote networks may be automatically learned when shared by other routers in the network
- ☑ Remote networks must be manually defined by an administrator

- [x] Directly connected routes are automatically installed when an interface is enabled and configured with an IP address

- [ ] A directly connected route must be manually configured by an administrator

For the succeeding 2 questions, refer to the routing table below:

```
RTR-Main>show ip route
...

Gateway of last resort is 192.168.1.1 to network 0.0.0.0

     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.12/32 is directly connected, GigabitEthernet0/0
     192.168.2.0/25 is subnetted, 2 subnets
S       192.168.2.0/25 [1/0] via 192.168.1.2, GigabitEthernet0/1.10
S       192.168.2.128/25 [1/0] via 192.168.1.2, GigabitEthernet0/1.10
     192.168.3.0/26 is variably subnetted, 2 subnets, 2 masks
D       192.168.3.0/26 [90/30720] via 192.168.1.13, 00:00:01, GigabitEt
hernet0/0
D       192.168.3.64/27 [90/30720] via 192.168.1.13, 00:00:01, GigabitE
thernet0/0
S*   0.0.0.0/0 [1/0] via 192.168.1.1, GigabitEthernet0/0
```

Question 9

2 / 2 pts

Which of the following routes refer to a network/s that an interface/s of RTR-MAIN is directly connected to?

- (•) 192.168.1.0/24
- ( ) 192.168.2.0/25
- ( ) 192.168.3.0/26
- ( ) 192.168.1.12/32

192.168.3.64/27

Question 10

2 / 2 pts

Which of the following routes were learned by RTR-MAIN from another router?

- 192.168.1.0/24
- 192.168.2.0/25
- 192.168.3.64/27
- 192.168.1.12/32

Question 11

6 / 6 pts

Which of the following statements is TRUE about the Routing Information Protocol (RIP)? Choose 3

- [x] It is an interior gateway routing protocol
- [ ] It requires manually configured summary networks to advertise summary routes
- [x] Routes-learned through RIP are considered less trustworthy than static routes on Cisco routers
- [ ] Is uses hop count as its metric where networks that are reachable are at most 16 hops away

- [x] Routing updates are sent periodically even if no topology changes occur

Incorrect

Question 12

0 / 2 pts

A route is listed in a routing table as follows:

```
D 192.168.25.128/27 [90/30720] via 192.168.3.2, 00:00:01, GigabitEthern
et0/0
```

What is the significance of the address '192.168.3.2' in this route entry?

- [ ] It is the address of the neighbor router to whom a packet destined for 192.168.25.128/27 will be forwarded to
- [ ] It means all packets to be sent to 192.168.3.2 will be routed through 192.168.25.128/27
- [ ] It is the default gateway address of the hosts belonging in the 192.168.25.128/27 network
- [x] It is the IP address of this router's interface that will be used to send packets to 192.168.25.128/27

Question 13

6 / 6 pts

Which of the following statements correctly describes the disadvantages of static routing compared to dynamic routing (Choose 3)?

- [x] Administrative overhead increases as the network grows
- [ ] Less secure because network topology information can be exposed
- [x] Configuration becomes complex when used in large network sizes
- [x] Cannot automatically adapt to topology changes
- [ ] Path taken by packets through the network is unpredictable and changes according to network conditions
- [ ] More computational overhead

Partial

Question 14

3 / 4 pts

Determine if the following are TRUE or FALSE based on the principles of routing.

1. The default gateway router of a host will confirm that an end-to-end route is available before forwarding a packet to its destination [Select] .

2. A response to packet routed earlier through the network will take the same different return path back to the originating host [Select] .

3. The route with the lower administrative distance will always be preferred over one with a higher administrative distance regardless of their respective metric values [Select]

4. A router is not knowledgeable of the content of another router's routing table [Select]

Answer 1:

True

Answer 2:

False

Answer 3:

True

Answer 4:

True

Refer to the exhibit below to answer the succeeding 3 questions:

```
RTR-Main>show ip route
...

Gateway of last resort is not set

S    192.168.0.0/20 [1/0] via 192.168.1.2
     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0
R    192.168.2.0/24 [120/1] via 192.168.1.3, 00:00:18, GigabitEthernet
0/0
                    [120/1] via 192.168.1.2, 00:00:08, GigabitEthernet
0/0
     192.168.3.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.3.0/24 is directly connected, GigabitEthernet0/1
L       192.168.3.1/32 is directly connected, GigabitEthernet0/1
R    192.168.4.0/24 [120/2] via 192.168.1.3, 00:00:18, GigabitEthernet
0/0
```

Question 15

2 / 2 pts

What will RTR-MAIN do when it receives a packet with destination 192.168.4.3?

- (●) It will forward the packet to 192.168.1.3
- ( ) The router is the packet destination. it does not need to be forwarded
- ( ) It will drop the packet
- ( ) It will forward the packet to 192.168.1.2

Question 16

2 / 2 pts

What will the router do when it receives a packet with destination 192.168.16.1?

- ( ) It will be sent out interface G0/0
- (●) The packet will be dropped
- ( ) It will be forwarded to 192.168.1.2
- ( ) It will be sent out interface G0/1

Question 17

2 / 2 pts

What will RTR-MAIN do when it receives a packet with destination 192.168.2.25?

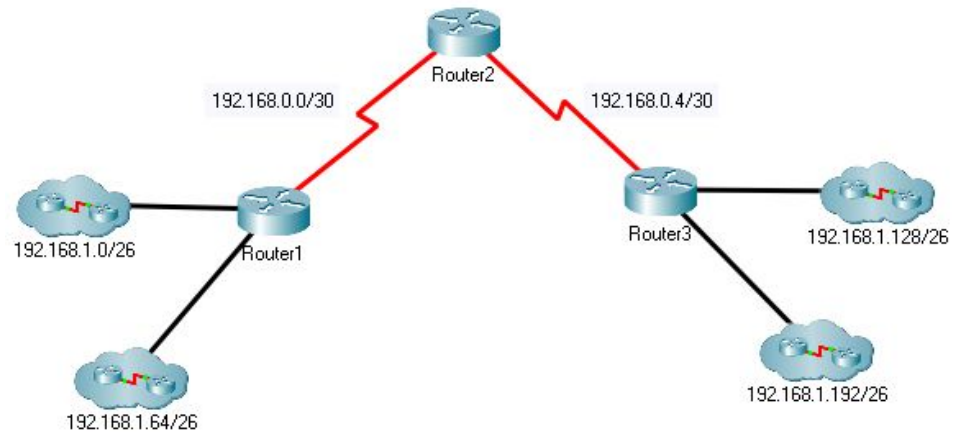
- ( ) It will be sent out through G0/1
- ( ) It will drop the packet

- It will be sent out through G0/0
- It will be forwarded to 192.168.1.3

Question 18

2 / 2 pts

A network using has the following topology.



If image does not load, click here

Network users are reportedly having issues in connectivity between subnets on Router1 and subnets on Router3. A 'show ip route' command on Router2 produces the output below. What is likely the cause of the issue?

```
Router2(config-router)#do sh ip route
...
Gateway of last resort is not set

     192.168.0.0/30 is subnetted, 2 subnets
C       192.168.0.0 is directly connected, Serial0/0/0
C       192.168.0.4 is directly connected, Serial0/0/1
R    192.168.1.0/24 [120/1] via 192.168.0.1, 00:00:10, Serial0/0/0
                    [120/1] via 192.168.0.6, 00:00:13, Serial0/0/1
```

- The RIP configuration is missing network statements hence resulting in incomplete routes on Router2
- A default route is not set

- (●) RIP is erroneously advertising summarized routes between routers
- ( ) Static routes to the Router1 and Router3 were not configured on Router2

Question 19

4 / 4 pts

Which of the following correctly describes a floating static route? Choose 2

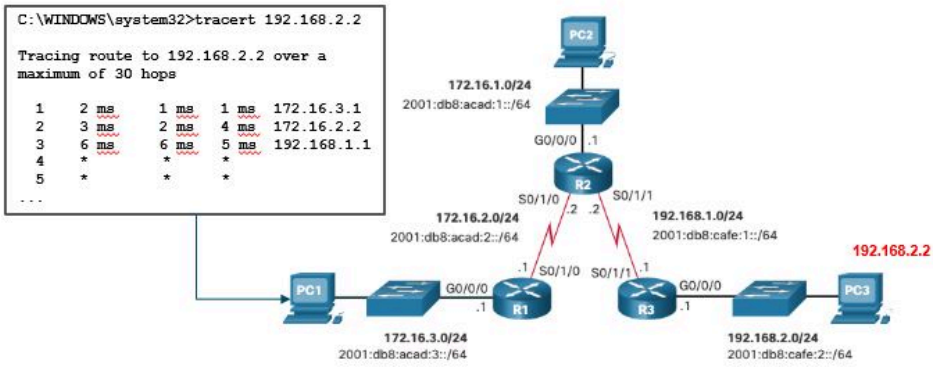
- [ ] It is configured with a higher metric than the default value for a static route
- [x] A floating route is placed in the routing table only if the connection to the primary route to a destination network is no longer available
- [ ] A router will load balance between a standard and a floating static route if both are available to a destination network
- [ ] Once activated, a floating route stays in the routing table even if the primary route becomes available again
- [x] It is configured with a higher administrative distance that the default value for a static route

Incorrect

Question 20

0 / 2 pts

Refer to the exhibit below. A traceroute performed on PC1 produced the following output. What can you conclude from the result of the trace from PC1 to PC3?



If image does not load, click here

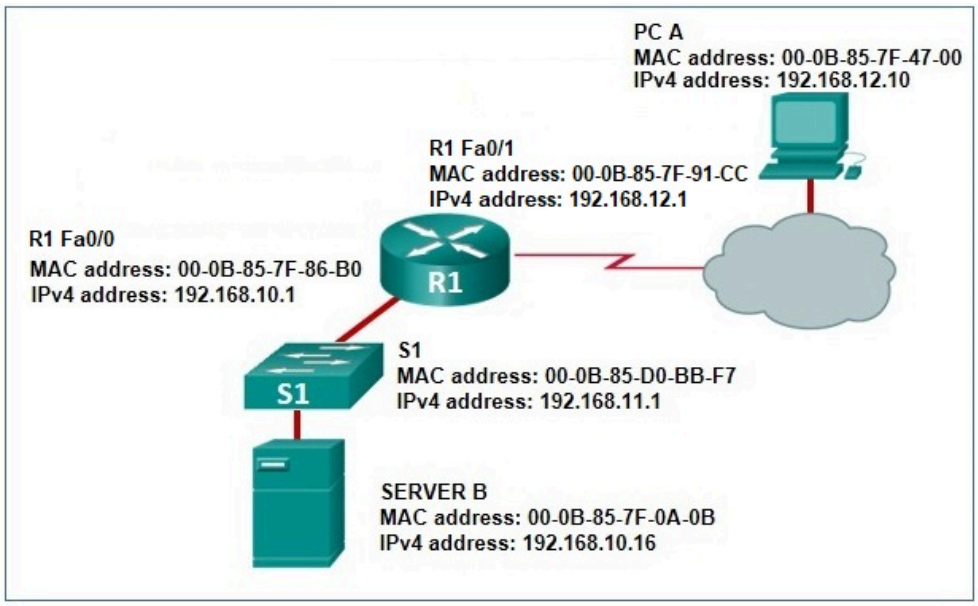
- A fully working path exists between PC1 and PC3
- PC3 likely has IP configuration issues
- There is a routing loop in the network
- There is a missing route in the routing table of R3

Incorrect

Question 21

0 / 2 pts

Refer to the exhibit below. What source MAC address does R1 use when it forwards a packet originating from PC A to Server B?



If image does not load, click here

00-0B-85-7F-47-00

Question 22

4 / 4 pts

A network administrator would like to define a summary route for the following networks:

- 10.10.128.0/20
- 10.10.144.0/22
- 10.10.148.0/22
- 10.10.152.0/21
- 10.10.160.0/19

Provide the summary network address of these subnets in slash notation (e.g. 192.168.1.0/24):

10.10.128.0/18

Question 23

6 / 6 pts

A router R1 will be configured with a static route that will forward packets to R2 to reach a destination network (192.168.1.0/24). R1 is connected to R2 using its S0/0/0 as its exit interface; while the receiving interface on R2 is set with an IP address of 172.16.1.2.

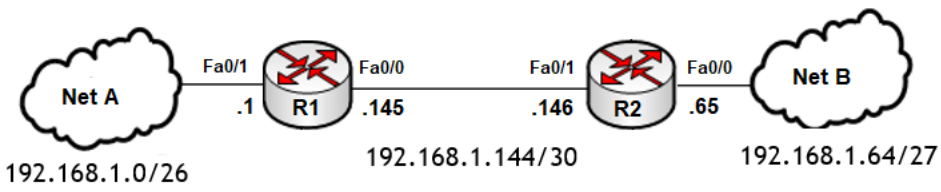
Which among the following static route can be used to configure a working static route to 192.168.1.0/24 on R1? Check all that apply

- [x] ip route 192.168.1.0 255.255.255.0 172.16.1.2 S0/0/0
- [x] ip route 192.168.1.0 255.255.255.0 S0/0/0
- [ ] ip route 192.168.1.0 255.255.255.0 R2
- [x] ip route 192.168.1.0 255.255.255.0 172.16.1.2

Question 24

8 / 8 pts

Refer to the exhibit below.



If image does not load, click here

What should be the next hop and exit interface of the route on **R2** so it can forward packets to **Network B**?

- Next Hop: [Select]
- Exit Interface: [Select]

What should be the next hop and exit interface of the route on **R2** so it can forward packets to **Network A**?

- Next Hop: [Select]

- Exit Interface: [Select]

Answer 1:

none

Answer 2:

Fa0/0

Answer 3:

192.168.1.145

Answer 4:

Fa0/1

Partial

Question 25

4 / 6 pts

Which of the following statements is TRUE regarding routing protocols? Choose 3

- [ ] Routing protocols all use the same algorithm to find the best route to a destination network
- [x] Routes can be shared between 2 routers using different routing protocols
- [x] All routing protocols use routing messages to share routes among routers

- [x] A best path computed using a routing protocol will not necessarily be the same best path computed by a another protocol
- [ ] All routing protocols use the route with the lowest calculated metric to the destination network as the best path

Partial

Question 26

2 / 4 pts

A packet has a destination IPv6 address of 2001:DB8:ACAD:20:BEED::9A

Which among the network prefixes below is considered as a match to the destination of this packet? Choose all that apply

- [x] 2001:DB8:ACAD:20:BEED:9A::/96
- [x] 2001:DB8:ACAD:20:BEED::/84
- [ ] 2001:DB8:ACAD:2000::/64
- [x] 2001:DB8:ACAD:20::/64

Question 27

2 / 2 pts

A router has learned 2 routes to reach the same remote network. One of them is a static route manually configured by the network administrator; while the other was learned from information received from another router using a dynamic routing protocol. Which of the routes will be used to forward packets to the remote network?

- [ ] Packets will use both routes, but more of them will be forwarded using the static route
- [ ] They will be forwarded using the dynamic route
- [x] They will be forwarded using static route
- [ ] Packets will be equally load balanced, using both the static route and dynamic route

Partial

Question 28

4 / 6 pts

Which of the following statements correctly describes a default route? (Choose 3)

- [x] It is represented by a route with an all-zero destination network address and prefix length
- [x] It must always be implemented using static routing
- [ ] It is a route with the lowest administrative distance in the routing table
- [ ] It is used to forward packets which do not match a more specific network route in the routing table
- [x] It is a route that matches all packets

Incorrect

Question 29

0 / 2 pts

What is the purpose of the 'network' command when configuring RIP routing commands on a router?

- Statement B: Routing updates will be sent and received on router interfaces whose IP addresses belong to the given network
- Both statements A and B
- Neither statements A nor B
- (selected) Statement A: All directly connected subnets of the given network will be included in the advertised routes of the router

Access code for the Exam 3 part 2 is R0ut1ng

Quiz Score: **83** out of 100

This quiz score has been manually adjusted by +2.0 points.

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Submission Details:

Time:	35 minutes
Current Score:	83 out of 100

Kept Score: 83 out of 100