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[CCNA 3 \(v5.0.3 + v6.0\) Chapter 5 Exam Answers Full](#)

How to find: Press "Ctrl + F" in the browser and fill in whatever wording is in the question to find that question/answer.

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1. **Which routing protocol is designed to use areas to scale large hierarchical networks?**

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

OSPF works best for a large hierarchical network, because OSPF supports a multiarea design, which provides a much better scaling capability compared with EIGRP

2. **Which routing protocol uses link-state information to build a map of the topology for computing the best path to each destination network?**

- RIP
- RIPng
- **OSPF***
- EIGRP

OSPF is a link-state routing protocol and as such it uses a link-state database to construct a topology map of the network to calculate the best path to destination networks. RIP, RIPng, and EIGRP are distance vector routing protocols.

3. **After a network topology change occurs, which distance vector routing protocol can send an update message directly to a single neighboring router without unnecessarily notifying other routers?**

- IS-IS
- RIPv1
- RIPv2
- **EIGRP***
- OSPF

RIPv2 and EIGRP support updating neighboring routers via the use of multicasting. EIGRP is the only distance vector protocol that can support updating a specific neighbor by using unicast. OSPF and ISIS are link state protocols.

4. **Which dynamic routing protocol was developed as an exterior gateway protocol to interconnect different Internet providers?**

- EIGRP
- RIP
- OSPF

- **BGP ***

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

5. A network administrator is researching routing protocols for implementation in a critical network infrastructure. Which protocol uses the DUAL algorithm to provide almost instantaneous convergence during a route failover?

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

EIGRP is commonly the fastest IGP to converge because it maintains alternate routes. A switchover to an alternate route is immediate and does not involve interaction with other routers.

6. Which routing protocol sends a routing update to neighboring routers every 30 seconds?

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

Regardless of topology changes, RIP sends a periodic update to all neighboring routers every 30 seconds.

7. Which statement is an incorrect description of the OSPF protocol?

- Multiarea OSPF helps reduce the size of the link-state database.
- **When compared with distance vector routing protocols, OSPF utilizes less memory and less CPU processing power.***
- OSPF builds a topological map of the network.
- OSPF has fast convergence.

Link-state protocols require more memory to create and maintain the link-state database.

8. What happens when two link-state routers stop receiving hello packets from neighbors?

- They create a default route to the adjacent router.
- They continue to operate as normal and are able to exchange packets.
- **They consider the neighbor to be unreachable and the adjacency is broken.***
- They will flood their database tables to each other.

Hello packets serve a keepalive function to monitor the state of an adjacent router.

9. What are two features of the OSPF routing protocol? (Choose two.)

- has an administrative distance of 100 used primarily as an EGP
- **uses Dijkstra's algorithm to build the SPF tree***
- automatically summarizes networks at the classful boundaries
- **calculates its metric using bandwidth***

Characteristics of OSPF include the following:

Interior gateway protocol

Link-state

Classless
Cost metric based on bandwidth
Dijkstra algorithm
Builds topological map
Event-driven updates
Hierarchical design
Requires additional memory, CPU processing, and more initial bandwidth than other protocols

10. What is maintained within an EIGRP topology table?

- the hop count to all networks
- **all routes received from neighbors***
- the area ID of all neighbors
- the state of all links on the network

The EIGRP topology table maintains all the routes received from neighbors, not just the best paths. DUAL can use backup routes from the topology table to provide instantaneous route failover in the EIGRP routing table.

11. What is the difference between interior and exterior routing protocols?

- Interior routing protocols are used to route on the Internet. Exterior routing protocols are used inside organizations.
- Exterior routing protocols are used only by large ISPs. Interior routing protocols are used by small ISPs.
- Exterior routing protocols are used to administer a single autonomous system. Interior routing protocols are used to administer several domains.
- **Interior routing protocols are used to communicate within a single autonomous system. Exterior routing protocols are used to communicate between multiple autonomous systems.***

Interior gateway protocols (IGPs) are used for routing within an organization having a common administration or autonomous system (AS). Exterior gateway protocols (EGPs) are used by service providers and sometimes by large companies.

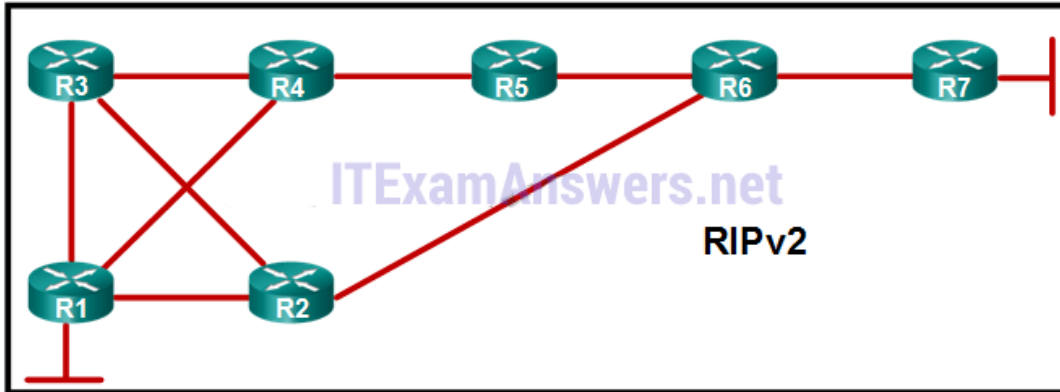
12. An OSPF enabled router is processing learned routes to select best paths to reach a destination network. What is the OSPF algorithm evaluating as the metric?

- The amount of traffic and probability of failure of links.
- The amount of packet delivery time and slowest bandwidth.
- The number of hops along the routing path.
- **The cumulative bandwidth that is used along the routing path.***

The OSPF routing protocol uses the cumulative bandwidth as the metric for route computations.

13. Refer to the exhibit. A network administrator has configured RIPv2 in the given topology. Which path would a packet take to get from the LAN that is connected to

R1 to the LAN that is connected to R7?



- R1-R3-R4-R5-R6-R7
- R1-R4-R5-R6-R7
- **R1-R2-R6-R7***
- R1-R3-R2-R6-R7

RIP utilizes hop count to calculate the best path from source to destination.

14. Which two components of an LSP enable an OSPF router to determine if the LSP that is received contains newer information than what is in the current OSPF router link-state database? (Choose two.)

- hellosquery
- **aging information***
- **sequence numbers***
- acknowledgements

Information such as sequence numbers and aging information is included in an LSP to help manage the flooding process. This information can assist a router in determining if it has already received the LSP from another router or if the LSP has newer information than what is already contained in the link-state database.

15. What are two purposes of dynamic routing protocols? (Choose two.)

- **discover remote networks***
- provide network security
- reduce network traffic
- provide a default route to network hosts
- **select best path to destination networks***

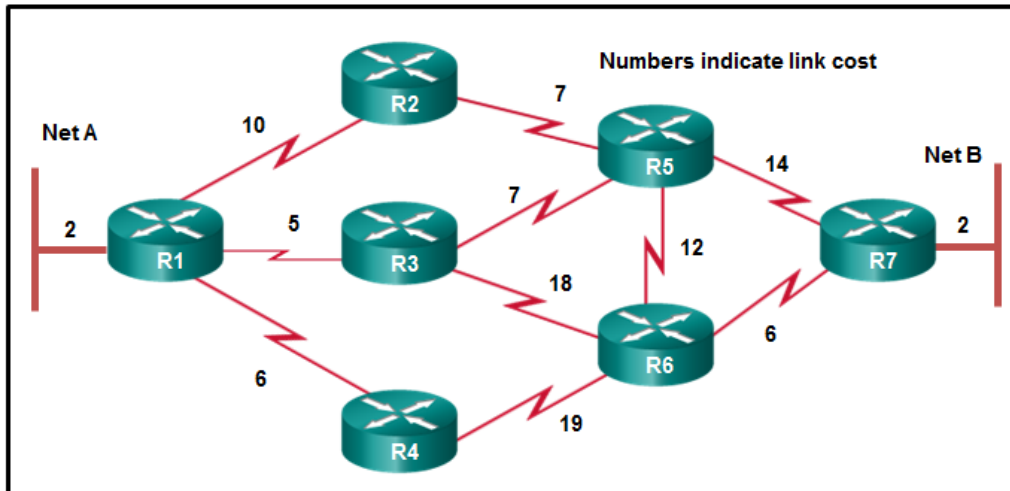
The purpose of dynamic routing protocols include the following:
Discover remote networks
Maintain up-to-date routing information
Choose the best path to a destination network
Find a new best path if the current path is not available

16. What is the first step taken by a newly configured OSPF router in the process of reaching a state of convergence?

- It floods LSP packets to neighboring routers.
- It builds the topological database.
- **It learns about directly connected links in an active state.***
- It exchanges hello messages with a neighboring router.

Before OSPF can form a neighbor adjacency and start the Hello protocol, it detects which interfaces are in an up and active state.

17. Refer to the exhibit. OSPF is used in the network. Which path will be chosen by OSPF to send data packets from Net A to Net B?



- R1, R2, R5, R7
- R1, R4, R6, R7
- **R1, R3, R5, R7***
- R1, R3, R5, R6, R7
- R1, R3, R6, R7

OSPF uses the shortest path first algorithm to select the best path to forward packets. Each path is labeled with a value for cost and this algorithm accumulates costs along each path, from source to destination. The path chosen from Net A to Net B is R1-R3-R5-R7, that is equal to $5+7+14+2=28$, the shortest cost.

18. In the context of routing protocols, what is a definition for time to convergence?

- a measure of protocol configuration complexity
- the amount of time a network administrator needs to configure a routing protocol in a small- to medium-sized network
- **the amount of time for the routing tables to achieve a consistent state after a topology change***
- the capability to transport data, video, and voice over the same media

Time to convergence defines how quickly the routers in the network topology share routing information and reach a state of consistent knowledge.

19. Which two requirements are necessary before a router configured with a link-state routing protocol can build and send its link-state packets? (Choose two.)

- The router has constructed an SPF tree.
- **The router has determined the costs associated with its active links.***
- **The router has established its adjacencies.***
- The router has built its link-state database.
- The routing table has been refreshed.

Once a router has established its adjacencies, it can build its link-state packets (LSPs) that contain the link-state information, including the link cost. A router can only build a link-state after it has received link-state packets from adjacent routers. It then constructs

its SPF tree from the least cost routes to remote networks which are used to populate its routing table.

20. Which two routing protocols are classified as distance vector routing protocols? (Choose two.)

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

RIP and EIGRP are classified as distance vector routing protocols, OSPF and IS-IS are classified as link-state, and BGP is classified as a path-vector routing protocol.

21. Which two events will trigger the sending of a link-state packet by a link-state routing protocol? (Choose two.)

- the router update timer expiring
- the requirement to periodically flood link-state packets to all neighbors
- **a change in the topology***
- **the initial startup of the routing protocol process***
- a link to a neighbor router has become congested

An LSP (link-state packet) is only sent during initial startup of the routing protocol process on a router; and whenever there is a change in the topology, including a link going down or coming up, or a neighbor adjacency being established or broken. Data traffic congestion does not directly influence routing protocol behavior. LSPs are not flooded periodically, and update timers are not relevant to LSPs.

22. Which feature provides secure routing updates between RIPv2 neighbors?

- keepalive messages
- **routing protocol authentication***
- adjacency table
- unicast updates

The RIPv2 routing protocol supports routing protocol authentication to secure routing table updates between neighbors.

23. Which two protocols are link-state routing protocols? (Choose two.)

- **OSPF***
- EIGRP
- RIP
- **IS-IS***
- BGP
- IGP

OSPF and IS-IS are link-state protocols. EIGRP and RIP are distance vector protocols.

24. What is a disadvantage of deploying OSPF in a large single area routing environment?

- OSPF uses a topology database of alternate routes.
- **OSPF uses excessive LSP flooding.***
- OSPF uses a metric of bandwidth and delay.
- OSPF uses multicast updates.

Link-state protocols have the following disadvantages:
 Memory Requirements – Creating and maintaining the link-state database and SPF tree.
 Processing Requirements – The SPF algorithm requires more CPU time than distance vector algorithms because link-state protocols build a complete map of the topology.
 Bandwidth Requirements – Link-state packet flooding can adversely affect the available bandwidth on a network.

25. Match the features of link-state routing protocols to their advantages and disadvantages. (Not all options are used.)

Match the features of link-state routing protocols to their advantages and disadvantages. (Not all options are used.)

bandwidth consumption	Advantage	Target
event-driven updates	Advantage	Target
using hop count as metric	Advantage	Target
building a topological map	Disadvantage	Target
memory usage	Disadvantage	Target
fast convergence	Disadvantage	Target
sending updates with broadcast	Disadvantage	Target
CPU processing time	Disadvantage	Target

Match the features of link-state routing protocols to their advantages and disadvantages. (Not all options are used.)

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fast convergence	Disadvantage	Target
sending updates with broadcast	Disadvantage	Target
CPU processing time	Disadvantage	Target

Link-state routing protocols have their advantages and disadvantages. The advantages are that each router builds a topological map; there is fast convergence; and the LSPs are sent only when there is a change in topology. The disadvantages are the requirements of router and bandwidth resources because of the complexity of the link-state routing protocols.

26. Which two pieces of information are used by the OSPF MD5 algorithm to generate a signature? (Choose two.)

- **secret key***
- **OSPF message***

- OSPF router ID
- router hostname
- interface IP address

Older Version

1. A network administrator has just changed the router ID on a router that is working in an OSPFv2 environment. What should the administrator do to reset the adjacencies and use the new router ID?

- Configure the network statements.
- Change the interface priority.
- **Issue the clear ip ospf process privileged mode command.***
- Change the OSPFv2 process ID.

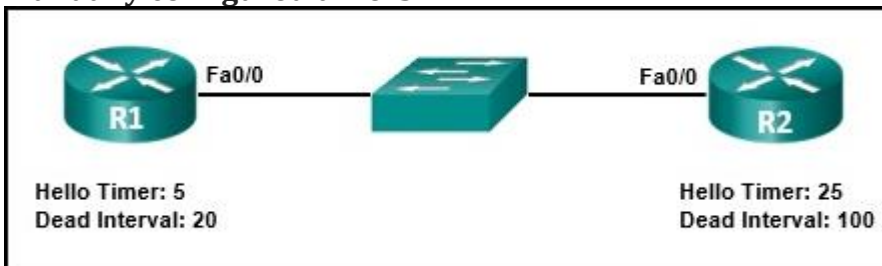
2. Refer to the exhibit. What three conclusions can be drawn from the displayed output? (Choose three.)

```
R3# show ip ospf interface GigabitEthernet 0/0
GigabitEthernet0/0 is up, line protocol is up
  Internet Address 192.168.1.3/28, Area 0, Attached via Network Statement
  Process ID 10, Router ID 3.3.3.3, Network Type BROADCAST, Cost: 1
  Topology-MTID      Cost      Disabled      Shutdown      Topology Name
    0                1         no           no           Base
  Transmit Delay is 1 sec, State DROTHER, Priority 0
  Designated Router (ID) 1.1.1.1, Interface address 192.168.1.1
  Backup Designated router (ID) 2.2.2.2, Interface address 192.168.1.2
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    oob-resync timeout 40
    Hello due in 00:00:01

<output omitted>
```

- **The DR can be reached through the GigabitEthernet 0/0 interface.***
 - This interface is using the default priority.
 - The BDR has three neighbors.
 - The router ID on the DR router is 3.3.3.3
 - **The router ID values were not the criteria used to select the DR and the BDR.***
 - **There have been 9 seconds since the last hello packet sent.***
3. When checking a routing table, a network technician notices the following entry:
O*E2 0.0.0.0/0 [110/1] via 192.168.16.3, 00:20:22, Serial0/0/0
What information can be gathered from this output?
- **This route is a propagated default route.***
 - The route is located two hops away.
 - The metric for this route is 110.
 - The edge of the OSPF area 0 is the interface that is addressed 192.168.16.3.
4. Which command will a network engineer issue to verify the configured hello and dead timer intervals on a point-to-point WAN link between two routers that are running OSPFv2?
- show ip ospf neighbor
 - **show ip ospf interface serial 0/0/0***
 - show ipv6 ospf interface serial 0/0/0
 - show ip ospf interface fastethernet 0/1

5. A network engineer has manually configured the hello interval to 15 seconds on an interface of a router that is running OSPFv2. By default, how will the dead interval on the interface be affected?
- The dead interval will now be 15 seconds.
 - The dead interval will now be 30 seconds.
 - **The dead interval will now be 60 seconds.***
 - The dead interval will not change from the default value.
6. A network engineer suspects that OSPFv3 routers are not forming neighbor adjacencies because there are interface timer mismatches. Which two commands can be issued on the interface of each OSPFv3 router to resolve all timer mismatches? (Choose two.)
- **no ipv6 ospf hello-interval ***
 - **no ipv6 ospf dead-interval***
 - ip ospf hello-interval 10
 - ip ospf dead-interval 40
 - no ipv6 ospf cost 10
 - no ipv6 router ospf 10
7. Refer to the exhibit. A network administrator has configured the OSPF timers to the values that are shown in the graphic. What is the result of having those manually configured timers?



- **The R1 dead timer expires between hello packets from R2.***
 - R1 automatically adjusts its own timers to match the R2 timers.
 - The hello timer on R2 expires every ten seconds.
 - The neighbor adjacency has formed.
8. Why do OSPF serial interfaces usually require manual bandwidth configuration?
- **OSPF uses the bandwidth value to compute routes for its routing table.***
 - Each side of an OSPF serial link should be configured with a unique value.
 - All serial interfaces default to a value of 1.544 Mb/s.
 - Bandwidth value affects the actual speed of the link.
9. Refer to the exhibit. R1 and R2 are connected to the same LAN segment and are configured to run OSPFv3. They are not forming a neighbor adjacency. What is the

cause of the problem?

```
R1# show ipv6 ospf interface fa0/0
FastEthernet0/0 is up, line protocol is up
  Link Local Address FE80::21E:BEFF:FEF4:55C8, Interface ID 4
  Area 0, Process ID 10, Instance ID 0, Router ID 1.1.1.1
  Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 1.1.1.1, local address FE80::21E:BEFF:FEF4:55C8
  No backup designated router on this network
  Timer intervals configured, Hello 1, Dead 4, Wait 4, Retransmit 5
<output omitted>
```

```
R2# show ipv6 ospf interface fa0/0
FastEthernet0/0 is up, line protocol is up
  Link Local Address FE80::21E:7AFF:FE5F:6650, Interface ID 4
  Area 0, Process ID 1, Instance ID 0, Router ID 2.2.2.2
  Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 2.2.2.2, local address FE80::21E:7AFF:FE5F:6650
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
<output omitted>
```

- The IPv6 addresses of R1 and R2 are not in the same subnet.
- The OSPFv3 process IDs of R1 and R2 are different.
- **The timer intervals of R1 and R2 do not match.***
- The priority value of both R1 and R2 is 1.

10. Refer to the exhibit. What kind of OSPF authentication has been configured on this interface?

```
R1# show ip ospf interface fa0/0
FastEthernet0/0 is up, line protocol is up
  Internet Address 172.16.1.1/24, Area 0
  Process ID 1, Router ID 172.16.1.1, Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  Designated Router (ID) 172.16.1.1, Interface address 172.16.1.1
  No backup designated router on this network
  Timer intervals configured, Hello 10, Dead 40, Wait 40, Retransmit 5
    oob-resync timeout 40
    Hello due in 00:00:00
  Supports Link-local Signaling (LLS)
  Index 1/1, flood queue length 0
  Next 0x0(0)/0x0(0)
  Last flood scan length is 0, maximum is 0
  Last flood scan time is 0 msec, maximum is 0 msec
  Neighbor Count is 2, Adjacent neighbor count is 1
  Suppress hello for 0 neighbor(s)
  Message digest authentication enabled
  Youngest key id is 1
```

- simple
- null
- plain text
- **MD5***

11. Why is MD5 authentication more secure than simple authentication for OSPF updates?

- **MD5 does not send the password to the neighbor router.***
 - MD5 requires passwords that are at least 8 characters long.
 - MD5 uses both a username and a password to authenticate the neighbor.
 - MD5 employs IPsec to keep the updates from being intercepted.
12. A network engineer is troubleshooting convergence and adjacency issues in an OSPFv2 network and has noted that some expected network route entries are not displayed in the routing table. Which two commands will provide additional information about the state of router adjacencies, timer intervals, and the area ID? (Choose two.)
- show ip protocols
 - **show ip ospf interface***
 - show ip route ospf
 - **show ip ospf neighbor***
 - show running-configuration
13. A network engineer is troubleshooting convergence and adjacency issues in an OSPFv2 network and has noted that some expected network route entries are not displayed in the routing table. Which two commands will provide additional information about the state of router adjacencies, timer intervals, and the area ID? (Choose two.)
- show ip protocols
 - **show ip ospf interface***
 - show ip route ospf
 - **show ip ospf neighbor***
 - show running-configuration
14. When OSPFv2 neighbors are establishing adjacencies, in which state do they elect a DR and BDR router?
- Exchange state
 - Init state
 - **Two-Way state***
 - Loading state
15. A network engineer is troubleshooting an OSPFv2 network and discovers that two routers connected by a point-to-point WAN serial link are not establishing an adjacency. The OSPF routing process, network commands and area ID are all confirmed as correct, and the interfaces are not passive. Testing shows that the cabling is correct, that the link is up, and pings between the interfaces are successful. What is most likely the problem?
- **The subnet masks on the two connected serial interfaces do not match.***
 - A clock rate has not been set on the DCE interface of the serial link.
 - The OSPFv2 process IDs on each router do not match.
 - A DR election has not taken place.
16. A network engineer is troubleshooting OSPFv2 routing issues on two connected routers. Which two requirements to form an adjacency need to be verified? (Choose two.)
- Verify that one of the interfaces that connects the two routers is active and the other passive.
 - Verify that one of the routers is the DR or BDR and the other router a DRother.
 - **Verify that the interfaces that connect the two routers are in the same subnet.***
 - **Verify that the interfaces that connect the two routers are in the same area.***

- Verify that both routers are using the same OSPFv2 process ID.
17. Which command is used to verify that OSPF is enabled and also provides a list of the networks that are being advertised by the network?
- **show ip protocols***
 - show ip ospf interface
 - show ip interface brief
 - show ip route ospf
18. Refer to the exhibit. Four routers are connected to an Ethernet LAN segment and are configured to run OSPFv3. However, none of the routers are receiving routing updates. What is the cause of the problem?

```
R1# show ipv6 ospf neighbor

Neighbor ID  Pri   State           Dead Time  Interface ID  Interface
3.3.3.3      0    2WAY/DROTHER    00:00:39   4             FastEthernet0/0
4.4.4.4      0    2WAY/DROTHER    00:00:38   4             FastEthernet0/0
2.2.2.2      0    2WAY/DROTHER    00:00:32   4             FastEthernet0/0

R1# show ipv6 ospf interface fastEthernet0/0
FastEthernet0/0 is up, line protocol is up
  Link Local Address FE80::21E:BEFF:FEF4:55C8, Interface ID 4
  Area 0, Process ID 1, Instance ID 0, Router ID 1.1.1.1
  Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DROTHER, Priority 0
  <output omitted>
  Neighbor Count is 3, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)
```

- The routers are using IPv4 addresses for router IDs.
 - **All of the routers have an OSPFv3 interface priority of 0.***
 - The network type has been set to BROADCAST instead of NBMA.
 - The routers are using IPv6 link local addresses to communicate.
19. Refer to the exhibit. These two routers are configured to run OSPFv3 but they are not forming a neighbor adjacency. What is the cause of the problem?

```
R1# show ipv6 ospf interface fa0/0
FastEthernet0/0 is up, line protocol is up
  Link Local Address FE80::21E:BEFF:FEF4:55C8, Interface ID 4
  Area 0, Process ID 1, Instance ID 0, Router ID 1.1.1.1
  Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  <output omitted>
  Neighbor Count is 0, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)

R2# show ipv6 ospf interface fa0/0
FastEthernet0/0 is up, line protocol is up
  Link Local Address FE80::21E:7AFF:FE5F:6650, Interface ID 4
  Area 0, Process ID 1, Instance ID 0, Router ID 1.1.1.1
  Network Type BROADCAST, Cost: 1
  Transmit Delay is 1 sec, State DR, Priority 1
  <output omitted>
  Neighbor Count is 0, Adjacent neighbor count is 0
  Suppress hello for 0 neighbor(s)
```

- The routers have the same priority.
- The routers have both been elected as the DR.

- **The routers are configured with the same router ID.***
- The routers do not have global IPv6 addresses that are configured on the Fa0/0 interfaces.

20. Refer to the exhibit. An administrator is trying to configure R1 to run OSPFv3 but the neighbor adjacency is not forming with the router connected to Fa0/0. What is the cause of the problem?

```

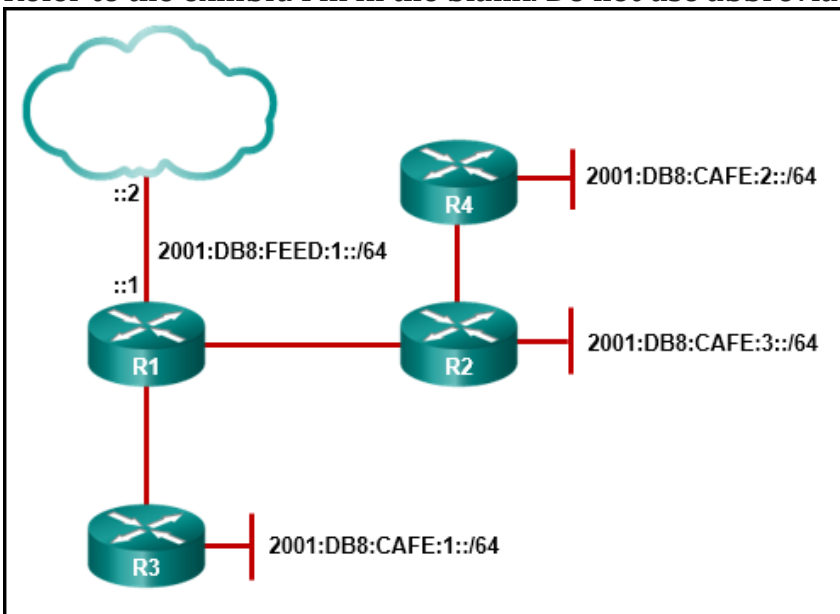
R1# show ip interface brief
Interface          IP-Address      OK? Method Status        Protocol
FastEthernet0/0    unassigned      YES unset  up            up
FastEthernet0/1    unassigned      YES unset  administratively down down
Serial0/0/0        unassigned      YES unset  administratively down down
Serial0/0/1        unassigned      YES unset  administratively down down

R1# show running-config
<output omitted>
interface FastEthernet0/0
 no ip address
 duplex auto
 speed auto
 ipv6 address 2001:DB8:C5C0:1::1/64
 ipv6 ospf 1 area 0
<output omitted>
ipv6 router ospf 1
 log-adjacency-changes
 default-information originate
<output omitted>

R1# show ipv6 ospf interface fa0/0
%OSPFv3: OSPF not enabled on
FastEthernet0/0
    
```

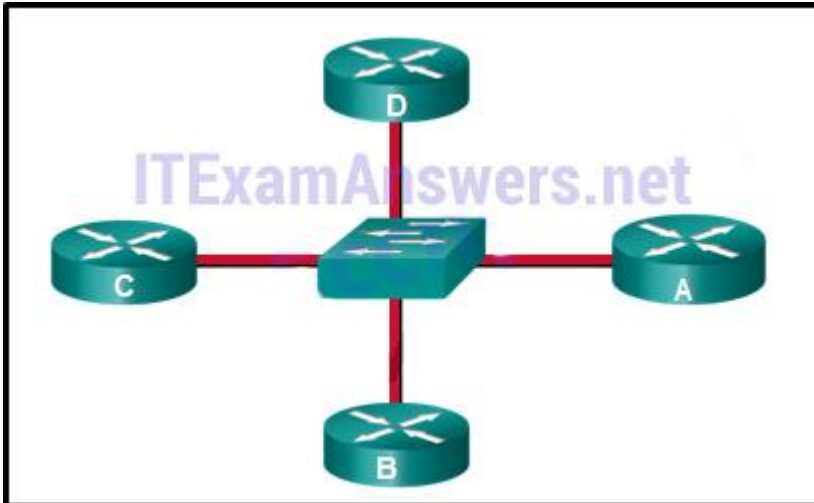
- **No router ID has been configured.***
- FastEthernet0/0 has been configured as a passive interface.
- A link-local address has not been configured on interface FastEthernet0/0.
- The OSPF process ID and area values are backwards in the interface configuration.

21. Refer to the exhibit. Fill in the blank. Do not use abbreviations.



The command **show ipv6 route** can be issued on router R2 to verify the propagation of a static default route from R1 to R2.

22. Fill in the blank. Do not use abbreviations. When IPv4 and OSPFv2 are being used, the command **show ip ospf neighbor** is used to verify that a router has formed an adjacency with its neighboring routers.
23. Refer to the exhibit. Which conclusion can be drawn from this OSPF multiaccess network?



- When a DR is elected all other non-DR routers become DROTHER.
 - All DROTHER routers will send LSAs to the DR and BDR to multicast 224.0.0.5.
 - If the DR stops producing Hello packets, a BDR will be elected, and then it promotes itself to assume the role of DR.
 - **With an election of the DR, the number of adjacencies is reduced from 6 to 3.***
24. What is a recommended method of authentication for OSPFv3?
- MD5 authentication
 - **IPsec to secure routing updates***
 - the passive-interface command
 - a VPN tunnel between each OSPF neighbor adjacency
25. A fully converged five router OSPF network has been running successfully for several weeks. All configurations have been saved and no static routes are used. If one router loses power and reboots, what information will be in its routing table after the configuration file is loaded but before OSPF has converged?
- All routes for the entire network will be present.
 - **Directly connected networks that are operational will be in the routing table.***
 - Because the SPF algorithm has not completed all calculations, no routes will be in the table.
 - A summary route for all previously learned routes will automatically appear in the routing table until all LSPs have been received by the router.
26. During verification or troubleshooting of the OPSFv3 configuration on a router, which three parameters are displayed by the show ipv6 ospf interface command? (Choose three.)
- **the hello and dead intervals***
 - the global unicast IPv6 address of the interface
 - the metric of the route that is attached to the interface
 - **the OSPFv3 area that the interface is in ***
 - **the process ID that is assigned to the interface***
 - the number of interfaces in the area

27. The PT initialization was skipped. You will not be able to view the PT activity. Open the PT Activity. Perform the tasks in the activity instructions and then answer the question.

Which task has to be performed on Router 1 for it to establish an OSPF adjacency with Router 2?

- Issue the clear ip ospf process command.
- Remove the passive interface command from interface FastEthernet 0/0.
- Add the network 10.0.1.0 0.0.0.255 area 0 command to the OSPF process.
- **Change the subnet mask of interface FastEthernet 0/0 to 255.255.255.0.***

28. Match each OSPF state to its function. (Not all options are used.)

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Full state	Hello packets that contain the router ID of the sending routers are received from the neighbors.
Loading state	Routers have converged.
ExStart state	LSRs and LSUs are used to gain additional route information.
	Master / slave relationships are negotiated.

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Loading state	Routers have converged.
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	Master / slave relationships are negotiated.

Note: In the original image, red arrows point from 'Full state' to 'Hello packets...', 'Loading state' to 'LSRs and LSUs...', and 'ExStart state' to 'Master / slave relationships...'. The 'Hello packets...' box is highlighted with a green border.

Place the options in the following order:

- not scored -

full state -> Routers have converged.

loading state -> LSRs and LSUs are used to gain additional route information.

ExStart state -> Master / slave relationships are negotiated.

29. Match each OSPF election criterion to its sequential order for the OSPF DR and BDR election process. (Not all options are used.)

Match each OSPF election criterion to its sequential order for the OSPF DR and BDR election process. (Not all options are used.)

first	Elect the router with the highest IPv4 address on loopback interfaces.
second	Elect the router with the highest manually configured router ID.
third	Elect the router with the highest routing process ID.
fourth	Elect the router with the highest interface priority.
	Elect the router with the highest active IPv4 address on physical interfaces.

Match each OSPF election criterion to its sequential order for the OSPF DR and BDR election process. (Not all options are used.)

first	Elect the router with the highest IPv4 address on loopback interfaces.
second	Elect the router with the highest manually configured router ID.
third	Elect the router with the highest routing process ID.
fourth	Elect the router with the highest interface priority.
	Elect the router with the highest active IPv4 address on physical interfaces.

Place the options in the following order:

third -> Elect the router with the highest IPv4 address on loopback interfaces.

second -> Elect the router with the highest manually configured router ID.

- not scored -

first -> Elect the router with the highest interface priority

fourth -> Elect the router with the highest active IPv4 address on physical interfaces.

30. A network engineer is researching dynamic routing protocols and how much time it takes for a network to converge. What does it mean for a router to achieve convergence?

- **The amount of time it takes a router to share information, calculate best paths, and update the routing table***
- The capability to transport data, video, and voice over the same media
- The amount of time a network administrator needs to configure a routing protocol in a small- to medium-sized network
- The capability to forward traffic between hosts on a local network