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CCNA 3 (v5.0.3 + v6.0) Chapter 7 Answers Full

1. **In which scenario will the use of EIGRP automatic summarization cause inconsistent routing in a network?**
   - when the routers in an IPv4 network have mismatching EIGRP AS numbers
   - **when the routers in an IPv4 network are connected to discontiguous networks with automatic summarization enabled***
   - when there is no adjacency that is established between neighboring routers
   - when there is no common subnet that exists between neighboring routers

   If there are discontiguous IPv4 networks, automatic summarization causes inconsistent routing because routes are summarized at classful boundaries. When there is no common subnet between EIGRP neighbors, an adjacency cannot form. Mismatching EIGRP AS numbers and the lack of an adjacency will not cause inconsistent routing, but a lack of routing overall.

2. **What is the purpose of a Null0 route in the routing table?**
   - **to prevent routing loops***
   - to redistribute external routes into EIGRP
   - to act as a gateway of last resort
   - to prevent the router from sending EIGRP packets

   EIGRP for IPv4 automatically installs a Null0 summary route into the routing table when EIGRP automatic summarization is enabled and there is at least one EIGRP learned subnet. Null0 is a virtual interface that is a route to nowhere and is used to prevent routing loops for destinations that are included in a summary network but do not have a specific entry in the routing table.

3. **Refer to the exhibit. Routers R1 and R2 are directly connected via their serial interfaces and are both running the EIGRP routing protocol. R1 and R2 can ping the directly connected serial interface of their neighbor, but they cannot form an EIGRP neighbor adjacency. What**

action should be taken to solve this problem?

```
R2# show ip eigrp topology
IP-EIGRP Topology Table for AS(80)/ID(192.168.101.1)

Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 128256
       Via Connected, Serial0/0/0
R2#


R1# show ip eigrp topology
IP-EIGRP Topology Table for AS(50)/ID(192.168.100.5)

Codes: P -
Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

P 192.168.1.0/30, 1 successors, FD is 20512000
        via Connected, Serial0/0/0
```

- Configure EIGRP to send periodic updates.
- Enable the serial interfaces of both routers.
- Configure the same hello interval between the routers.
- **Configure both routers with the same EIGRP autonomous system number.***

  In EIGRP configuration, the command that starts the EIGRP process is followed by a number that is the autonomous system (AS) number, router eigrp as-number. The as-number must be the same in all routers that are in the same EIGRP routing domain. In this case R2 is configured with AS 80 and R1 is configured with AS 50.

4. **Fill in the blank. Do not use abbreviations.**The _____ command causes an EIGRP router to stop sending hello packets through an interface.
   Correct Answer: passive-interface*

   The passive-interface command prevents routing updates and hello packets from traveling through an interface.

5. **Refer to the exhibit. After the configuration shown is applied on router R1, the exhibited status message is displayed. Router R1 is unable to form a neighbor relationship with R2 on**

the serial 0/1/0 interface. What is the most likely cause of this problem?

```
R1# show running-config
<output omitted>
!
interface Serial0/0/0
 bandwidth 1024
 ip address 192.168.254.10 255.255.255.252
 clock rate 64000
!
interface Serial0/0/1
 bandwidth 1024
 ip address 209.165.200.225 255.255.255.224
 clock rate 64000
!
interface Serial0/1/0
 ip address 192.168.254.5 255.255.255.252
 ip hello-interval eigrp 55 80
 clock rate 64000
!
router eigrp 55
 passive-interface Serial0/0/1
 network 192.168.254.0
 network 172.21.0.0
 no auto-summary
!
```

```
R1# debug eigrp packets

EIGRP: Sending HELLO on Serial0/1/0
  AS 55, Flags 0x0, Seq 21/0 idbQ 0/0
iidbQ un/rely 0/0

EIGRP: Received HELLO on Serial0/1/0 nbr
192.168.254.9
  AS 55, Flags 0x0, Seq 54/0 idbQ 0/0

EIGRP: recv packet with wrong subnet on
Serial0/1/0
```

- The network statement used for EIGRP 55 does not enable EIGRP on interface serial 0/1/0.
- The hello interval has been altered on serial 0/1/0 and is preventing a neighbor relationship from forming.
- **The IPv4 address configured on the neighbor that is connected to R1 serial 0/1/0 is incorrect.***
- The networks that are configured on serial 0/0/0 and serial 0/1/0 of router R1 are overlapping.
- The passive-interface command should have been issued on serial 0/1/0.

According to the status message, serial 0/1/0 is receiving EIGRP packets coming from the IPv4 address 192.168.254.9. This IPv4 address is on a different subnet in contrast to the IP address configured on serial 0/1/0 of R1. The passive-interface command would have prevented any neighbor relationship from forming if the command was issued on serial 0/1/0. Changing the hello interval on one router and not another will not cause an EIGRP neighbor relationship to fail.

6. **By default, how many equal-cost routes to the same destination network will EIGRP install in the routing table?**
   - 2
   - **4***
   - 6
   - 8

   For load balancing, EIGRP will by default install up to four equal-cost paths to the same destination network in the routing table.

7. **Open the PT Activity. Perform the tasks in the activity instructions and then answer the question. R1 and R2 could not establish an EIGRP adjacency. What is the problem?**
   - EIGRP is down on R2.

- R1 Fa0/0 link local address is wrong.
- **EIGRP is down on R1.***
- R1 Fa0/0 is not configured to send hello packets.
- R1 Fa0/0 and R2 Fa0/0 are on different networks.

The IPv6 EIGRP process is down on R1 as can be seen:
R1# show ipv6 eigrp interfaces
IPv6-EIGRP interfaces for process 1
% EIGRP 1 is in SHUTDOWN
R1#
The administrator must issue the no shutdown command on the IPv6 router configuration mode.

8. **Refer to the exhibit. All networks are active in the same EIGRP routing domain. When the auto-summary command is issued on R3, which two summary networks will be calculated on R3? (Choose two.)**
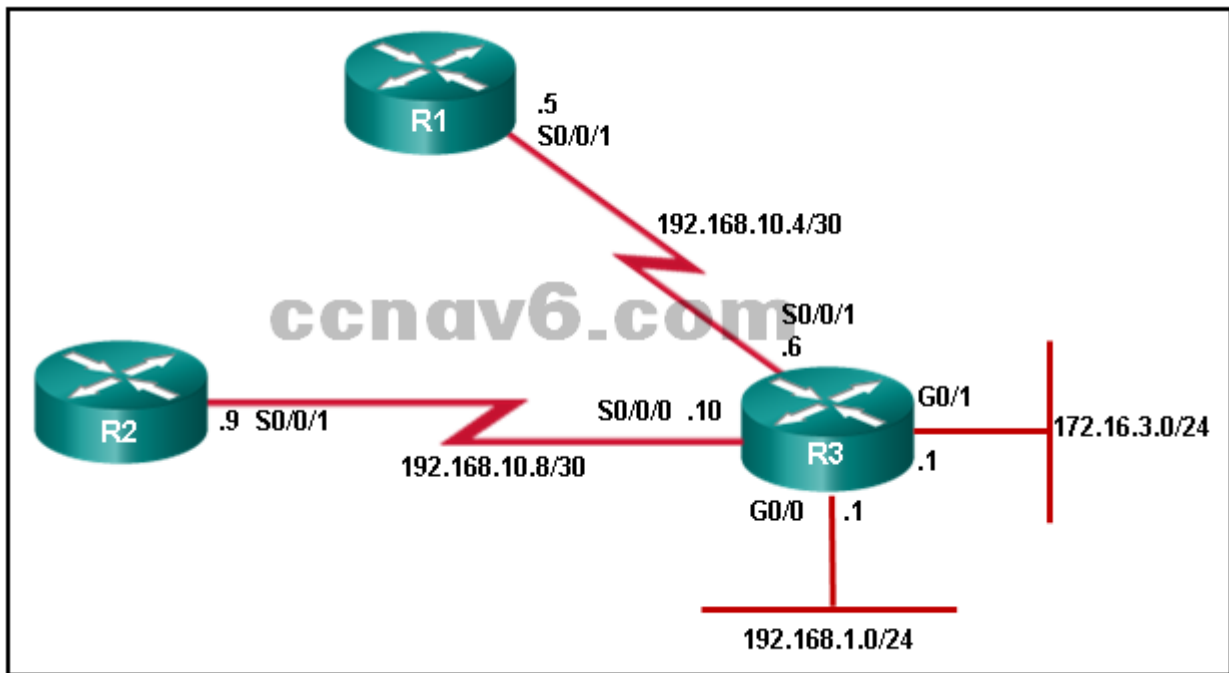
- **172.16.0.0/16***
- 172.16.3.0/24
- 192.168.1.0/30
- 192.168.10.0/30
- **192.168.10.0/24***

As a result of implementing EIGRP automatic summarization, router R3 uses a classful network addressing scheme to group networks together based on their classful network mask. 192.168.10.4/30 and 192.168.10.8/30 are shortened to 192.168.10.0/24 and 172.16.3.0/24 is summarized to 172.16.0.0/16. 192.168.1.0/24 is already using its classful mask and is not summarized.

9. **Which three statements are advantages of using automatic summarization? (Choose three.)**
- It maximizes the number of routes in the routing table.
- **It decreases the number of entries in the routing table.***

- **It reduces the frequency of routing updates.***
- **It ensures that traffic for multiple subnets uses one path through the internetwork.***
- It improves reachability in discontiguous networks.
- It increases the size of routing updates.

Automatic summarization minimizes the number of routes in the routing table. It reduces the frequency of routing updates. A disadvantage of automatic summarization is that it can create reachability problems in discontiguous networks.

10. **Refer to the exhibit. Which two conclusions can be drawn from the exhibited configuration? (Choose two.)**

```
Corp(config)# router eigrp 150
Corp(config-router)# network 172.16.15.0 0.0.0.15
Corp(config-router)# network 192.168.10.0 0.0.0.31
Corp(config-router)# variance 3
```

- **The configuration supports unequal-cost load balancing.***
- The configuration supports equal-cost load balancing.
- **Any EIGRP-learned route with a metric less than 3 times the successor metric will be installed in the local routing table.***
- Any EIGRP-learned route with a metric equal to 3 times the successor metric will be installed in the local routing table.
- The network statements require subnet masks to prevent autosummarization.

The configuration supports unequal-cost load balancing as shown by the variance value of 3. The default variance for EIGRP is 1. The no auto-summary command is needed to prevent autosummarization.

11. **What is the administrative distance of externally learned EIGRP routes?**
- **170***
- 120
- 110
- 90

There are multiple administrative distances assigned to EIGRP routes. An administrative distance of 170 is used for external EIGRP routes, which could be routes learned from another routing protocol and redistributed into EIGRP.

12. **Which routing protocol supports unequal-cost load balancing on Cisco routers?**
- OSPF
- IS-IS
- RIPv2
- **EIGRP***

EIGRP is unique because of its support of unequal-cost load balancing.

13. **Refer to the exhibit. Which two routes will be advertised to the router ISP if autosummarization is disabled? (Choose two.)**
- **10.1.2.0/24***
- 10.1.0.0/16
- 10.1.4.0/28
- **10.1.4.0/30***

- 10.1.4.0/24
  If the no auto-summary command was issued disabling the autosummarization, all subnetworks will be advertised, without summarization.

14. **Which two steps must be taken in order to send a default route to other EIGRP routers? (Choose two.)**
    - Configure a loopback address.
    - **Configure a default route.***
    - Configure a router ID.
    - Ensure automatic summarization is disabled.
    - **Redistribute the default route.***

    Any router can have a default route (quad zero route) configured. In order to propagate a default route down to other EIGRP routers, the redistribute static command is used to include the configured default route in EIGRP updates.

15. **Refer to the exhibit. Remote users are experiencing connectivity problems when attempting to reach hosts in the 172.21.100.0 /24 network. Using the output in the exhibit, what is the most likely cause of the connectivity problem?**

```
R3# show running-config
<output omitted>
!
interface GigabitEthernet0/0
 ip address 172.20.100.254 255.255.255.0
!
interface GigabitEthernet0/1
 ip address 172.21.100.254 255.255.255.0
 ip hello-interval eigrp 55 80
!
interface Serial0/0/0
 bandwidth 1024
 ip address 192.168.254.9 255.255.255.252
!
interface Serial0/0/1
 bandwidth 64
 ip address 192.168.254.13 255.255.255.252
!
router eigrp 55
 passive-interface GigabitEthernet0/0
 network 172.20.0.0
 network 192.168.254.0
 no auto-summary
```

    - The hello timer has been modified on interface GigabitEthernet 0/1 of R3 and not on the neighbor, causing a neighbor adjacency not to form.
    - The GigabitEthernet interfaces are not limiting the flow of EIGRP message information and are being flooded with EIGRP traffic.
    - The passive-interface command is preventing neighbor relationships on interface GigabitEthernet 0/0.
    - **The GigabitEthernet 0/1 interface is not participating in the EIGRP process.***

    When enabling EIGRP, the network command must be applied to the classful network address of the interface or to a subnet with the appropriate wildcard mask. The network

172.20.0.0 will only activate interfaces in that network. The wildcard mask 0.1.255.255 must be issued to support both 172.20.0.0 and 172.21.0.0 in a single network statement.
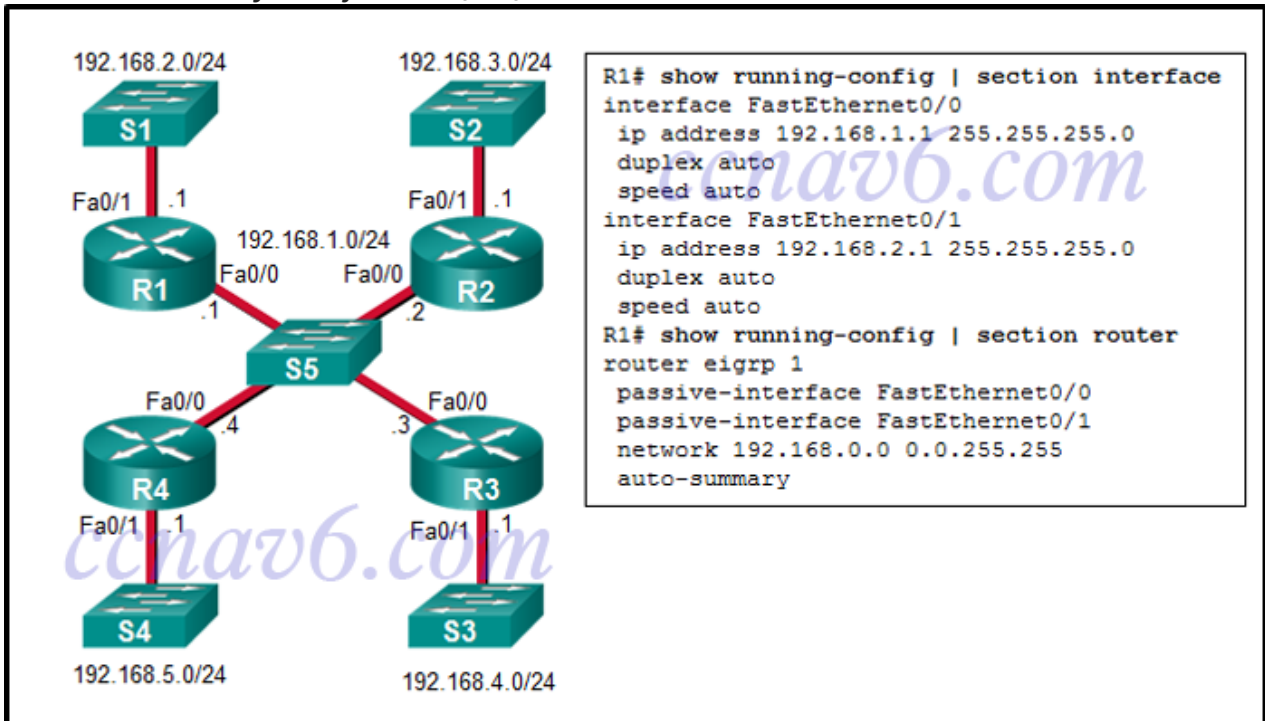
16. **Refer to the exhibit. An administrator wants EIGRP on Router1 to load balance traffic to network 2001:db8:11:10::/64 across two interfaces. Currently traffic is using only interface GigabitEthernet0/1. A second route, not in the routing table, is available with a metric of 264000. What value is needed in the variance command to make EIGRP put the second route into the routing table?**

```
Router1# show ipv6 route
IPv6 Routing Table - default - 11 entries
Codes: C - Connected, L - Local, S - Static, U - Per-user
Static route
       B - BGP, R - RIP, I1 - ISIS L1, I2 - ISIS L2
       IA - ISIS interarea, IS - ISIS summary, D - EIGRP,
EX - EIGRP external
       ND - Neighbor Discovery
       O - OSPF Intra, OI - OSPF Inter, OE1 - OSPF ext 1,
OE2 - OSPF ext 2
       ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
D    2001:DB8:11::100/128 [90/130816]
      via FE80::1, GigabitEthernet0/1
D    2001:DB8:11:10::/64 [90/25000]
      via FE80::1, GigabitEthernet0/1
C    2001:DB8:11:20::/64 [0/0]
      via GigabitEthernet0/1, directly connected
```

- 4
- 10
- 1
- **11***

A variance of 11 is needed to load balance across the second route. The metric of the existing successor route is 25000. The metric of the second route is 264000. The first metric needs to be multiplied by 11, which is 275000, in order for the route to be put into the routing table.

17. **Refer to the exhibit. Considering that R2, R3, and R4 are correctly configured, why did R1 not establish an adjacency with R2, R3, and R4?**


```
R1# show running-config | section interface
interface FastEthernet0/0
  ip address 192.168.1.1 255.255.255.0
  duplex auto
  speed auto
interface FastEthernet0/1
  ip address 192.168.2.1 255.255.255.0
  duplex auto
  speed auto
R1# show running-config | section router
router eigrp 1
  passive-interface FastEthernet0/0
  passive-interface FastEthernet0/1
  network 192.168.0.0 0.0.255.255
  auto-summary
```

- **because the Fa0/0 interface of R1 is declared as passive for EIGRP***
- because there is no network command for the network 192.168.1.0/24 on R1
- because the IPv4 address on Fa0/0 interface of R1 is incorrect
- because the automatic summarization is enabled on R1

The missing routes are the result of there not being an EIGRP adjacency between R1 and R2, R3, and R4.To establish adjacency, a router must send and receive hello packets over an interface to and from its neighbors. The interface Fa0/ of the router R1 is declared as passive, so R1 will not send hello packets over its interface Fa0/0.

18. **When a Cisco router is configured with a fast-switching, how are packets distributed over equal-cost paths?**
- on a per-packet basis
- on a per-interface basis
- on a per-path-load basis
- **on a per-destination basis***

In Cisco IOS, when packets are fast-switched, load balancing over equal-cost paths occurs on a per-destination basis.

19. **What is the default maximum amount of bandwidth that can be used for exchanging EIGRP messages on an EIGRP-configured interface?**
- **50%***
- 10%
- 100%
- 75%

By default, EIGRP uses up to 50% of the configured bandwidth of an interface for EIGRP control information. On a 128 kbps link, this would mean that up to 64 kbps is used for EIGRP information.

20. **Fill in the blank. Do not use abbreviations.**
The command to propagate the default route from the router Border to the rest of the EIGRP domain is Border(config-router)# _____
Correct Answer: redistribute static*
One way to propagate the default route to the rest of the EIGRP domain is to use the command redistribute static in the router eigrp (config-router)# mode.

21. **Refer to the exhibit. Which statement is supported by the output?**

```
ATL# show ip route                 ccnav6.com
<output omitted>

Gateway of last resort is 192.168.10.9 to network 0.0.0.0
D    172.16.0.0/16 [90/2170112] via 192.168.10.5, 02:05:38, Serial0/0/0
     192.168.1.0/24 is variably subnetted, 2 subnets, 2 masks
C       192.168.1.0/24 is directly connected, GigabitEthernet0/0
L       192.168.1.1/32 is directly connected, GigabitEthernet0/0
     192.168.10.0/24 is variably subnetted, 5 subnets, 3 masks
D       192.168.10.0/24 is a summary, 02:05:38, Null0
C       192.168.10.4/30 is directly connected, Serial0/0/0
L       192.168.10.6/32 is directly connected, Serial0/0/0
C       192.168.10.8/30 is directly connected, Serial0/0/1
L       192.168.10.10/32 is directly connected, Serial0/0/1
D    209.165.200.0/24 [90/3523840] via 192.168.10.9, 02:05:39,
Serial0/0/1
D*EX 0.0.0.0/0 [170/8131840] via 192.168.10.9, 02:05:39, Serial0/0/1
```

- **A default route is being learned through an external process.***
- The route to 192.168.1.1 represents the configuration of a loopback interface.
- A static default route has been manually configured on this router.
- Summarization of routes has been manually configured.

Viewing the exhibit reveals that a default route is being learned through an external process on serial interface S0/0/1.

22. **Which command can be issued on a router to verify that automatic summarization is enabled?**
- **show ip protocols***
- show ip eigrp neighbors
- show ip eigrp interfaces
- show ip interface brief

To verify if automatic summarization is being performed on a router, issue the show ip protocols command. The show ip eigrp interfaces command shows which interfaces are enabled for EIGRP. The show ip interface brief command is used to verify that the status and protocol are both up for an interface connected to a router. The show ip eigrp neighbors command on a router verifies the establishment of EIGRP neighbor adjacencies with other routers.

23. **Assuming that EIGRP is enabled on both routers and automatic summarization is enabled, what must be configured to ensure that R1 will be able to reach the 2.2.2.0/24 network?**
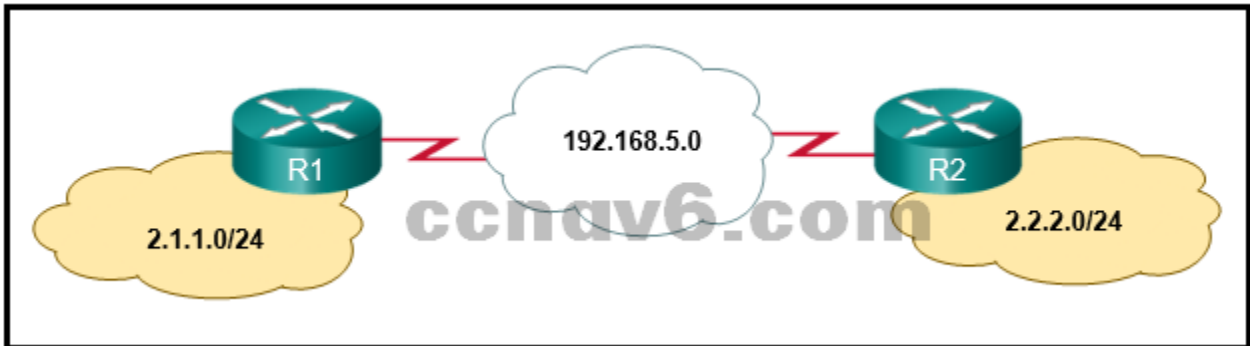
- Use the command ip address-summary to ensure that R1 recognizes the 2.2.2.0 network.
- **Use the command no auto-summary to disable automatic summarization.***
- EIGRP does not support VLSM and therefore cannot be used with discontiguous networks.
- EIGRP supports VLSM and will automatically recognize the 2.2.2.0 network.

The networks 2.1.1.0/24 and 2.2.2.0/24 are two subnets of the Class A network 2.0.0.0/8. When automatic summarization is enabled, EIGRP will summarize and advertise networks at the major network boundary. In this case, both routers will advertise the network 2.0.0.0/8, which will cause failure of connectivity.

24. **When a Cisco router is configured with fast-switching, how are packets distributed over equal-cost paths?**
- on a per-packet basis.
- **on a per-destination basis***
- on a per-interface basis
- on a per-path-load basis

In Cisco IOS, when packets are fast-switched, load balancing over equal-cost paths occurs on a per-destination basis.

25. **Which verification command would identify the specific interfaces on a router that were configured with the passive-interface command?**
- **show ip protocols***
- show ip route eigrp
- show ip eigrp neighbors
- show ip interface brief

The show ip protocols command will identify interfaces that are configured as passive.

26. **What is the administrative distance of a static route that has been redistributed into EIGRP?**
- 5
- 20
- 90
- **170***

Whereas internal EIGRP routes have an administrative distance of 90, redistributed routes, including redistributed static routes, have an administrative distance of 170.

27. **Two routers, R1 and R2, share a 64 kb/s link. An administrator wants to limit the bandwidth used by EIGRP between these two routers to 48 kb/s. Which command is used on both routers to configure the new bandwidth setting?**
    ▪ ip bandwidth-percent eigrp 64 48
    ▪ ip bandwidth-percent eigrp 75 100
    ▪ **ip bandwidth-percent eigrp 100 75***
    ▪ ip bandwidth-percent eigrp 100 48
    ▪ ip bandwidth-percent eigrp 100 64

    If two routers share a link of 64 kb/s and the administrator wants to limit the bandwidth used by EIGRP between these two routers to 48 kb/s, then this value corresponds to 75% of the link bandwidth. So, the command to be issued on both routers is ip bandwidth-percent eigrp 100 75.

28. **Refer to the exhibit. Router R3 is receiving multiple routes through the EIGRP routing protocol. Which statement is true about the implementation of summarization in this network?**

```
R3# show ip route

<output omitted>

Gateway of last resort is not set

      172.21.0.0/16 is variably subnetted, 4 subnets, 2 masks
D        172.21.10.0/24 [90/3012096] via 192.168.254.10, 00:02:47, Serial0/0/0
D        172.21.20.0/24 [90/3524096] via 192.168.254.10, 00:01:22, Serial0/0/0
C        172.21.100.0/24 is directly connected, GigabitEthernet0/0
L        172.21.100.254/32 is directly connected, GigabitEthernet0/0
      192.168.254.0/24 is variably subnetted, 5 subnets, 2 masks
D        192.168.254.4/30 [90/3523840] via 192.168.254.10, 00:02:32, Serial0/0/0
C        192.168.254.8/30 is directly connected, Serial0/0/0
L        192.168.254.9/32 is directly connected, Serial0/0/0
C        192.168.254.12/30 is directly connected, Serial0/0/1
L        192.168.254.13/32 is directly connected, Serial0/0/1
```

    ▪ Automatic summarization has been enabled only for the 172.21.100.0/24 network.
    ▪ **Automatic summarization is disabled on R3.***
    ▪ Automatic summarization is enabled on neighboring routers.
    ▪ Automatic summarization is disabled on a per-interface basis.

    Automatic summarization is disabled on R3, so no routes to the null0 interface have been created for networks 172.21.0.0/16 and 192168.254.0/24. If automatic summarization had been enabled on R3 neighbors, the networks that were received by R3 would have been summarized classful statements.

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29. **Which protocol is used by EIGRP to send hello packets?**
    ▪ TCP
    ▪ UDP
    ▪ **RTP***
    ▪ IP

30. **When an EIGRP-enabled router uses a password to accept routes from other EIGRP-enabled routers, which mechanism is used?**
    - bounded updates
    - partial updates
    - **EIGRP authentication***
    - Diffusing Update Algorithm
    - Reliable Transport Protocol

31. **What is the purpose of using protocol-dependent modules in EIGRP?**
    - to describe different routing processes
    - to identify different application layer protocols
    - to use different transport protocols for different packets
    - **to accommodate routing of different network layer protocols***

32. **If all router Ethernet interfaces in an EIGRP network are configured with the default EIGRP timers, how long will a router wait by default to receive an EIGRP packet from its neighbor before declaring the neighbor unreachable?**
    - 10 seconds
    - **15 seconds***
    - 20 seconds
    - 30 seconds

33. **Which statement describes a characteristic of the delivery of EIGRP update packets?**
    - EIGRP uses UDP to send all update packets.
    - EIGRP sends all update packets via unicast.
    - EIGRP sends all update packets via multicast.
    - **EIGRP uses a reliable delivery protocol to send all update packets.***

34. **Which destination MAC address is used when a multicast EIGRP packet is encapsulated into an Ethernet frame?**
    - 01-00-5E-00-00-09
    - 01-00-5E-00-00-10
    - **01-00-5E-00-00-0A***
    - 01-00-5E-00-00-0B

35. **Why would a network administrator use a wildcard mask in the network command when configuring a router to use EIGRP?**
    - to lower the router overhead
    - to send a manual summarization
    - **to exclude some interfaces from the EIGRP process***
    - to subnet at the time of the configuration

36. **Refer to the exhibit. Which command should be used to configure EIGRP to only advertise the network that is attached to the gigabit Ethernet 0/1 interface?**

```
R1> enable
R1# config terminal
R1(config)# interface gigabitEthernet 0/0
R1(config-if)# ip address 172.16.23.254 255.255.255.128
R1(config-if)# no shutdown
R1(config-if)# exit
R1(config)# interface gigabitEthernet 0/1
R1(config-if)# ip address 172.16.23.126 255.255.255.192
R1(config-if)# no shutdown
```

- **network 172.16.23.64 0.0.0.63***
- network 172.16.23.0 255.255.255.192
- network 172.16.23.64 0.0.0.127
- network 172.16.23.0 255.255.255.128

37. **Which EIGRP route would have the preferred administrative distance?**
    - **a summary route***
    - an internal route
    - an external route that is redistributed from RIP
    - an external route that is redistributed from OSPF

38. **Where are EIGRP successor routes stored?**
    - only in the routing table
    - only in the neighbor table
    - **in the routing table and the topology table***
    - in the routing table and the neighbor table

39. **Which table is used by EIGRP to store all routes that are learned from EIGRP neighbors?**
    - the routing table
    - the neighbor table
    - **the topology table***
    - the adjacency table

40. **How do EIGRP routers establish and maintain neighbor relationships?**
    - by exchanging neighbor tables with directly attached routers
    - by comparing known routes to information received in updates
    - **by exchanging hello packets with neighboring routers***
    - by dynamically learning new routes from neighbors
    - by exchanging routing tables with directly attached routers

41. **Which command or commands must be entered on a serial interface of a Cisco router to restore the bandwidth to the default value of that specific router interface?**
    - bandwidth 1500
    - shutdown
      no shutdown
    - copy running-config startup-config
      reload
    - **no bandwidth***

42. **Which command is used to display the bandwidth of an interface on an EIGRP-enabled router?**
    - show ip route
    - **show interfaces***
    - show ip protocols
    - show ip interface brief

43. **A new network administrator has been asked to verify the metrics that are used by EIGRP on a Cisco device. Which two EIGRP metrics are measured by using static values on a Cisco device? (Choose two.)**
    - **bandwidth ***
    - load
    - reliability
    - **delay***

- MTU
44. **Which three metric weights are set to zero by default when costs in EIGRP are being calculated? (Choose three.)**
    - k1
    - **k2***
    - k3
    - **k4 ***
    - **k5***
    - k6
45. **Refer to the exhibit. R2 has two possible paths to the 192.168.10.4 network. What would make the alternate route meet the feasibility condition?**

```
R2# show ip eigrp topology
EIGRP-IPv4 Topology Table for AS(1)/ID(2.2.2.2)
Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - reply Status, s - sia Status

<output omitted>

P 192.168.10.4/30, 1 successors, FD is 3523840
         via 192.168.10.10 (3523840/2169856), Serial0/0/1
         via 172.16.3.1 (41024000/2169856), Serial0/0/0

<output omitted>
```

- **a reported distance less than 3523840***
- a reported distance greater than 41024000
- a feasible distance greater than 41024000
- an administrative distance less than 170
46. **What is indicated when an EIGRP route is in the passive state?**
    - The route has the highest path cost of all routes to that destination network.
    - The route must be confirmed by neighboring routers before it is put in the active state.
    - The route is a feasible successor and will be used if the active route fails.
    - There is no activity on the route to that network.
    - **The route is viable and can be used to forward traffic.***

47. **Refer to the exhibit. Which two networks contain feasible successors? (Choose two.)**

```
R4#show ip eigrp topology all-links
IP-EIGRP Topology Table for AS 54

Codes: P - Passive, A - Active, U - Update, Q - Query, R -Reply,
       r - Reply status

P 192.168.41.0/25, 1 successors, FD is 128256
         via Connected, Loopback0
P 10.44.103.252/30, 1 successors, FD is 2816
         via Connected, GigabitEthernet0/0
P 10.44.104.252/30, 1 successors, FD is 25600256
         via Connected, GigabitEthernet0/1
P 192.168.51.0/25, 1 successors, FD is 130816
         via 10.44.103.253 (130816/128256), GigabitEthernet0/0
         via 10.44.104.253 (25600512/261899), GigabitEthernet0/1
P 10.44.101.252/30, 1 successors, FD is 3072
         via 10.44.103.253 (3072/2816), GigabitEthernet0/0
P 10.44.100.252/30, 1 successors, FD is 3072
         via 10.44.103.253 (3072/2816), GigabitEthernet0/0
         via 10.44.104.253 (25600512/2816), GigabitEthernet0/1
P 192.168.71.0/25, 1 successors, FD is 131072
         via 10.44.103.253 (131072/130816), GigabitEthernet0/0
         via 10.44.104.253 (25728256/128256), GigabitEthernet0/1
```

- **192.168.71.0***
- 192.168.51.0
- **10.44.100.252***
- 10.44.104.253
- 10.44.101.252

48. **Fill in the blank.**

In an EIGRP topology table, a route that is in a/an **active** state will cause the Diffusing Update Algorithm to send EIGRP queries that ask other routers for a path to this network.

49. **Which two EIGRP packet types are sent with unreliable delivery? (Choose two.)**

- update
- query
- **hello***
- reply
- **acknowledgment***

50. **What is identified within the opcode of an EIGRP packet header?**

- **the EIGRP message type that is being sent or received from a neighbor***
- the EIGRP autonomous system metrics
- the EIGRP hold timer agreed upon with a neighbor
- the EIGRP sum of delays from source to destination

51. **An administrator issues the router eigrp 100 command on a router. What is the number 100 used for?**

- **as the autonomous system number ***

- as the number of neighbors supported by this router
- as the length of time this router will wait to hear hello packets from a neighbor
- as the maximum bandwidth of the fastest interface on the router

52. **What information does EIGRP maintain within the routing table?**
   - both successors and feasible successors
   - only feasible successors
   - adjacent neighbors
   - all routes known to the router
   - **only successors***

53. **Refer to the exhibit. R3 has two possible paths to the 172.16.99.0 network. What is the reported distance of the feasible successor route?**

```
R3# show ip eigrp topology
IP-EIGRP Topology Table for AS 5
Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - Reply status, s - sia Status

<output omitted>

P 172.16.99.0/24, 1 successors, FD is 2340608
          via 10.0.0.9 (2340608/2169856), Serial0/1/0
          via 10.0.0.5 (10512128/2816), Serial0/1/1

<output omitted>
```

   - 2340608
   - 2169856
   - 10512128
   - **2816***

54. **What is the multicast address used by an EIGRP-enabled router operating with IPv6?**
   - FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
   - **FF02::A***
   - FF02::B
   - FF02::1

55. **Which configuration is necessary to ensure successful operation of EIGRP for IPv6?**
   - The eigrp router-id command requires an IPv6 address within the router configuration mode.
   - The network command is required within the router configuration mode.
   - **The no shutdown command is required within the router configuration mode.***
   - The router eigrp autonomous-system command is required within the router configuration mode.

56. **Fill in the Blank. Use the abbreviation.**
   EIGRP uses the **RTP** protocol to deliver EIGRP packets to neighbors.

57. **Order the precedence in which an EIGRP router would choose the router ID. (Not all options are used.)**

Order the precedence in which an EIGRP router would choose the router ID. (Not all options are used.)

first		eigrp router-id command
second	ccnav6.com	highest priority on active physical interfaces
third		highest IPv4 address on active physical interfaces
		highest IPv4 address on loopback interfaces

Place the options in the following order:

first -> eigrp router-id command

– not scored –

third -> highest IPv4 address on active physical interfaces

second -> highest IPv4 address on loopback interfaces

58. **Match the correct version of EIGRP with the EIGRP features. (Not all options are used.)**

Match the correct version of EIGRP with the EIGRP features. (Not all options are used.)

EIGRP for IPv4 only		uses Dijkstra's algorithm
EIGRP for IPv6 only		source address for EIGRP messages is a routable address
both EIGRP for IPv4 and EIGRP for IPv6	ccnav6.com	uses a 32-bit router ID
		source address for EIGRP messages is a link-local address

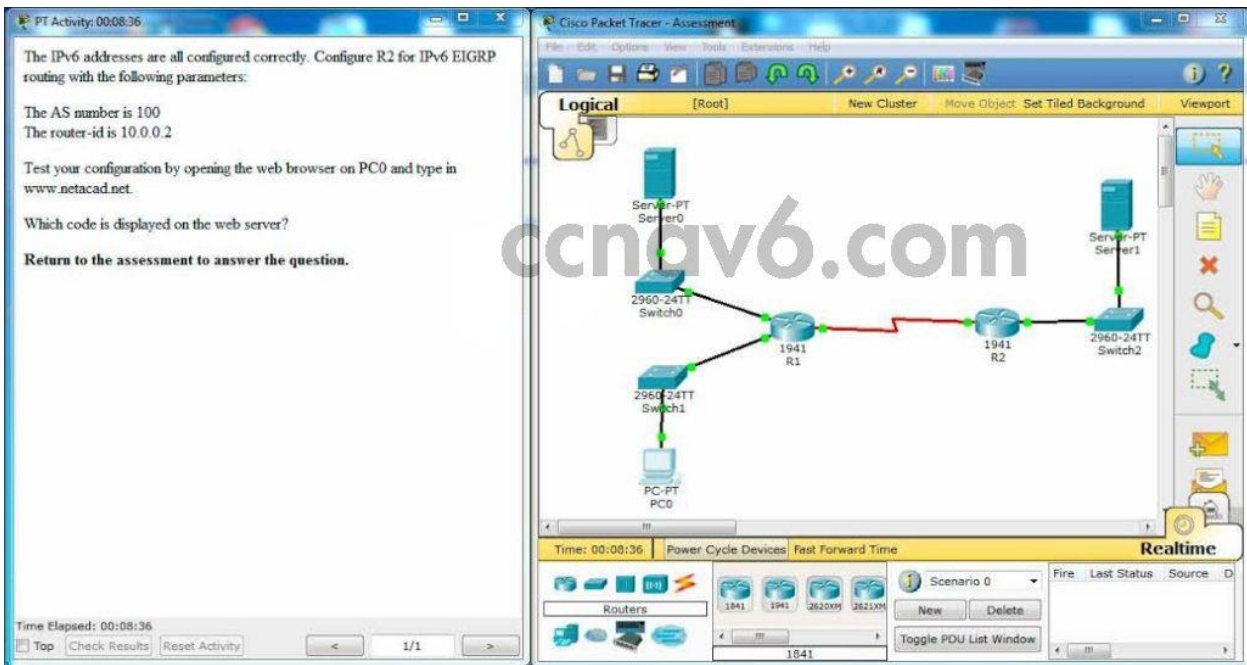**Place the options in the following order:**

– not scored –

EIGRP for IPv4 only -> source address for EIGRP messages is a routable address

both EIGRP for IPv4 and EIGRP for IPv6 -> uses a 32-bit router ID

EIGRP for IPv6 only -> source address for EIGRP messages is a link-local address

59. **Launch PT – Hide and Save PT**

Open the PT Activity. Perform the tasks in the activity instructions and then answer the question. Which code is displayed on the web server?

- Done
- **Complete***
- EIGRP
- IPv6EIGRP

60. **Refer to the exhibit. R3 has two possible paths to the 172.16.99.0 network. What is the reported distance of the feasible successor route?**

```
R3# show ip eigrp topology
IP-EIGRP Topology Table for AS 5
Codes: P - Passive, A - Active, U - Update, Q - Query, R - Reply,
       r - Reply status, s - sia Status

<output omitted>

P 172.16.99.0/24, 1 successors, FD is 2340608
          via 10.0.0.9 (2340608/2169856), Serial0/1/0
          via 10.0.0.5 (10512128/2816), Serial0/1/1

<output omitted>
```

- 10512128
- 2169856
- 2340608
- **2816***

61. **Which two EIGRP packet types are sent with reliable delivery? (Choose two.)**

- update query
- **hello***
- **acknowledgment***
- reply