Cisco 642-901

642-901 Building Scaleable Cisco Internetworks (BSCI)

Practice Test

Version 2.12

QUESTION NO: 1

A company has a BGP network and a BGP route of 196.27.125.0/24 that should be propagated to all of the devices. The route is not now in any of the routing tables. The administrator determines that an access list is the cause of the problem. The administrator changes the access list to allow this route, but the route still does not appear in any of the routing tables. What should be done to propagate this route?

A. Clear the BGP session.
B. Change both the inbound and outbound policy related to this route.
C. Use the service-policy command to adjust the QOS policy to allow the route to propagate.
D. Use the release BGP routing command.

Answer: A

Explanation:
When configuring BGP, changes made to an existing configuration may not appear immediately. In order to force BGP to clear its table and reset BGP sessions, use the clear ip bgp * command :
Router# clear ip bgp *
The asterisk (*) is a wildcard that matches all table entries. Therefore, all BGP routes are lost while the neighbor relationships are reset. This is expedient and very useful in a lab situation, but caution should be exercised when issuing this command on a production router. On an Internet backbone router, it may be more appropriate to use this command with a specific IP address, as shown in the following:
Router# clear ip bgp 192.168.0.0

QUESTION NO: 2 HOTSPOT

Hotspot

Scenario	Save-s Enterprises is an Internet game provider. The network uses OSPF as its routing protocol. Recently, system administrators have experienced discrepancies in synchronizing their database servers at separate locations within OSPF area 0. Link failures have been observed in the network as several adds, moves and changes have been applied during the company's rapid growth. However, it is the intent that OSPF be able to converge around these failures. Read through all questions before answering	
Topology		

The syslog of CRSwitch1 reports the following:

%LINEPROTO-5-UPDOWN: Line protocol on interface FastEthernet0/1, changed state to down
%LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to down
%OSPF-5-ADJCHG: Process 1, Nbr 7.2.161.93/32 on FastEthernet0/1 from FULL to DOWN, Neighbor Down: Interface down or detached

This event was anticipated due to maintenance; however, it resulted in excessive lost routes. Which route should be the only one removed from the routing tables of the routers?

Questions

- 3.121.201.44/32
- 7.2.161.93/32
- 10.243.0.0/30
- 10.147.5.0/30
- 10.134.184.0/30

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CRRouter1 has lost connectivity to CRRouter2. The following is CRRouter1's current route table:

```
     172.16.0.0/16 is variably subnetted, 3 subnets, 2 masks
o IA    172.16.30.0/24  [110/11] via 10.147.5.1, 00:00:03, FastEthernet0/0
o IA    172.16.44.0/24  [110/12] via 10.147.5.1, 00:00:03, FastEthernet0/0
o IA    172.16.2.0/30   [110/2] via 10.147.5.1, 00:00:03, FastEthernet0/0
     10.0.0.0/30 is subnetted, 1 subnets
C       10.147.5.0 is directly connected, FastEthernet0/0
```

Which expected route is missing from CRRouter1's route table based on the topology during the maintenance period?

- o   10.243.0.0 [110/2] via 10.147.5.1, 00:00:09, FastEthernet0/0
- o IA 10.243.0.0 [110/2] via 10.147.5.1, 00:00:09, FastEthernet0/0
- o   10.134.184.0 [110/3] via 10.147.5.1, 00:00:09, FastEthernet0/0
- o IA 10.134.184.0 [110/3] via 10.147.5.1, 00:00:09, FastEthernet0/0
- o IA 3.121.201.44 [110/2] via 10.147.5.1, 00:00:09, FastEthernet0/0
- o IA 7.2.161.93 [110/3] via 10.147.5.1, 00:00:09, FastEthernet0/0

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Examine the following excerpt from the **show ip ospf** command on CRSwitch1:

...
  Area BACKBONE(0)
      Number of interfaces in this area is 1
      Area has no authentication
      SPF algorithm last executed 00:00:31.280 ago
      SPF algorithm executed 5 times
      Area ranges are
      Number of LSA 13. Checksum Sum 0x16F0FD
      Number of opaque link LSA 0. Checksum Sum 0x000000
      Number of DCbitless LSA 0
      Number of indication LSA 0
      Number of DoNotAge LSA 0
      Flood list length 0
    Area 3
      Number of interfaces in this area is 2
      Area has message digest authentication
      SPF algorithm last executed 00:00:34.928 ago
      SPF algorithm executed 7 times
      Area ranges are
      Number of LSA 5. Checksum Sum 0x02FCD3
      Number of opaque link LSA 0. Checksum Sum 0x000000
      Number of DCbitless LSA 0
      Number of indication LSA 0
      Number of DoNotAge LSA 0
      Flood list length 0

What is causing the different missing routes throughout the network?

1
2
3
4

○ Area 3 has been configured as a stub network.

○ Area 3 has been configured as a total stub network.

○ Area 0 and Area 3 have been configured with mismatched LSA numbers.

○ Area 3 has been configured to use the same interfaces as Area 0.

○ Area 0 is discontiguous.

○ Area 3 is configured with authentication.

Which configuration command on CRSwitch1 (with a similar command on CRSwitch2) will provide an immediate solution to the missing route problem?

1
2
3
4

○ **no area 3 stub**

○ **no area 3 stub no-summary**

○ **no area 3 authentication message-digest**

○ **area 3 virtual-link 7.2.161.93**

○ **area 3 virtual-link 172.16.2.2**

○ **network 172.16.0.0 0.0.255.255 area 3**

Answer:

Which configuration command on CRSwitch1 (with a similar command on CRSwitch2) will provide an immediate solution to the missing route problem?

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○ **area 3 virtual-link 172.16.2.2**

○ **network 172.16.0.0 0.0.255.255 area 3**

QUESTION NO: 3

Which IS-IS router is equivalent to an ABR in OSPF?

A. Level 2-3
B. Level 1-2
C. Level 2
D. Level 0
E. Level 3
F. Level 1

Answer: B

QUESTION NO: 4

In an IS-IS environment, what happens when the designated IS router crashes?

A. The elected backup designated router takes the place of the DIS temporarily without the necessity of a new election, until the original DIS comes back online.
B. A new election process occurs immediately, establishing a new DIS until a router with a higher priority or MAC address establishes an adjacency.
C. A new election process occurs immediately, establishing a new DIS that will remain in place indefinitely.
D. The elected backup designated router takes the place of the DIS indefinitely without the necessity of a new election.

Answer: B

Explanation:
There is no backup designated router in IS-IS. Therefore, if the DIS meets an untimely death, a new DIS would be elected, based on priority or highest MAC address. If another router comes online with a higher priority, it will dislodge the existing DIS and rule in its place. This behavior is different from that of OSPF. Once a new DIS is elected, the link-state databases are purged and new LSPs are flooded.
Reference: CCNP Self-Study CCNP BSCI Exam certification guide p.806

QUESTION NO: 5

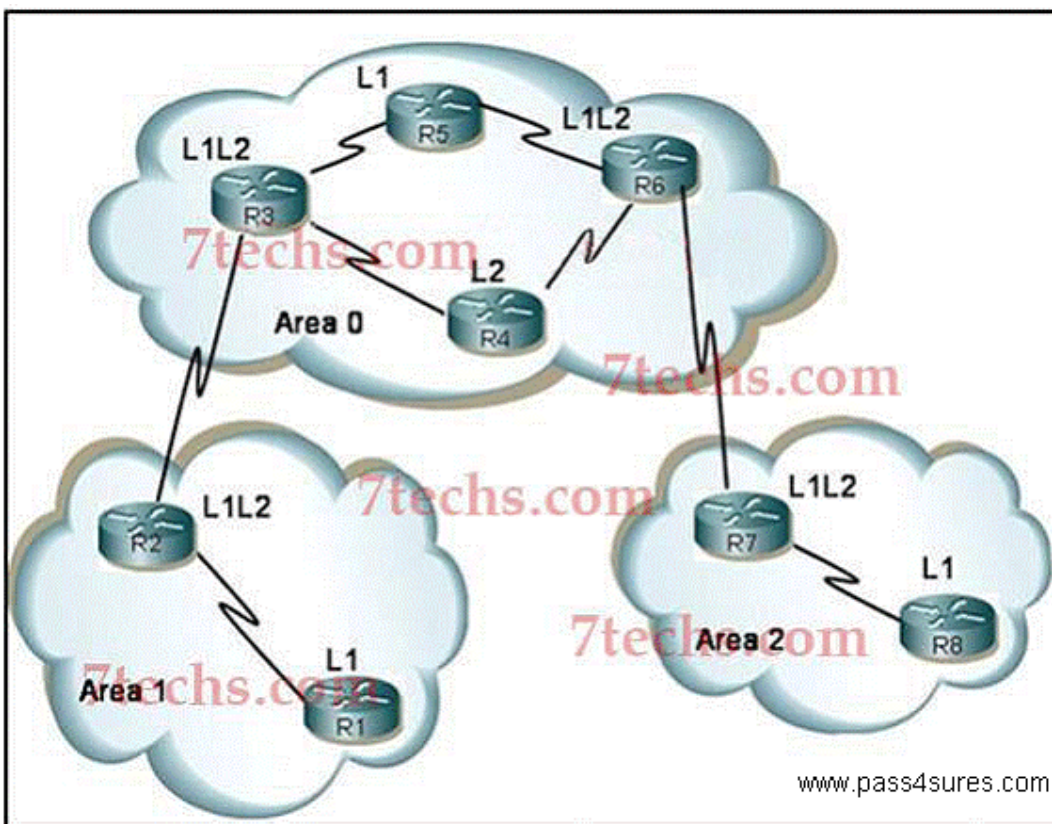Into which two types of areas would an area border router (ABR) inject a default route? (Choose two.)

A. stub

B. the autonomous system of an exterior gateway protocol (EGP)

C. NSSA

D. totally stubby

E. the autonomous system of a different interior gateway protocol (IGP)

F. area 0

Answer: A,D

QUESTION NO: 6

Given the network diagram, which routers currently make up the IS-IS backbone?

A. R3,R4,R6

B. R2,R3,R6,R7

C. R1 through R8

D. R3,R4,R5,R6

E. R2,R3,R4,R6,R7

Answer: E

Explanation:

An intermediate system can be a level 1 (L1) router, a level 2 (L2) router, or both (L1/L2). L1 routers are analogous to OSPF nonbackbone Internal Routers, L2 routers are analogous to OSPF backbone routers, and L1/L2 routers are analogous to OSPF ABRs. The L1/L2 routers are connected to L1 routers and to L2 routers. These L1/L2 routers must maintain both a level 1 link-

state database and a level 2 link-state database, in much the same way that an OSPF ABR must maintain a separate database for each area to which it is attached. Cisco routers are configured as L1-only, L2-only, or L1/L2 with the command is-type. By default, they are L1/L2.

Note: In actuality, routers R4 and R5 would also make up the part of the backbone, but since they are not given as choices the best answer is E.

QUESTION NO: 7

Which two statements are true about IS-IS routing? (Choose two.)

A. Based on the default timers, OSPF detects a failure faster than IS-IS does.
B. OSPF default timers permit more tuning than IS-IS does.
C. IS-IS is more efficient than OSPF in the use of CPU resources.
D. OSPF is more scalable than IS-IS because of its ability to identify normal, stub, and NSSA areas.
E. IS-IS and OSPF are both Open Standard, link-state routing protocols which support VLSM.

Answer: C,E

Explanation:
IS-IS is the dynamic link-state routing protocol for the OSI protocol stack. As such, IS-IS distributes routing information for routing CLNP data for the ISO CLNS environment. When IS-IS is used strictly for the ISO CLNS environment, it is referred to as ISO IS-IS.

Differences between IS-IS and OSPF

Although IS-IS and OSPF share many common features, they do have quite a few differences:

*   Whereas OSPF routers can be part of multiple areas, an IS-IS router belongs to only one area per routing process.
*
*   In OSPF, the boundaries of areas are set in the router. The boundaries of areas are on the network connections between routers for IS-IS, reiterating that each router is in only one area per routing process.
*   IS-IS utilizes CLNS protocol data units (PDUs) to send information between routers instead of using IP packets, like OSPF does.
*   IS-IS allows for the preempting of DRs, where OSPF does not.
*   OSPF DROthers do not form adjacencies with other DROthers on broadcast multi-access networks, while in the same environment, all IS-IS intermediate systems form adjacencies with one another.

The backbone of an IS-IS network is designated by the type of routers in it instead of being designated by an area number (0, in the case of OSPF).

QUESTION NO: 8

Which two are characteristics of the IS-IS protocol but not OSPF? (Choose two.)

A. forms adjacencies with all neighbors
B. supports demand circuit routing
C. provides routing support for multiple network layer protocols
D. utilizes SPF algorithm
E. provides for network scalability by allowing the network to be separated into areas
F. three layers of hierarchical routing

Answer: A,C

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IS-IS is the dynamic link-state routing protocol for the OSI protocol stack. As such, IS-IS distributes routing information for routing CLNP data for the ISO CLNS environment. When IS-IS is used strictly for the ISO CLNS environment, it is referred to as ISO IS-IS.
Differences between IS-IS and OSPF.
Although IS-IS and OSPF share many common features, they do have quite a few differences:
* Whereas OSPF routers can be part of multiple areas, an IS-IS router belongs to only one area per routing process.
* In OSPF, the boundaries of areas are set in the router. The boundaries of areas are on the network connections between routers for IS-IS, reiterating that each router is in only one area per routing process.
* IS-IS utilizes CLNS protocol data units (PDUs) to send information between routers instead of using IP packets, like OSPF does.
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* OSPF DROthers do not form adjacencies with other DROthers on broadcast multi-access networks, while in the same environment, all IS-IS intermediate systems form adjacencies with one another.
The backbone of an IS-IS network is designated by the type of routers in it instead of being designated by an area number (0, in the case of OSPF).

QUESTION NO: 9

Refer to the exhibit. Switch Cat2 is receiving IGMP frames only on interface FastEthernet 0/3. Given IGMP snooping, out of which port or ports will switch Cat2 forward multicast traffic?

```
Cat2# show vlan

VLAN Name              Status    Ports
---- --------------    --------- -------------------------------
1    default           active    Fa0/1, Fa0/2, Fa0/3, Fa0/4
10   VLAN0010          active    Fa0/5, Fa0/6, Fa0/9,Fa0/8
20   VLAN0020          active    Fa0/9, Fa0/10, Fa0/11,Fa0/12
30   VLAN0030          active    Fa0/13, Fa0/14,Fa0/15, Fa0/16,
40   VLAN0040          active    Fa0/17, Fa0/18,Fa0/19, Fa0/20,
50   VLAN0050          active    Fa0/21, Fa0/22,Fa0/23, Fa0/24

1002 fddi-default                act/unsup
1003 token-ring-default          act/unsup
1004 fddinet-default             act/unsup
1005 trnet-default               act/unsup       www.pass4sures.com
```

A. all ports

B. FastEthernet 0/3

C. FastEthernet 0/1, 0/2, 0/4

D. FastEthernet 0/1, 0/2, 0/3, 0/4

E. FastEthernet 0/1, 0/2, 0/4, 0/5, 0/6, 0/7, 0/8

F. none of the ports

Answer: B

QUESTION NO: 10

Which is the most effective technique to contain EIGRP queries?

A. route summarization

B. establishing separate autonomous systems

C. configuring route filters

D. using a hierarchical addressing scheme

Answer: A

Explanation:
EIGRP automatically summarizes routes at the classful boundary, the boundary where the network address ends as defined by class-based addressing. In most cases, auto summarization is a good thing, keeping the routing tables as compact as possible
In the presence of discontiguous subnetworks, automatic summarization must be disabled for routing to work properly. To turn off auto-summarization, use the following command:
Router(config-router)# no auto-summary
EIGRP also enables manual configuration of a prefix to use as a summary address. Manual summary routes are configured on a per-interface basis. The interface that will propagate the route summary must first be selected and then defined with the ip summary-address eigrp command, which has the following syntax:

Router(config-if)#ip summary-address eigrp autonomous-system-number ip-address mask administrative-distance

QUESTION NO: 11

Refer to the exhibit. Which two statements about the IS-IS configurations of router R1 and router R2 are correct? (Choose two.)
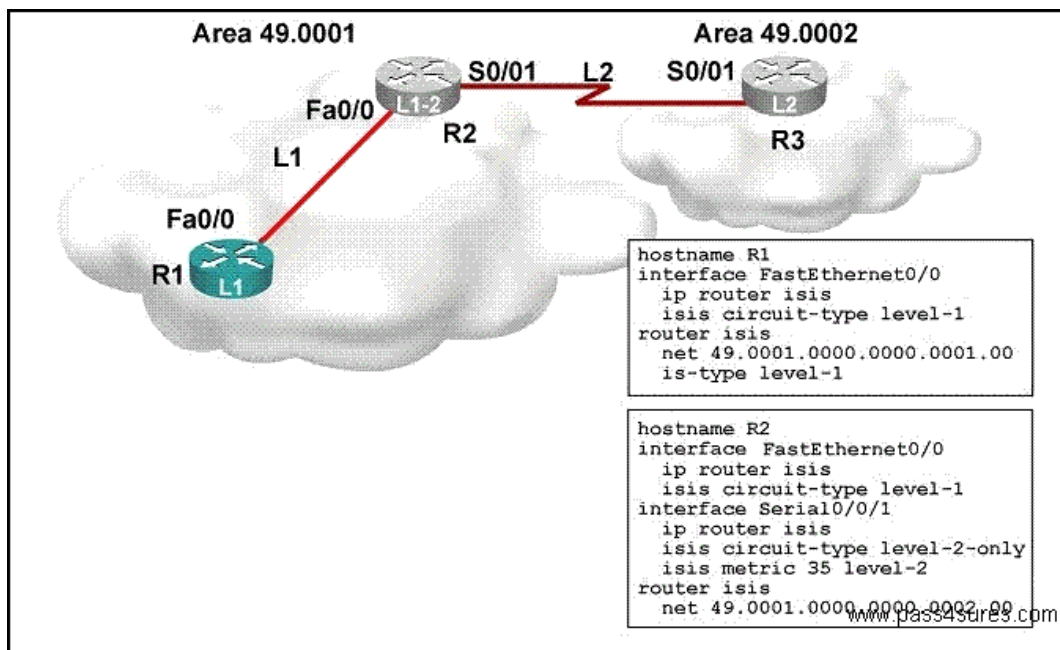
A. Router R1 is configured as a Level 1-2 router.

B. Router R2 has the same metric value assigned for Level 1 and Level 2 on the serial interface.

C. The network entity titles (NETs) that are configured on L1 and L2 are incompatible.

D. The IS-IS Level 2 metric that is assigned on the serial interface of router R2 is over three times the default value.

E. Router R2 sends only Level 2 hellos out the interface that is connected to R1.

F. Router R1 sends only Level 1 hellos out the interface that is connected to R2.

Answer: D,F

QUESTION NO: 12

What will occur when an IPv6 enabled router running 6to4 must transmit a packet to a remote destination and the next hop is the address of 2002::/16?

A. The packet is tagged with an IPv6 header and the IPv6 prefix is included.

B. The IPv6 packet has its header removed and replaced with an IPv4 header.

C. The IPv6 packet is dropped because that destination is unable to route IPv6 packets.

D. The IPv6 packet is encapsulated in an IPv4 packet using an IPv4 protocol type of 41.