

# **Building Scalable Cisco InterNetworks (BSCI) 642-801**

**Demo Version  
From  
ITCertKeys.com  
To  
CertsBraindumps.com**

This study guide demo consists of 100 numbers of questions and answers with explanation. You can buy the full version of this study guide from the sponsored website.

**Question 1.**

What happens if a BGP route reflector receives updates from a peer in another autonomous system?

- A. It discards the update.
- B. It sends the update to all IBGP peers.
- C. It sends the update only to nonclients.
- D. It sends the update only to route reflector clients.
- E. It sends the update to all routers in the autonomous system.

**Answer: D**

**Explanation:**

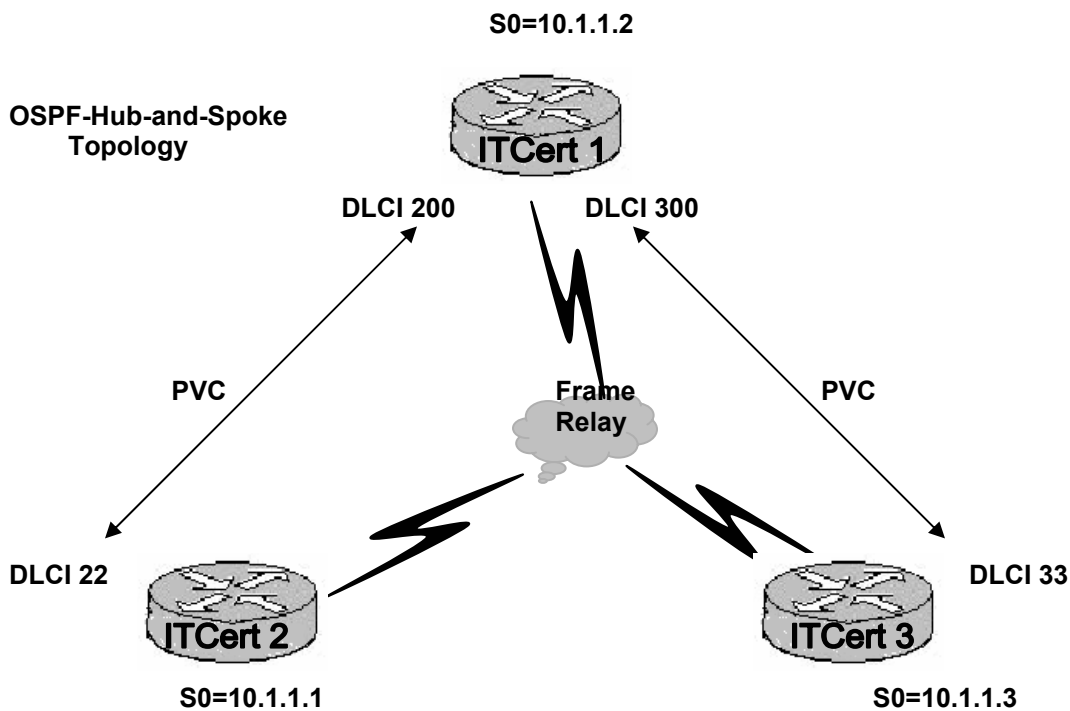
An autonomous system can have multiple route reflectors. A route reflector treats other route reflectors just like other IBGP speakers. A route reflector can be configured to have other route reflectors in a client group or nonclient group. In a simple configuration, the backbone could be divided into many clusters. Each route reflector would be configured with other route reflectors as nonclient peers (thus, all the route reflectors will be fully meshed). The clients are configured to maintain IBGP sessions with only the route reflector in their cluster.

**Reference:**

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products\\_configuration\\_guide\\_chapter\\_09186a00800\\_ca571.html#5155](http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_configuration_guide_chapter_09186a00800_ca571.html#5155)

**Question 2.**

**Exhibit:**



What is the default OSPF network type on the s0 interface of router ITCert1?

- A. Nonbroadcast
- B. Broadcast
- C. Point-to-multipoint
- D. Point-to-point
- E. Point-to-multipoint nonbroadcast

**Answer: E**

**Explanation:**

There are three different scenarios for NBMA interfaces.

- Pure Multipoint Configuration (No Subinterfaces)
- Pure Point-to-Point Configuration (each VC on a separate subinterface)
- Hybrid Configuration (point-to-point and multipoint subinterfaces)

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT207/technologies\\_tech\\_note09186a0080094063.shtml#hybrid](http://www.cisco.com/en/US/tech/IT365/IT207/technologies_tech_note09186a0080094063.shtml#hybrid)

**Question 3.**

Match the OSPF area type in the options by dragging-and-dropping it to the description in the target area.

Sub Area	Place Here	Interconnects Areas
Transit Area	Place Here	Uses Type LSAs
Totally Stubby Area	Place Here	Does not accept external LSAs
Backbone Area	Place Here	Interconnects Discontiguous backbones
Not-So- Stubby Area	Place Here	Does not accept external or summary LSAs

Answer:

Backbone Area	Interconnects Areas
Not-So- Stubby Area	Uses Type LSAs
Totally Stubby Area	Does not accept external LSAs
Transit Area	Interconnects Discontiguous Backbones
Stub Area	Does not accept external or summary LSAs

**Explanation:**

o **Stub Areas:** These areas do not accept routes belonging to external autonomous systems (AS); however, these areas have inter-area and intra-area routes. In order to reach the outside networks, the routers in the stub area use a default route which is injected into the area by the Area Border Router (ABR).

o **Normal Areas:** These areas can either be standard areas or transit (backbone) areas. Standard areas are defined as areas that can accept intra-area, inter-area and external routes.

o **backbone area** is the central area to which all other areas in OSPF connect.

o **Totally Stub Areas:** These areas do not allow routes other than intra-area and the default routes to be propagated within the area. The ABR injects a default route into the area and all the routers belonging to this area use the default route to send any traffic outside the area.

o **NSSA:** This type of area allows the flexibility of importing a few external routes into the area while still trying to retain the stub characteristic. Assume that one of the routers in the stub area is connected to an external AS running a different routing protocol, it now becomes the ASBR, and hence the area can no more be called a stub area. However, if the area is configured as a NSSA,

then the ASBR generates a NSSA external link-state advertisement (LSA) (Type-7) which can be flooded throughout the NSSA area. These Type-7 LSAs are converted into Type-5 LSAs at the NSSA ABR and flooded throughout the OSPF domain

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT480/technologies\\_tech\\_note09186a0080094a74.shtml](http://www.cisco.com/en/US/tech/IT365/IT480/technologies_tech_note09186a0080094a74.shtml)

**Question 4.**

Which IP address is known as the all OSPF DRs and BDRs address?

- A. 224.0.0.5
- B. 224.0.0.6
- C. 224.0.0.9
- D. 224.0.0.11

**Answer: B**

**Explanation:**

224.0.0.6 is the address of all OSPF DRs and BDRs.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 114

**Question 5.**

What are three characteristics of an Autonomous System (AS) in a BGP network? (Choose three)

- A. Within an AS, all routers must run either BGP or IBGP.
- B. An AS uses exterior gateway protocols (EGPs) to exchange information with other autonomous systems.
- D. Within an AS, routes learned through BGP can be redistributed using interior gateway protocols.
- E. Within an AS, routes learned through an interior protocol cannot be redistributed using BGP to other autonomous systems.

**Answer: B, C, D**

**Explanation:**

- o Exterior Gateway Protocol (EGP) routing protocol used to connect between autonomous systems.
- o The use of the term autonomous system in connection with BGP stresses the fact that the administration of an autonomous system appears to other autonomous systems to have a single coherent interior routing plan, and presents a consistent picture of those networks that are reachable through it.
- o BGP is used between autonomous systems

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 313

**Question 6.**

Which IOS features can be used to prevent routing loops between two autonomous systems caused by running different routing protocols and having redundant paths between systems?

- A. Route filtering
- B. Passive interfaces
- C. Static redistribution
- D. Two-way redistribution

**Answer: A, D**

**Explanation:**

Two way redistribution

If you must allow two-way redistribution, enable a mechanism to reduce the chances of routing loops.

Examples of mechanisms covered in this chapter are default routes, route filters, and modification of the metrics advertised. With these types of mechanisms, you can reduce the chances of routes imported from one autonomous system being injected into the same autonomous system as new route information if more one boundary router is performing two-way redistribution.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 471

**Question 7.**

The following example is a configuration on a 256 kbps HDLC interface:

```
Interface serial 0/0
```

```
Bandwidth 56
```

```
Ip bandwidth-percent eigrp 1 200
```

Based on this example, how much bandwidth is allocated for EIGRP traffic?

- A. 56 kbps
- B. 112 kbps
- C. 128 kbps
- D. 256 kbps

**Answer: B**

**Explanation:**

The bandwidth-percent command tells EIGRP what percentage of the configured bandwidth it may use. The default is 50 percent. Since the bandwidth command is also used to set the routing protocol metric, it may be set to a particular value for policy reasons. The bandwidth-percent command can have values greater than 100 if the bandwidth is configured artificially low due to such policy reasons.

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT207/technologies\\_tech\\_note09186a0080094063.shtml](http://www.cisco.com/en/US/tech/IT365/IT207/technologies_tech_note09186a0080094063.shtml)

**Question 8.**

Which command would display OSPF parameters such as filters, default metric, maximum paths, and number of areas configured on a router?

- A. show ip protocol
- B. show ip route
- C. show ip ospf interface
- D. show ip ospf

**Answer: A**

**Explanation:**

The show ip protocols command, displays parameters about timers, filters, metrics, network, and other information for the entire router.

**Reference:**

**Question 9.**

Cisco routers perform route summarization automatically for which three routing protocols?  
(Choose three)

- A. IS-IS
- B. IGRP
- C. OSPF
- D. EIGRP
- E. RIP v.1

**Answer: B, D, E**

**Explanation:**

Sending route summaries – Routing information advertised out an interface is automatically summarized at major (classful) network address boundaries by RIP, IGRP, and EIGRP. Specifically, this autonomous summarization occurs for those routes whose classful network address differs from the major network address of the interface to which the advertisement is being sent.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 79

**Question 10.**

A problem was reported that the 10.10.10.0/24 prefix was not injected into the local BGP table on RouterA. The following information is available from RouterA: configuration:

```
router bgp 65001
network 10.0.0.0
neighbor 172.16.1.1 remote-as 65002
no auto-summary
routing table information:
show ip route | include 10
O 10.10.0/24 [110/11] via 192.168.1.1, 2d00h, Ethernet0/0
Why is this prefix not in the local BGP table?
```

- A. This route is not a BGP learned route.
- B. The network command is wrong.
- C. The 172.16.1.1 neighbor is down.
- D. The prefix 10.10.10.0/24 is not a connected route.

**Answer: A**

**Explanation:**

The show ip route command will not display the BGP table. You must use the show ip bgp command to display the entries in the BGP routing table.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 348

**Question 11.**

Which of the following AS numbers is an example of a private AS number?

- A. 10080
- B. 48512

- C. 64128
- D. 64524

**Answer: D**

**Explanation:**

This autonomous system designator is a 16-bit number, with a range of 1 to 65535. RFC 1930 provides guidelines for the use of AS numbers. A range of AS number, 64512 through 65535, is reserved for private use, much like the private Internet Protocol (IP) addresses.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 312

**Question 12.**

Which command displays RIP routing transactions?

- A. show ip rip database
- B. show ip route
- C. show ip protocols rip
- D. debug ip rip
- E. debug ip routing

**Answer: D**

**Explanation:**

debug ip rip

Use the debug ip rip EXEC command to display information on RIP routing transactions. The no form of this command disables debugging output.

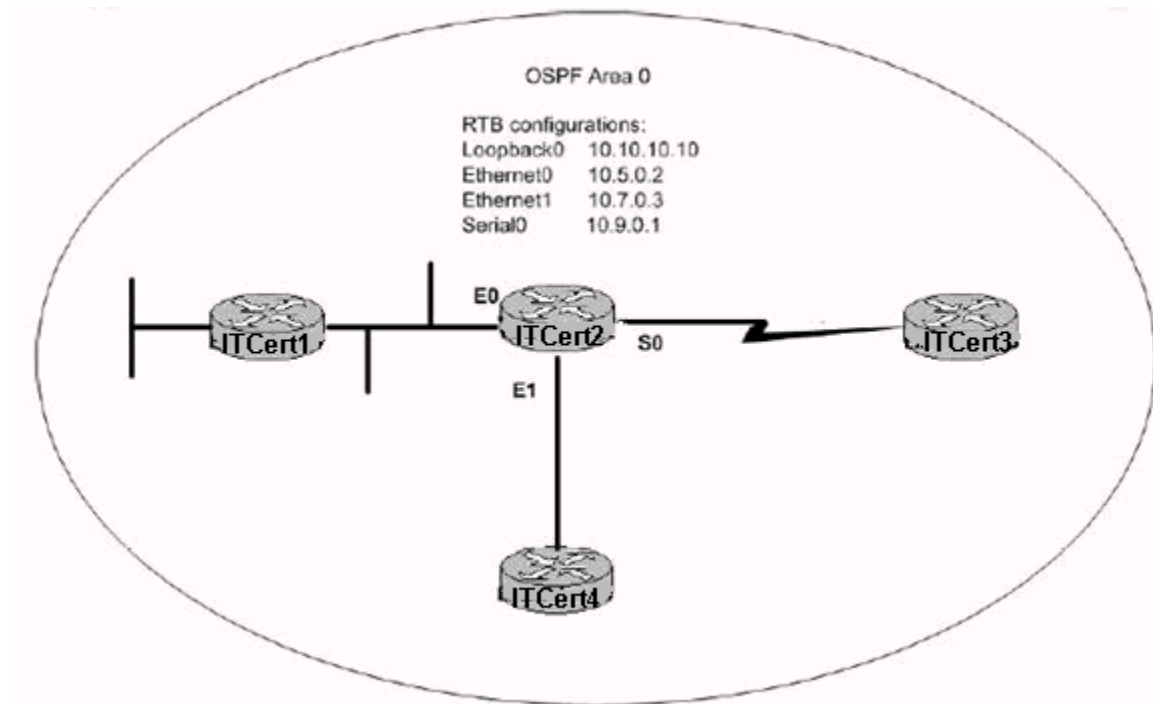
**Reference:**

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products\\_command\\_reference\\_chapter09186a008007ff66.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_command_reference_chapter09186a008007ff66.html)



**Question 13.**

**Exhibit:**



What is the OSPF router ID for ITCert2 assuming the router-id command is not used?

- A. 10.5.0.2
- B. 10.7.0.3
- C. 10.9.0.1
- D. 10.10.10.10

**Answer: D**

**Explanation:**

The highest ip address on an active interface is normally used as the OSPF router ID. This can be overridden by configuring an IP address on a loopback address on a loopback interface.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 126

**Question 14.**

In which two types of OSPF networks does a Designated Router (DR) election take place? (Choose two)

- A. Point-to-point
- B. Nonbroadcast multi-access
- C. Point-to-multipoint
- D. Broadcast multi-access

**Answer: B, D**

**Explanation:**

Mode Adjacency

NBMA Manual Configuration DR/BDR elected  
Broadcast Automatic DR/BDR elected

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 124

**Question 15.**

What are the three general address types of IPv6? (Choose three)

- A. Private
- B. Unicast
- C. Broadcast
- D. Public
- E. Multicast
- F. Anycast

**Answer: B, E, F**

**Explanation:**

• **IPv6 Address Type: Unicast** - An IPv6 unicast address is an identifier for a single interface, on a single node. A packet that is sent to a unicast address is delivered to the interface identified by that address.

• **IPv6 Address Type: Anycast** - An anycast address is an address that is assigned to a set of interfaces that typically belong to different nodes. A packet sent to an anycast address is delivered to the closest interface—as defined by the routing protocols in use—identified by the anycast address.

• **IPv6 Address Type: Multicast** - An IPv6 multicast address is an IPv6 address that has a prefix of FF00::/8 (1111 1111). An IPv6 multicast address is an identifier for a set of interfaces that typically belong to different nodes.

**Reference:**

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products\\_feature\\_guide\\_chapter09186\\_a0080110dd2.html#99899](http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide_chapter09186_a0080110dd2.html#99899)

**Question 16.**

What strategy can a network administrator use to minimize the effect of routing table updates on internal routers when a WAN interface frequently changes its state from up to down?

- A. Use a distance vector routing protocol.
- B. Use private IP addresses.
- C. Use dial-on-demand routing.
- D. Use route summarization.
- E. Use a routing protocol that tolerates route flapping.

**Answer: D**

**Explanation:**

Another advantage to using route summarization in a large complex network is that it can isolate topology changes from other routers. That is, if a specific link in the domain were flapping (going down and up rapidly), the summary route would not change, so no router external to the domain would need to keep modifying its routing table due to this flapping activity.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 76

**Question 17.**

In the following BGP configuration, which BGP network statement will inject the 10.10.0.0/16 prefix in the bgp table?

```
interface ethernet 0
ip address 10.10.10.1 255.255.0.0
!
int serial 0
ip address 172.16.1.1 255.255.255.252
!
router bgp 65001
neighbor 192.168.1.1 remote-as 65002
```

- A. network 10.0.0.0
- B. network 10.10.0.0 mask 255.255.0.0
- C. network 10.10.10.1 mask 255.255.255.255
- D. network 10.10.10.0 mask 255.255.255.0
- E. network 10.0.0.0 mask 255.255.0.0

**Answer: B**

**Question 18.**

When using VLSM in an EIGRP network, where can route summarization be accomplished?

- A. Manually on any router interface.
- B. Only at classless network boundaries.
- C. Only at classful network boundaries.
- D. Dynamically at the supernet boundary.

**Answer: C**

**Explanation:**

Sending route summaries – routing information advertised out an interface is automatically summarized at major (classful) network address boundaries by RIP, IGRP, and EIGRP.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 79

**Question 19.**

When would static routing be preferable to using a dynamic routing protocol? (Choose two)

- A. A medium to large network with redundant paths.
- B. Networks with a single entry point.
- C. Low maintenance routing is required.
- D. Highly adaptable networks.
- E. High degree of control in path selection is required.

**Answer: A, E**

**Explanation:**

- Define specific routes to use when two autonomous systems must exchange routing information, rather than having entire routing tables exchanged.
- Define routes to destinations over a WAN link to eliminate the need for a dynamic routing protocol- that is, when you do not want routing updates to enable or cross the link.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 463

**Question 20.**

At which location in a network does IS-IS use level-1 routing?

- A. Between domains.
- B. Between areas.
- C. Between intermediate systems in the same area.
- D. Between end systems and intermediate systems in the same area.

**Answer: C**

**Explanation:**

A two-level hierarchy is used to support large routing domains. A large domain may be administratively divided into areas. Each system resides in exactly one area.<sup>1</sup> Routing within an area is referred to as Level 1 routing.

Routing between areas is referred to as Level 2 routing. A Level 2 Intermediate System (IS) keeps track of the paths to destination areas. A Level 1 IS keeps track of the routing within its own area. For a packet destined for another area, a Level 1 IS sends the packet to the nearest Level 2 IS in its own area, regardless of what the destination area is. Then the packet travels via Level 2 routing to the destination area, where it may travel via Level 1 routing to the destination. It should be noted that selecting an exit from an area based on Level 1 routing to the closest Level 2 IS might result in suboptimal routing.<sup>2</sup>

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT381/technologies\\_white\\_paper09186a00800a3e6f.shtml](http://www.cisco.com/en/US/tech/IT365/IT381/technologies_white_paper09186a00800a3e6f.shtml)

**Question 21.**

What is the recommended way to perform route redistribution when exchanging routes between two protocols?

- A. Use one way route redistribution when there is one path.
- B. Use one way route distribution when there are multiple paths.
- C. Use static routes when there are multiple paths.
- D. Use two way route distribution when there is one path.
- E. Use two way route redistribution where there are multiple paths.
- F. Use static routes when there is one path.

**Answer: B, C**

**Explanation:**

B. One way redistribution- To avoid routing loops and problems with with varying convergence time, allow routes to be exchanged in only one direction, not both directions. In the other direction, you should consider a default route.

C. When you want to prevent routing loops – Many companies have large enough networks that redundant paths are prominent. In some cases, for example, when a path to the same destination is learned from two different routing protocols, you may want to filter the propagation of one of the paths.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 472

**Question 22.**

Given the following OSI IS-IS NSAP address:

47.040C.0061.040C.0056.0D12.00

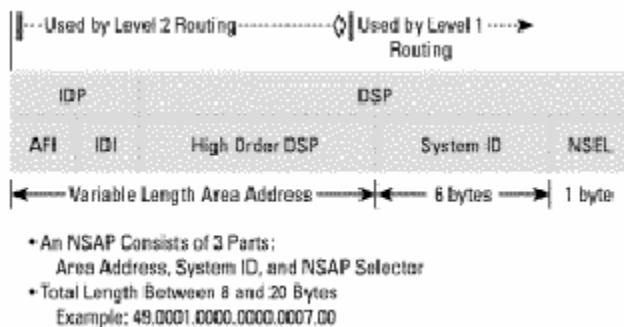
What is the Area ID?

- A. 00
- B. 46
- C. 47.040C
- D. 47.040C.0061
- E. 040C.0056.0D12

**Answer: D**

**Explanation:**

An NSAP address (figure 7) has two major parts: the initial domain part (IDP) and the domain specific part (DSP) (Figure 7). The IDP consists of a 1-byte authority and format identifier (AFI)



and a variable-length initial domain identifier (IDI), and the DSP is a string of digits identifying a particular transport implementation of a specified AFI authority. Everything to the left of the system ID can be thought of as the area address of a network node.

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT381/technologies\\_white\\_paper09186a00800a3e6f.shtml](http://www.cisco.com/en/US/tech/IT365/IT381/technologies_white_paper09186a00800a3e6f.shtml)

**Question 23.**

What is the effect of the following configuration commands?

```
ITCert2(config)#router rip
ITCert2(config-router)#version 2
ITCert2(config-router)#no auto-summary
```

- A. Subnets are summarized at the network boundary.
- B. Subnets are advertised across network boundaries.
- C. Subnet mask information is not passed in the routing updates.
- D. Subnets are made discontinuous.

**Answer: B**

**Explanation:**

To restore the default behavior of automatic summarization of subnet routes into network-level routes, use the auto-summary router configuration command. To disable this feature and transmit subprefix routing information across classful network boundaries, use the no form of this command.

**Reference:**

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products\\_command\\_summary\\_chapter09186a00800\\_d9c56.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_command_summary_chapter09186a00800_d9c56.html)

**Question 24.**

What is the purpose of the network command when configuring BGP?

- A. Local routes matching the network command are filtered from the BGP routing table.
- B. Local routes matching the network command can be installed into the BGP routing table.
- C. Routes matching the network command will be filtered from BGP routing updates.
- D. External routes matching the network command will be installed into the BGP routing table.

**Answer: B****Explanation:**

Use the network router configuration command to permit BGP to advertise a network if it is present in the IP routing table.

**Reference:**

Building Scalable Cisco Networks (Cisco Press) page 342

**Question 25.**

ITCertkeys.com is changing Internet service providers. As a result, they will need to install a local E-mail server. ITCert does not want to change the IP Addresses on all of its internal routers and servers. The ISP, Acme Inc. will allocate a registered class C address for ITCert to use. The current internal IP Address scheme will remain the same. Configure the router to provide network address translation (NAT) so that all internal PCs will use the single external IP Address assigned to the router interface.

Configure a static translation so that the E-mail server will be accessible from the Internet.

Privileged mode password: ITCert

IP Addresses are shown below:

Name: ITCertNAT

SO 192.168.15.1/24

E0 10.100.5.1/24

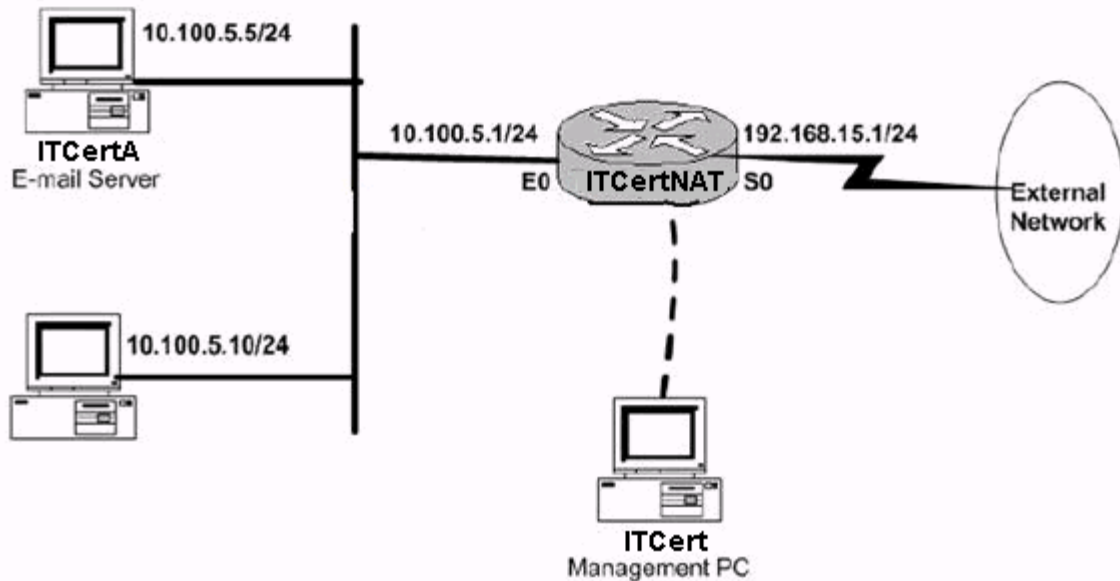
E-mail Server's External Address

192.168.15.5/24

E-mail Server's Internal Address

10.100.5.5/24

To configure the router click on a host icon that is connected to a router by a serial console cable.



**Answer:**

```
ITCertNAT#conf t
ITCertNAT(config)#access-list 5 permit 10.100.5.0 0.0.0.255
ITCertNAT(config)#ip nat pool LAN 192.168.15.1 192.168.15.1 netmask 255.255.255.0
ITCertNAT(config)#ip nat inside source list 5 pool LAN overload
ITCertNAT(config)#ip nat inside source static 10.100.5.5 192.168.15.5
ITCertNAT(config)#ip nat outside source static 192.168.15.5 10.100.5.5
ITCertNAT(config)#int s0
ITCertNAT(config-if)#ip add 192.168.15.5 255.255.255.0 sec
ITCertNAT(config-if)#ip nat outside
ITCertNAT(config-if)#int e0
ITCertNAT(config-if)#ip nat inside
ITCertNAT(config-if)#exit
ITCertNAT(config)#exit
ITCertNAT#copy run
```

**Question 26.**

Which method will conceal the internal IP address details from the outside world?

- A. Subnetting
- B. Supernetting
- C. Challenge Handshake Protocol
- D. Usernames and passwords

**Answer: B**

**Explanation:**

In large internetworks, hundreds or even thousands of networks can exist. In these environments, it is often not Desirable for routers to maintain all these routes in their routing table Route summarization (also called *route aggregation* or *supernetting*) can reduce the number of routes that a router must maintain because is it a method of representing a series of network numbers in a single summary address.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 250

**Question 27.**

If a company has different routing policy requirements than its Internet Service Providers, which routing protocol is recommended?

- A. IS-IS
- B. OSPF
- C. EIGRP
- D. RIPv2
- E. BGP4

**Answer: A**

**Explanation:**

In recent years, the IS-IS routing protocol has become increasingly popular, with widespread usage among Service Providers. It is a link state protocol, which enables very fast convergence with large scalability. It is also a very flexible protocol and has been extended to incorporate leading edge features such as MPLS Traffic Engineering.

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT381/technologies\\_white\\_paper09186a00800a3e6f.shtml](http://www.cisco.com/en/US/tech/IT365/IT381/technologies_white_paper09186a00800a3e6f.shtml)

**Question 28.**

Which information is found in an OSPF type 3, network summary link LSA?

- A. Summary of routes in the AS.
- B. Summary of link state in an OSPF area.
- C. Summary of IP subnets in an OSPF area.
- D. Summary of metric cost from ABR to ASBR.

**Answer: C**

**Explanation:**

Interarea-prefix LSAs for ABRs (Type 3)—Advertises internal networks to routers in other areas (interarea routes). Type 3 LSAs may represent a single network or a set of networks summarized into one advertisement.

Only ABRs generate summary LSAs. In OSPF for IPv6, addresses for these LSAs are expressed as *prefix*, *prefix length* instead of *address*, *mask*. The default route is expressed as a prefix with length 0.

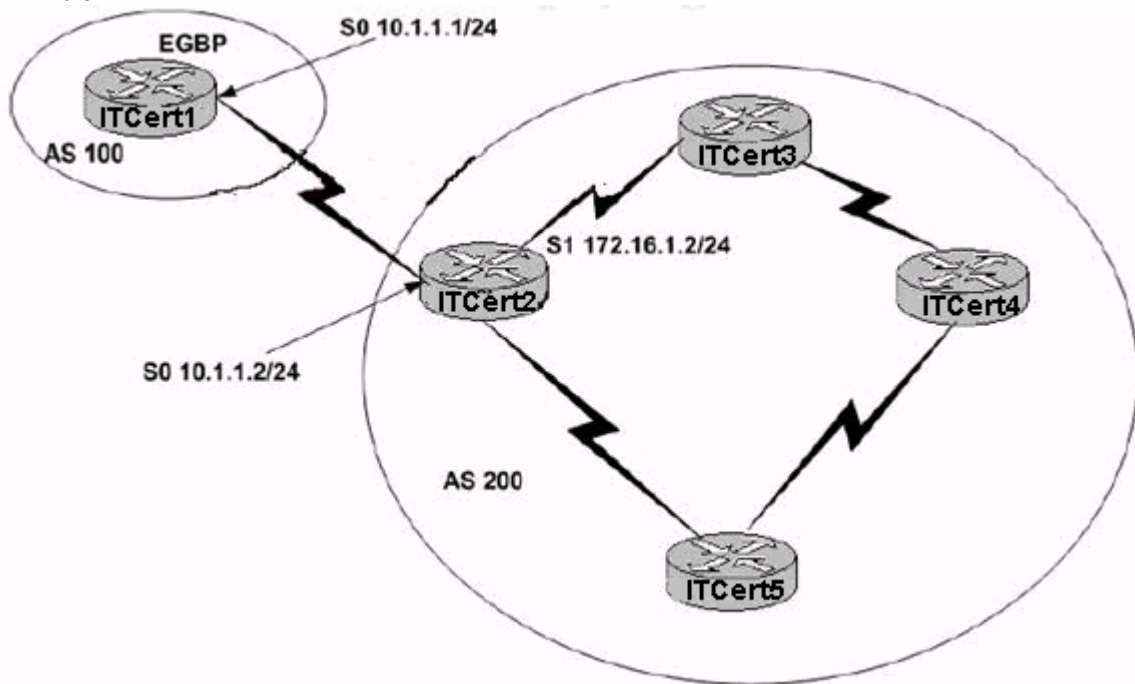
**Reference:**

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products\\_feature\\_guide\\_chapter09186a0080145c56.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps1839/products_feature_guide_chapter09186a0080145c56.html)



**Question 29.**

**Exhibit:**



Which two command sets will correctly configure ITCERT1 and ITCERT2 to exchange routing information via BGP? (Choose two)

- A. ITCERT2(config)#router bgp 200  
ITCERT2(config-router)#neighbor 10.1.1.1 remote-as 100
- B. ITCERT1(config)#router bgp 100  
ITCERT1(config-router)#exit  
ITCERT1(config)#interface S0  
ITCERT1(config-if)#neighbor 10.1.1.2 remote-as 200
- C. ITCERT1(config)#router bgp 100  
ITCERT1(config-router)#neighbor 10.1.1.2 remote-as 200
- D. ITCERT2(config)#router bgp 100  
ITCERT2(config-router)#exit  
ITCERT2(config)#interface S0  
ITCERT2(config-if)#neighbor remote-as 100
- E. ITCERT1(config)#router bgp 100  
ITCERT1(config-router)#network 10.0.0.0  
ITCERT1(config-router)#neighbor 10.1.1.2 remote-as 100
- F. ITCERT2(config)#router bgp 200  
ITCERT2(config-router)#network 10.0.0.0  
ITCERT2(config-router)#network 10.1.1.1 remote-as 200

**Answer: A, C**

**Question 30.**

Which EIGRP table is comparable to a Link State Adjacency table?

- A. Neighbor table
- B. Routing table
- C. Topology table

D. Successor table

**Answer: A**

**Explanation:**

Neighbor table – Each EIGRP router maintains a neighbor table that lists adjacent routers. This table is comparable to the neighborhood (adjacency) database used by OSPF.

**Reference:**

Building Scalable Cisco Networks (Cisco Press) page 250

**Question 31.**

What can be concluded from the following router command? (Choose two)  
ITCERT(config)#ip route 172.27.6.0 255.255.255.0 s0/0

- A. This is a route to a public network.
- B. There is only one path to this network from ITCERT.
- C. This is a route to interface s0/0 on the next hop router.
- D. Packets destined for this network are sent via interface s0/0 on ITCERT.
- E. Packets destined for this network enter router ITCERT through interface s0/0.

**Answer: B, D**

**Explanation:**

Ip route *prefix mask {address|Interface} [distance] [tag tag] [permanent]*

Prefix 172.27.6.0 mask 255.255.255.0 address 172.17.8.2

Address – The IP address of the next hop router that can be used to reach that network.

Interface – The network interface to use to get to the destination network.

**Reference:**

Building Scalable Cisco Networks (Cisco Press) page 464

**Question 32.**

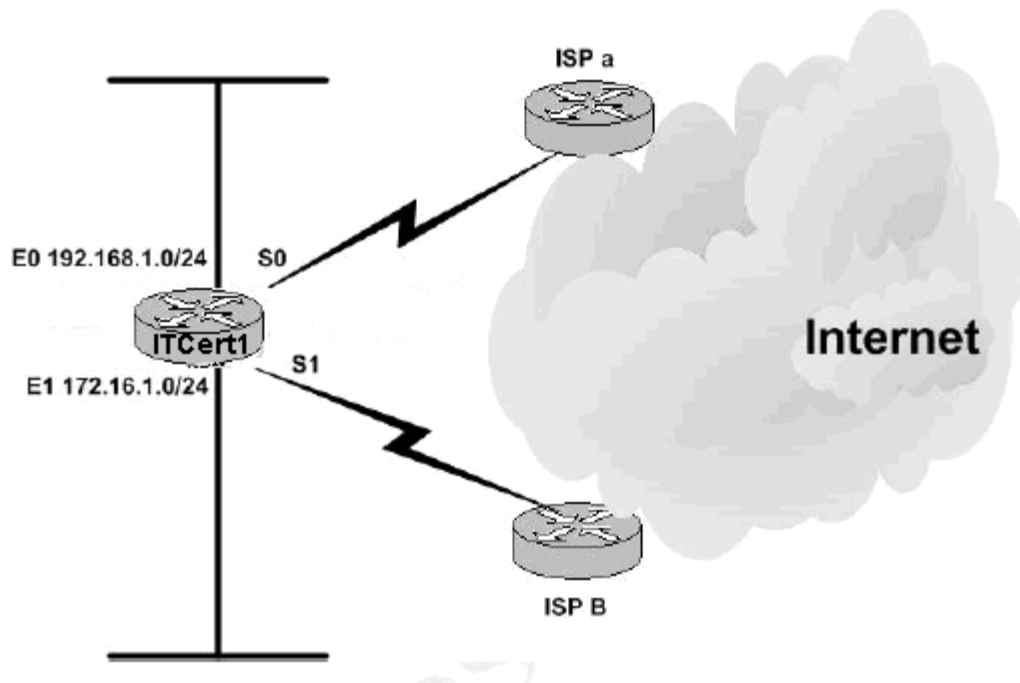
Which two characteristics are associated with the distribution layer of the three-layer hierarchical network design model?

- A. Reliable transport structure
- B. Route redistribution
- C. Optimized transport structure
- D. Address aggregation
- E. Unauthorized entry access control lists

**Answer: B, D**

**Question 33.**

**Exhibit:**



Which command set will apply a route map named ISPA to interface E0?

- A. ITCERT1(config)#interface e0  
ITCERT1(config-if)#ip route-map ISPA
- B. ITCERT1(config)#interface e0  
ITCERT1(config-if)#ip policy route-map ISPA
- C. ITCERT1(config)#interface e0  
ITCERT1(config-if)#policy route-map ISPA
- D. ITCERT1(Config)#interface e0  
ITCERT1(Config-if)#policy route map ISPA

**Answer: B**

**Explanation:**

Identifies the route map to use for PBR. One interface can only have one route-map tag, but you can have multiple route map entries with different sequence numbers. These entries are evaluated in sequence number order until the first match. If there is no match, packets will be routed as usual.

**Reference:**

[http://www.cisco.com/en/US/products/hw/switches/ps4324/products\\_configuration\\_guide\\_chapter09186a00801\\_9d0dd.html](http://www.cisco.com/en/US/products/hw/switches/ps4324/products_configuration_guide_chapter09186a00801_9d0dd.html)

**Question 34.**

What can be concluded from a binary IP address of:  
11000000.10100100.11000000.00000001?

- A. It is a Class B public address.
- B. It is a Class C public address.
- C. It is a Class B private address
- D. It is a Class C private address.
- E. It is a Class D experimental address.

**Answer: B**

**Explanation:**

11000000.10100100.11000000.00000001 = 192.164.192.1 = A public Class C address

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 66

**Question 35.**

Which routing protocol multicasts routing updates using Class D address 224.0.0.9?

- A. EIGRP
- B. OSPF
- C. IGRP
- D. RIPv2

**Answer: D**

**Explanation:**

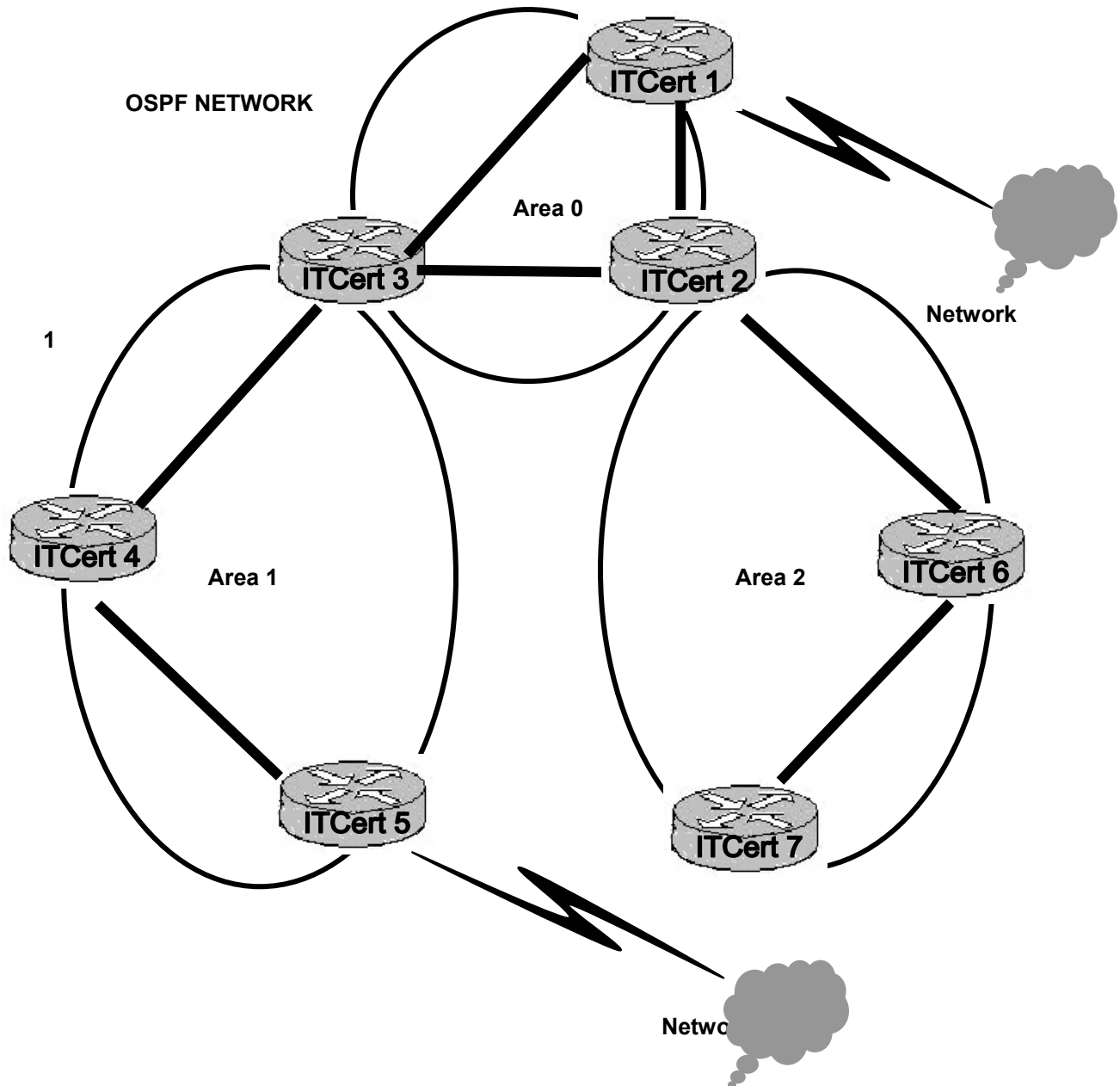
Class D addresses are not as widely used. Class D addresses are multicast addresses; some Class D multicast addresses used by routing protocols are as follows:

- OSPF – 224.0.0.5 and 224.0.0.6
- Routing Information Protocol version 2 (RIPsv2) – 224.0.0.9
- EIGRP – 224.0.0.10

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 69

Question 36.  
Exhibit:



Router ITCert5 uses an LSA type 7 to announce changes in the status of external network 22 to area 1.

Which OSPF term describes area 1?

- A. Backbone area
- B. Transit area
- C. Stubby area
- D. Totally stubby area
- E. Not-so-stubby area

**Answer: E**

**Explanation:**

o **Stub Areas:** These areas do not accept routes belonging to external autonomous systems (AS); however, these areas have inter-area and intra-area routes. In order to reach the outside networks, the routers in the stub area use a default route which is injected into the area by the Area Border Router (ABR).

o Normal Areas: These areas can either be standard areas or transit (backbone) areas. Standard areas are defined as areas that can accept intra-area, inter-area and external routes.

o backbone area is the central area to which all other areas in OSPF connect.

o Totally Stub Areas: These areas do not allow routes other than intra-area and the default routes to be propagated within the area. The ABR injects a default route into the area and all the routers belonging to this area use the default route to send any traffic outside the area.

o NSSA: This type of area allows the flexibility of importing a few external routes into the area while still trying to retain the stub characteristic. Assume that one of the routers in the stub area is connected to an external AS running a different routing protocol, it now becomes the ASBR, and hence the area can no more be called a stub area. However, if the area is configured as a NSSA, then the ASBR generates a NSSA external link-state advertisement (LSA) (Type-7) which can be flooded throughout the NSSA area. These Type-7 LSAs are converted into Type-5 LSAs at the NSSA ABR and flooded throughout the OSPF domain

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT480/technologies\\_tech\\_note09186a0080094a74.shtml](http://www.cisco.com/en/US/tech/IT365/IT480/technologies_tech_note09186a0080094a74.shtml)

**Question 37.**

What is correct about the BGP synchronization command? (Choose two)

- A. Synchronization must be enabled when implementing a multi-homed BGP connection to multiple ISPs.
- B. If it is turned ON, a prefix learned from IBGP neighbor is valid only if a non-bgp (IGP) route exists for that prefix.
- C. Synchronization is necessary when peering with an EBGP neighbor.
- D. Synchronization improves BGP routing convergence.
- E. Synchronization can be turned off if all the transit routers in an Autonomous system running full mesh IBGP.

**Answer: A, E**

**Explanation:**

If your autonomous system will be passing traffic through it from another autonomous system to a third autonomous system, it is very important that your autonomous system be consistent about the routes that it advertises. For example, if your BGP were to advertise a route before all routers in your network had learned about the route through your IGP, your autonomous system could receive traffic that some routers cannot yet route. To prevent this from happening, BGP must wait until the IGP has propagated routing information across your autonomous system. This causes BGP to be *synchronized* with the IGP. Synchronization is enabled by default. Only if all routers in the transit path in the AS are running BGP it is safe to turn synchronization off.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 33

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products\\_configuration\\_guide\\_chapter\\_09186a00800\\_877b5.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_configuration_guide_chapter_09186a00800_877b5.html)

**Question 38.**

In OSI terminology, what is a domain?

- A. A set of non-routing network nodes.
- B. A contiguously connected area that can reach all other areas.
- C. Contiguous set of routers and hosts and the data links that connect them.
- D. Any portion of an OSI network that is under a common administrative authority.

**Answer: D**

**Explanation:**

An AS is a collection of networks under a common administration that share a common routing strategy.

Autonomous systems are subdivided into areas, and an AS is sometimes called a domain.

**Reference:**

[http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito\\_doc/introint.htm](http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/introint.htm)

**Question 39.**

Which of the following NSAP addresses is a private, locally administered address?

- A. 39.0f01.0002.0000.0c00.1111.00
- B. 48.0f01.0002.0000.0c00.1111.00
- C. 49.0004.30ac.0000.3090.c7df.00
- D. 52.0f01.0002.0000.0c00.1111.00

**Answer: A**

**Explanation:**

ATA Network Service Access Point (NSAP) ATM Addresses

There are 3 types of private ATM addresses:

- NSAP encoding format for E.164 addresses - The authority and format identifier (AFI) is 45. These addresses are used in establishing ISDN calls by public networks, and they are normally used in public telephony.

- Data Country Code (DCC) ATA - The AFI is 39. These addresses are to be used in public networks.

For example, the initial domain identifier (IDI) value 0x84.0f identifies the United States.

- International Code Designator (ICD) AITA - The AFI is 47. These addresses are used in private organizations, and the ICD field indicates the code set or organization. Cisco uses by default ICD addresses.

**Reference:**

[http://www.cisco.com/en/US/tech/IT39/IT49/technologies\\_tech\\_note09186a00800c9761.shtml](http://www.cisco.com/en/US/tech/IT39/IT49/technologies_tech_note09186a00800c9761.shtml)

**Question 40.**

Cisco IOS only supports which IS-IS metric type?

- A. Default
- B. Delay
- C. Expense
- D. Error

**Answer: A**

**Explanation:**

The original IS-IS specification defines four different types of metrics. Cost, being the default metric, is supported by all routers. Delay, expense, and error are optional metrics. The delay metric measures transit delay, the expense metric measures the monetary cost of link utilization, and the error metric measures the residual error probability associated with a link.

The Cisco implementation uses cost only. If the optional metrics were implemented, there would be a link-state database for each metric and SPF would be run for each link-state database.

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT381/technologies\\_white\\_paper09186a00800a3e6f.shtml](http://www.cisco.com/en/US/tech/IT365/IT381/technologies_white_paper09186a00800a3e6f.shtml)

**Question 41.**

A router is configured for redistribution to advertise EIGRP routes into OSPF on a boundary router.

Given the configuration:

```
router ospf 1
```

```
redistribute eigrp 1 metric 25 subnets
```

What is the function of the 25 parameter in the redistribute command?

- A. It specifies the seed to be applied to the redistributed routes.
- B. It specifies the administrative distance on the redistributed routes.
- C. It specifies the metric limit of 25 subnets in each OSPF route advertisement.
- D. It specifies a new process-id to inject the EIGRP routes into OSPF.

**Answer: B**

**Explanation:**

Metric-value – Optional parameter used to specify the metric used for the redistribution route.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 456

**Question 42.**

Which routing protocol makes routing decisions based on network policies or rules, using different path attributes?

- A. EIGRP
- B. OSPF



- C. RIPv2
- D. BGP4
- E. IS-IS

**Answer: D**

**Question 43.**

Network Number

192.168.31.0/24  
192.168.32.0/24  
192.168.33.0/24  
192.168.34.0/24  
192.168.35.0/24  
192.168.36.0/24  
192.168.37.0/24  
192.168.38.0/24  
192.168.39.0/24  
192.168.40.0/24

What is the minimum number of CIDR blocks necessary to summarize the subnetworks given in the table?

- A. Two
- B. Three
- C. Four
- D. Five

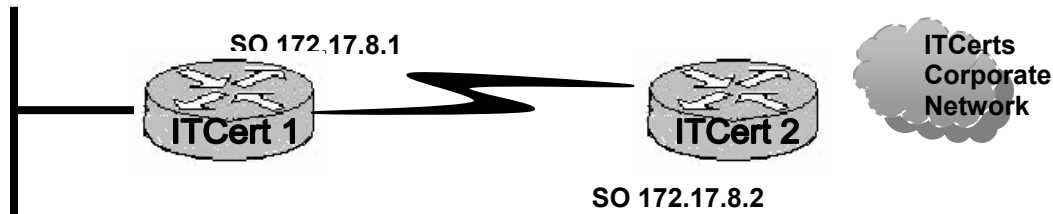
**Answer: A**

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 85

**Question 44.**

**Exhibit:**



**172.27.6.0/24**

Which command will configure a static route from the corporate network to 172.27.6.0?

- A. ITCERT1(config)#ip route 172.27.6.0 255.255.255.0 172.17.8.2
- B. ITCERT2(config)#ip route 172.27.6.0 255.255.0.0 172.17.8.2
- C. ITCERT2(config)#ip route 172.27.6.0 255.255.255.0 172.17.8.2
- D. ITCERT1(config)#ip route 172.27.6.0 255.255.0.0 172.17.8.1
- E. ITCERT2(config)#ip route 172.27.6.0 255.255.255.0 172.17.8.1

**Answer: E**

**Explanation:**

Ip route *prefix mask {address|Interface} [distance] [tag tag] [permanent]*

Prefix 172.27.6.0 mask 255.255.255.0 address 172.17.8.2

Address – The IP address of the next hop router that can be used to reach that network.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 464

**Question 45.**

What are two possible issues with redistributing dynamically learned routes from an IGP into BGP? (Choose two)

- A. Routing loops can occur.
- B. The routers are automatically summarized.
- C. External IGP learned routes might not necessarily have originated in this AS.
- D. The BGP process will ignore the external IGP learned routes.

**Answer: A, C**

**Explanation:**

If redistribution is used, care must be taken that only local routes are redistributed. For example, routes learned from other autonomous systems (that were learned by redistributing BGP into the IGP) must not be sent out again from the IGP, or routing loops could result.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 408

**Question 46.**

Which command will configure IGRP to advertise a default route?

- A. default-information originate
- B. ip default 172.27.0.0
- C. ip route 0.0.0.0 0.0.0.0 172.27.0.0

D. ip default-network 172.27.0.0

**Answer: E**

**Explanation:**

The ip default-network command is used as a method of distributing route information to other routers.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 467

**Question 47.**

If there is no loopback address in your OSPF configuration, what becomes the router ID?

- A. It defaults to 255.
- B. The name set by the hostname command.
- C. The highest IP address configured in the router.
- D. The priority number of the router set by the priority command.

**Answer: C**

**Explanation:**

The show ip ospf interface command verifies that interfaces have been configured in the intended areas. If no loopback address is specified, the interface with the highest address is the taken router ID. It also gives the timer intervals, including the hello interval, and shows the neighbour adjacencies.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 134

**Question 48.**

An ISP has assigned the address space of 192.168.100.0/24 to a customer. The customer wants to use this address space for WAN links by dividing the address space using a VLSM mask of 30 as follows:

192.168.100.0/30.

How many subnets will this provide for WAN links?

- A. 14
- B. 30
- C. 62
- D. 126
- E. 254

**Answer: C**

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 73

**Question 49.**

Drop and drag the EIGRP term in the options area to the correct description in the target area.

**EIGRP term Use these**

**Description**

Successor	Place Here	Lists adjacent routers
Routing table	Place Here	Route Entries for all destinations
Neighbor table	Place Here	Primary Route to destination
Feasible successor	Place Here	Best Routes to destinations
Topology table	Place Here	Backup route to destination

**Answer:**

**EIGRP term Use these**

**Description**

Neighbor table	Lists adjacent routers
Routing table	Route Entries for all destinations
Successor	Primary Route to destination
Topology table	Best Routes to destinations
Feasible successor	Backup route to destination

Neighbor table - lists adjacent routers

Topology Table - route entries for all destinations.

Routing table - best routes to a destination

Successor - primary route used to reach a destination

Feasible successor - backup route to the destination.

**Explanation:**

- Neighbor table – Each EIGRP router maintains a neighbor table that lists adjacent routers. This table is comparable to the neighborhood (adjacency) database used by OSPF.

- Topology Table – An EIGRP router maintains a topology table for each network protocol configured: IP, IPX, and AppleTalk. All learned routes to a destination are maintained in the topology table.

- Routing table – EIGRP choose the best routes to a destination from the topology table and places these routes in the routing table. The router maintains one routing table for each network protocol.

- Successor – This is the primary route used to reach a destination. Successors are kept in the routing table.

- Feasible successor – This is a neighbor that is downstream with respect to the destination, but it is not the least-cost path and thus is not used for forwarding data. In other words, this is a backup route to the destination. These routes are selected at the same time as successors, but are kept in the topology table.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 250

**Question 50.**

Router R1 is the headquarters router in a hub and spoke topology supporting 24 remote offices. Point-to-multipoint Frame Relay EIGRP network is deployed between the headquarters and the remote offices.

There is no bandwidth command configured under either the major serial interface or the subinterfaces on router R1.

What is the bandwidth of each Frame Relay connection perceived by the EIGRP process?

- A. 65 kbps
- B. 128 kbps
- C. 1.544 Mbps
- D. 1.536 Mbps

**Answer: B**

**Explanation:**

These recommendations are described in terms of configuring the interface "bandwidth" parameter (with EIGRP being able to use 50 percent of that bandwidth by default). If the interface bandwidth configuration cannot be changed because of routing policy considerations, or for any other reason, the bandwidth-percent command should be used to control the EIGRP bandwidth. On low-speed interfaces, raising the available bandwidth for EIGRP above the default of 50 percent is advisable in order to improve convergence.

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT207/technologies\\_tech\\_note09186a0080094063.shtml](http://www.cisco.com/en/US/tech/IT365/IT207/technologies_tech_note09186a0080094063.shtml)

**Question 51.**

Why is OSPF the preferred choice over RIPv1 and RIPv2 for an open standard routing protocol?

- A. Greater CPU overhead.
- B. Greater router memory requirements.
- C. Greater scalability.
- D. Simpler distance vector algorithm.
- E. Simpler configuration
- F. Simpler route selection.

**Answer: C, F**

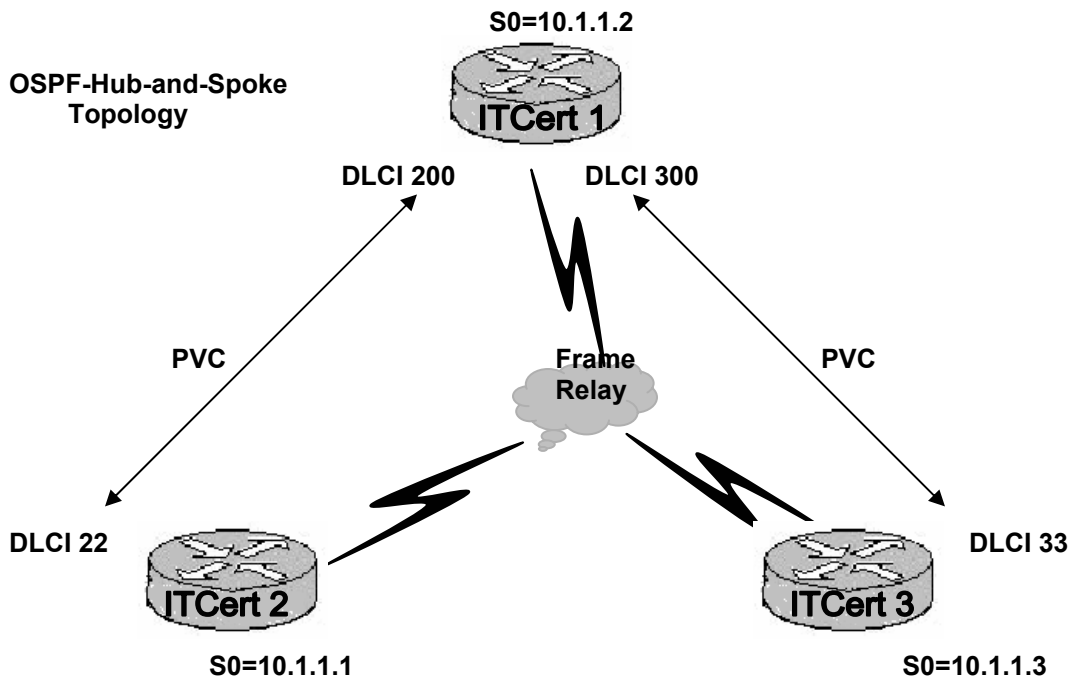
**Explanation:**

- Support for variable length subnet masks (VLSMs)
- Method for path selection

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 99 + 100

**Question 52.**  
**Exhibit:**



Which three commands are required on Router ITCert1 interface serial 0 for OSPF to operate on this network? (Choose three)

- A. ip ospf network point-to-point
- B. ip ospf network point-to-multipoint
- C. frame-relay map ip 10.1.1.1 200
- D. frame-relay map ip 10.1.1.3 300
- E. frame-relay map ip 10.1.1.1 200 broadcast
- F. frame-relay map ip 10.1.1.3 300 broadcast

**Answer: B, E, F**

**Explanation:**

The ip ospf network command, typed under the interface configuration mode, is used to specify the OSPF network configuration and sets the network mode to point-to-multipoint

Dlci- Data-link connection identifier (DLCI) number.

Broadcast - Forwards broadcasts to the specified IP address.

**Reference:**

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1830/products\\_feature\\_guide09186a0080087b42.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps1830/products_feature_guide09186a0080087b42.html)

**Question 53.**

What are two parameters that the show ip ospf interface command provide? (Choose two)

- A. Router ID
- B. Summary link counts
- C. Neighbor adjacencies

D. Link-state update interval

**Answer: A, C**

**Explanation:**

The show ip ospf interface command verifies that interfaces have been configured in the intended areas. If no loopback address is specified, the interface with the highest address is the taken router ID. It also gives the timer intervals, including the hello interval, and shows the neighbour adjacencies.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 134

**Question 54.**

Drag-and-drop the routing protocol characteristic in the options to the protocol it matches in the target area.

1000 Routers Per area	Place here	Place here
50 Routers Per area	Place here	Place here
Routers belong to one level 2 area	Place here	Place here
Flexible Extension of backbone	Place here	Place here
Backup Designate Router	Place here	Place here
Boundaries lie inside routers		
Boundaries lie on links		
Forms Adjancies with all neighbors		

**Answer:**

50 routers per area	1000 routers per area
Backup designated router	Routers belong to one level 2 area
Boundaries lie inside Routers	Boundaries lie on links
Place here	Forms adjancies with all neighbors
Place here	Flexible extension of backbone

**Question 55.**

Which statements are true regarding on OSPF link state database? (Choose three)

- A. Each router has an identical link state database.
- B. External routes are imported into a separate link state database.
- C. Synchronization of link state databases is maintained via flooding of LSAs.
- D. Information in the link state database is used to build a routing table by calculating a shortest-path tree.
- E. Link state databases are refreshed every 10 minutes in the absence of topology changes.

**Answer: A, C, D**

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 178

**Question 56.**

Which routing protocol is defined by the OSI protocol suite at the network layer?

- A. End System-to End System
- B. Routing Information Protocol
- C. Interior Gateway Routing Protocol
- D. Intermediate System-to-Intermediate System

**Answer: D**

**Explanation:**

Intermediate System-to-Intermediate System (IS-IS) Protocol is an intradomain Open System Interconnection (OSI) dynamic routing protocol specified in International Organization for Standardization (ISO) 10589. The protocol is designed to operate in OSI Connectionless Network Service (CLNS). Data is carried using the protocol specified in ISO 8473.

OSI CLNS is a network layer service similar to bare IP service. A CLNS entity communicates over Connectionless Network Protocol (CLNP) with its peer CLNS entity.

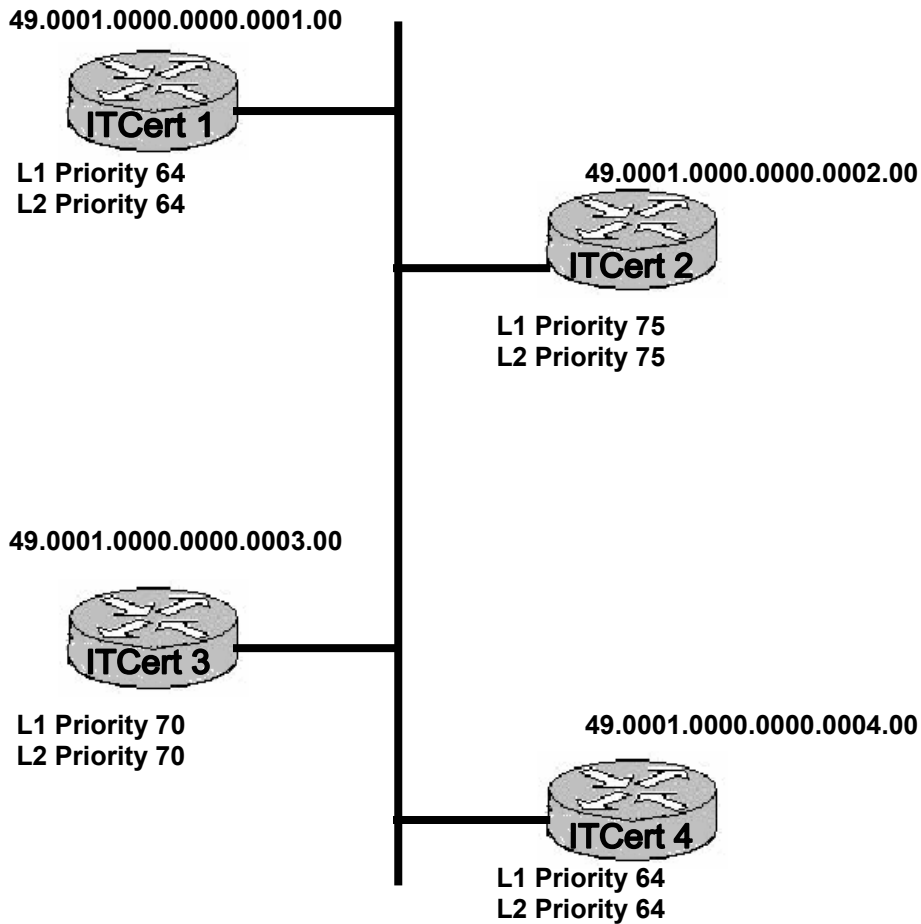
**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT381/technologies\\_white\\_paper09186a00800a3e6f.shtml](http://www.cisco.com/en/US/tech/IT365/IT381/technologies_white_paper09186a00800a3e6f.shtml)



**Question 57.**

**Exhibit:**



Given the diagram, which router will be the level-2 DIS on this segment?

- A. ITCert1
- B. ITCert2
- C. ITCert3
- D. ITCert4
- E. None

**Answer: B**

**Explanation:**

Reserved/circuit type—Top 6 bits reserved; bottom 2 bits value = 0 indicates reserved; value = 1 indicates

Level 1; value = 2 indicates Level 2; value = 3 indicates Level 1 and 2.

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT381/technologies\\_white\\_paper09186a00800a3e6f.shtml](http://www.cisco.com/en/US/tech/IT365/IT381/technologies_white_paper09186a00800a3e6f.shtml)

**Question 58.**

Which two benefits are associated with classless routing protocols? (Choose two)

- A. Support for VLSM.
- B. Support for FLSM.
- C. Summarization of discontinuous subnets.
- D. Auto-summarization across network boundaries.
- E. The ip classless command improves convergence.

**Answer: A, C**

**Explanation:**

- A. Classless routing protocols support VLSM, and that, in turn, leads to more efficient allocation of subnet masks to meet different host requirements on different subnetworks, resulting in better utilization of host addresses.
- C. Because subnets routes are propagated throughout the routing domain, summarization is often required to keep the routing tables at a manageable size.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 19 + 20

**Question 59.**

Given the following partial configuration for Router A: interface serial0  
ip address 10.1.1.1 255.255.255.0 encapsulation frame-relay  
ip ospf network point-to-multipoint router ospf7 network 10.1.1.0 0.0.0.255 area 0  
Which two statements are correct? (Choose two)

- A. DB/BDR elections do not take place.
- B. The router is restricted to a hub and spoke topology.
- C. The area 0 NBMA cloud is configured as more than one subnet.
- D. OSPF neighbor statements are not necessary.

**Answer: C, D**

**Explanation:**

Backbone area (transit area) – when interconnecting multiple areas, the backbone area is the central entity to which all other areas connect. The backbone area is always labelled Area 0. The neighbor command became somewhat obsolete with the introduction of the capability to configure other network modes for the interface, regardless of the underlying physical topology.

**Reference:**

Building Scalable Cisco Networks (Ciscopress) page 130 and 181

**Question 60.**

What is the proper command to display the Level-2 routing table in Integrated IS-IS?

- A. show isis database
- B. show clns traffic
- C. show ip route
- D. show clns route

**Answer: A**

**Explanation:**

The show isis database (detail) command displays the contents of the IS-IS database. Below is the output of this command when issued on R2. Since IS-IS is a link state protocol, the link state database should be the same for any router in the same area.

**Reference:**

[http://www.cisco.com/en/US/tech/IT365/IT381/technologies\\_configuration\\_example09186a0080093f38.shtml](http://www.cisco.com/en/US/tech/IT365/IT381/technologies_configuration_example09186a0080093f38.shtml)

**Question 61.**

Why is it necessary to redistribute or advertise IGP (such as OSPF and EIGRP) routes into BGP?

- A. So BGP can propagate this information to other IGP neighbors.
- B. So BGP can propagate this information to other IBGP neighbors.
- C. So BGP can propagate this information to other EBGP neighbors.
- D. So BGP can propagate this information to other OSPF neighbors.

**Answer: B**

**Explanation:**

How BGP Selects Paths

A router running Cisco IOS Release 12.0 or later does not select or use an IBGP route unless both of the following are true:

- the router has a route available to the next-hop router
- the router has received synchronization via an IGP (unless IGP synchronization has been disabled)

**Reference:**

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products\\_configuration\\_guide\\_chapter09186a00800877b5.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_configuration_guide_chapter09186a00800877b5.html)

**Question 62.**

Why should subinterfaces be configured in an OSPF NBMA topology?

- A. To conserve IP addressing space.
- B. To avoid split-horizon issues with the routing protocol.
- C. Because logical interfaces are more reliable than physical interfaces.
- D. Subinterfaces remain up when the physical interface changes to a down state.

**Answer: B**

**Explanation:**

When configuring routers in a NBMA topology, subinterfaces are typically used. A physical interface can be split into multiple logical interfaces, called subinterfaces, with each subinterface being defined as point-to-multipoint interface. Subinterfaces originally were created to better handle issues caused by split horizon over NBMA and distance vector-based routing protocols.

**Reference:**

Building Scalable Cisco Networks (Cisco Press) page 120

**Question 63.**

You want to retrieve the Level-2 routing table in Integrated IS-IS. Which IOS command should you use?

- A. show isis route
- B. show clns route
- C. show isis database
- D. show clns neighbors

**Answer: B**

**Explanation:**

The show clns route command is used to display all of the destinations to which this router knows how to route packets. The output includes the IS-IS Level 2 routing table as well as static and ISO-IGRP learned prefix routes.

**Reference:**

Cisco, ISO CLNS Commands

**Incorrect Answers**

A: The show isis routes command is used to display the IS-IS Level 1 forwarding table for IS-IS learned routes.

C: The show isis database command is used to display the IS-IS link state database.

D: The show clns neighbors command displays both IT and IS neighbors.

**Question 64.**

Your trainee is configuring a router. He wants to configure Integrated IS-IS to route IP. He knows that he must use the command listed in the exhibit. In which mode should he use this command?

- A. Line configuration mode
- B. Router configuration mode
- C. Global configuration mode
- D. Interface configuration mode

**Answer: D**

**Explanation:**

To configure an IS-IS routing process for IP on an interface, use the ip router isis interface configuration command.

**Note:**

To enable IS-IS, perform the following tasks starting in global configuration mode:

**Step 1: router isis**

Enable IS-IS routing and specify an IS-IS process for IP, which places you in router configuration mode.

**Step 2: net *network-entity-title***

Configure NETs for the routing process; you can specify a name for a NET as well as an address.

**Step 3: interface *type number***

Enter interface configuration mode.

**Step 4: ip router isis [*tag*]**

Specify the interfaces that should be actively routing IS-IS.

**Reference:**

Cisco, Configuring Integrated IS-IS

**Incorrect Answers**

**A, B, C:** The **ip router isis** cannot be used in either line, router or Global configuration mode.

**Question 65.**

Your trainee is curious why Integrated IS-IS Level-3 area routing is not supported by Cisco routers. What should you tell her?

- A. The System ID on a Cisco router is limited to 6 bytes.

- B. The NET on a Cisco router is restricted to a maximum of 8 bytes.
- C. The lack of Domain portion of the NSAP only accommodates for 2 levels of routing hierarchy.
- D. Cisco routers cannot route CLNS data that use the ISO/IEC 10589 standard of NSAP addressing.
- E. Since the NSAP service identifier (N-SEL) must always be set to 00, no other service types are available.

**Answer: C**

**Explanation:**

Note: Integrated IS-IS is a version of the OSI IS-IS routing protocol that uses a single routing algorithm to support more network layer protocols than just CLNP. Integrated IS-IS sometimes is called Dual IS-IS, named after a version designed for IP and CLNP networks. Only one IS-IS process is allowed whether you run it in integrated mode, ISO CLNS only, or IP only.

**Question 66.**

What representation is used in IS-IS to identify LAN interfaces?

- A. broadcast
- B. point-to-point
- C. pseudo-node
- D. non-broadcast
- E. point-to-multipoint

**Answer: A**

**Explanation:**

The types of networks that IS-IS defines include Point-to-point networks and Broadcast networks.

**Reference:**

Cisco, Introduction to Intermediate, System-to-Intermediate System Protocol  
[http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys\\_wp.htm](http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys_wp.htm)

**Incorrect Answers**

**B:** Point-to-point networks, such as serial lines, connect a single pair of routers.

**C:** A Designated Intermediate System (DIS) creates a pseudonode (a virtual node), and all the routers on a LAN, including the DIS, form an adjacency with the pseudonode instead of forming  $n*(n-1)$  order adjacencies with each other in a full mesh. DIS are not used by default however.

**D:** Non-broadcast is not used by IS-IS.

**E:** Point-to-multipoint is not used by IS-IS.

**Question 67.**

IS-IS routers can be classified into different types. Which two IS-IS router types provide intra-area routing services? (Choose two)

- A. L1 IS
- B. L1 IT
- C. L2 IS
- D. L2 IT
- E. L1/L2 IS

**Answer: A, E**

**Explanation:**

L1 IS and L1/L2 IS routers provide intra-area routing services.

**Reference:**

RFC2966

**Question 68.**

As many routing protocols IS-IS use areas. To what must each IS-IS area be connected?

- A. Area 0
- B. Area 1
- C. Level-1 backbone
- D. Level-2 backbone
- E. External IS-IS areas

**Answer: D**

**Explanation:**

Small IS-IS networks are built as a single area that includes all the routers in the network. As the network grows larger, it is usually reorganized into a backbone area made up of the connected set of all Level 2 routers from all areas, which is in turn connected to local areas.

**Reference:**

Cisco, IS-IS Multiarea Support

**Incorrect Answers**

**A, B:** Area 0 or Area 1 has no special significance in IS-IS.

**C:** Level 2, not Level 1.

**E:** This is not a requirement.

**Question 69.**

An IS-IS router can form adjacencies to different types of IS-IS routers depending on which type it is. To which routers can a Level 1-IS router establish an adjacency? (Select two.)

- A. Any Level-1 IS in any area.
- B. Any Level-2 IS in any area.
- C. Any Level-1 IS in the same area.
- D. Any Level-2 IS in the same area.
- E. Any Level-1/Level-2 IS in the same area.

**Answer: C, E**

**Explanation:**

A Level-1 IS router can establish adjacencies with other routers Level-1 and Level-1/Level-2 IS routers within the same area.

**Incorrect Answers**

**A:** Level-1 adjacencies can only be established within one single area.

**B, D:** Level-2 adjacencies require Level-2 IS routers.

**Question 70.**

What use are PSNPs on a point-point IS-IS network connection?

- A. Acknowledge LSPs.
- B. Replace IIH packets.
- C. Establish adjacencies.
- D. Send link-state changes.

**Answer: A****Explanation:**

Partial sequence number PDUs (PSNPs) are used to request an LSP (or LSPs) and acknowledge receipt of an LSP (or LSPs).

**Reference:**

Cisco, Introduction to Intermediate, System-to-Intermediate System Protocol  
[http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys\\_wp.htm](http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys_wp.htm)

**Question 71.**

Both IS-IS and OSPF use the notion of a backbone. OSPF use the Area 0 as the backbone. What area number does IS-IS use for the backbone?

- A. Area 0
- B. Area 1
- C. Any legal area number.
- D. There is no backbone area number.

**Answer: D****Explanation:**

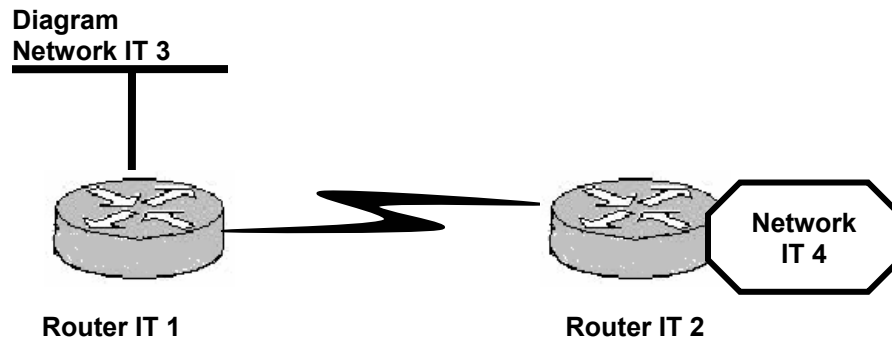
IS-IS does not have a backbone area like the OSPF area 0. The IS-IS backbone is a contiguous collection of Level 2-capable routers, each of which can be in a different area

**Reference:** Cisco, Introduction to Intermediate, System-to-Intermediate System Protocol  
[http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys\\_wp.htm](http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys_wp.htm)

**Question 72.**

**Exhibit:**

**RouterIT1(config)#ip default-network *Network IT3***



Your networks, as shown in the diagram above, have all been configured with RIP. You use the command shown the exhibit at Router IT1. Where will *Network T3* appear as the default network?

- A. Router IT1 only-
- B. Router IT2 only.
- C. Both routers.
- D. Neither routers.

**Answer: B**

**Explanation:**

The ip default-network command is used as a method of distributing default route information to other routers. When running RIP, you can create the default route by using the ip defaultnetwork command. If the router has a directly connected interface onto the network specified in the ip default-network command, RIP will generate (or source) a default route to its RIP neighbor routers.

**Reference:**

**Incorrect Answers**

- A, C:** The command provides no functionality for the router on which it is configured.  
**D:** Router IT2 will be configured with the default-network as configured on Router IT1.

**Question 73.**

Your ITCert trainee Bob wants you to tell him some facts on Cisco IS-IS NSAP address System IDs. What three things should you tell him? (Select three.)

- A. System IDs can vary in size within a domain.
- B. The System ID identifies a node in an IS-IS network.
- C. The System ID must be unique within a Level-1 area.
- D. The System ID must be unique within a Level-2 area.
- E. The System ID must be the MAC address of the router.

**Answer: B, C, D**

**Explanation:**

- B:** Each system ID within an area must be unique. It is used to identify a IS-IS node.  
**C:** All Level 1 routers and hosts in an area must have an NSAP with the same area address.



**D:** Level 2 routers advertise their own area addresses (NSAP) to the other Level 2 routers in the backbone.

**Reference:**

Introduction to Intermediate System-to-Intermediate System Protocol

[http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys\\_wp.htm](http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys_wp.htm)

**Incorrect Answers**

**A:** All ISs and ITs in a routing domain must have system IDs of the same length. Furthermore, Cisco implements a fixed length of 6 bytes for the system ID.

**E:** There are several techniques for creating unique system IDs

- \* Start numbering 1, 2, 3, 4, and so on.

- \* Use Media Access Control (MAC) addresses.

- \* Convert and use the loopback IP address: 192.168.11.1 --> 192.168.011.001--> 1921.6801.1001.

**Question 74.**

You have two autonomous systems. They use different routing protocols and there are redundant paths between them. Which feature in IOS would prevent routing loops between these two autonomous systems?

- A. Route filtering.
- B. Passive interfaces.
- C. Static redistribution.
- D. Two-way redistribution.

**Answer: A**

**Explanation:**

Multiple autonomous systems or routing domains can share route information through the redistribution process. Proper implementation of redistribution requires route filters to prevent feedback loops from forming. It is strongly recommended that redistribution between multiple ASs or multiple routing protocols be accompanied by route filters.

**Reference:**

CCNP #640-503 Building Scalable Cisco Networks (Cisco Press), More EIGRP Scalability Rules

**Question 75.**

IS-IS routers can be classified into different types. Each type of IS-IS router can establish adjacencies to certain types of IS-IS routers.

In particular, with which types of routers can a Level-1/Level-2 IS router establish adjacencies? (Choose four)

- A. Any Level-1 IS in any area.
- B. Any Level-2 IS in any area.
- C. Any Level-1 IS in the same area.
- D. Any Level-1/Level-2 IS in any area.
- E. Any Level-1/Level-2 IS in the same area.

**Answer: B, C, D, E**

**Explanation:**

A Level-1/Level-2 IS routers can establish adjacencies with Level-1 in the same area, and with Level-1/Level-2 IS or Level 2 IS routers in any area.

**Incorrect Answers**

**A:** Level 1 IS routers can only form adjacencies with routers within the same area.

**Reference:**

Introduction to Intermediate System-to-Intermediate System Protocol  
[http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys\\_wp.htm](http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/insys_wp.htm)

**Question 76.**

Every route map ends with an implicit “deny any” rule. What is the effect of this implicit rule?

- A. Packets that reach the end of the route map are discarded.
- B. Packets are forwarded to the null interface for special handling.
- C. Packets that reach the end of the route map are routed in a normal fashion.
- D. Packets that reach the end of the route map are returned in the originating interface.

**Answer: A**

**Explanation:**

The implicit deny any in every route map makes packages be discarded if no matching criteria are met.

**Question 77.**

As a network administrator at ITCert you must select a routing protocol for a large network. What would permit EIGRP to facilitate large scalable networks? (Choose three)

- A. A tiered network design model.
- B. Sufficient memory on the router.
- C. Multiple EIGRP autonomous systems.
- D. Good address space allocation schema.

**Answer: A, B, D**

**Explanation:**

**A:** A tiered network design model such as Core, Distribution, Access is also needed for large networks.

**B:** Sufficient capacity of the routers, in particular the memory, is required for large networks.

**D:** Good allocation of address space is required- Each region should have an unique address space so route summarization is possible

**Question 78.**

You want to configure your Cisco router with EIGRP for IP. With what IOS command should you start this configuration task?

- A. ip eigrp routing
- B. router eigrp *process-id*
- C. ip eigrp *autonomous-system-number*
- D. router eigrp *autonomous-system-number*

**Answer: D**

**Explanation:**

Perform the following steps to configure EIGRP for IP:

**Step 1** Enable EIGRP and define the autonomous system.

routerIT(config)# router eigrp autonomous-system-number

**Step 2** Indicate which networks are part of the EIGRP autonomous system.

routerIT(config-router)# network network-number

**Step 3** Define bandwidth of a link for the purposes of sending routing update traffic on the link.

router<config-if>#bandwidth kilobits

**Question 79.**

Your ITCert trainee Bob wants to know why OSPF is preferred over RIP Version 1. What should you tell Bob? (Select two.)

- A. OSPF maintains smaller routing tables.
- B. OSPF cost metric is based on number of hops.
- C. OSPF only sends routing updates when necessary.
- D. OSPF VLSM allows more efficient use of IP addresses.

**Answer: C, D**

**Explanation:**

**C:** RIP use periodic broadcast of the entire routing table, while OSPF use event-triggered announcements.

**D:** RIP Version 1 does not support VLSM.

**Incorrect Answers**

**A:** The size of the routing table is of the same magnitude.

**B:** RIP uses hop as cost metric.

**Question 80.**

You are configuring a Frame Relay connection between two Cisco routers. You want the routers to use OSPF in an NBMA environment. Which configuration should you use?

- A. Point-to-point over sub-interfaces.
- B. Point-to-multipoint star configuration.
- C. Point-to-multipoint using a single subnet.
- D. Point-to-multipoint nonbroadcast using a single subnet.

**Answer: A**

**Reference:**

RFC1586, Guidelines for Running OSPF Over Frame Relay Networks

**Question 81.**

Your ITCert trainee Bob knows that OSPF supports VLSM. He is curious how OSPF accomplishes this support of VLSM. What should you tell him?

- A. Uses route summarization.
- B. Maintains a topological database.
- C. Carries subnet mask information in the route updates.
- D. Allocates addresses in groups to support multiple areas.

**Answer: C**

**Explanation:**

Each route update includes subnet mask information.

**Incorrect Answers**

**A:** VLSM allows route summarization, but VLSM does not use route summarization.

**B:** A topological database does not contain VLSM information.

**D:** This is not the way VLSM work.

**Question 82.**

You have configured the route summarization 172.17.200.0/21. Which of the following four addresses would be included in your route summarization?

- A. 172.17.198.0
- B. 172.17.206.0
- C. 172.17.217.0
- D. 172.17.224.0

**Answer: B**

**Explanation:**

We list the network address binary and see which subnet address match the 21 leftmost bits of the route summarization..

Decimal	1st Octet	2nd Octet	3rd Octet	4th Octet
172.17.200.0	10101100	00010001	11001000	00000000
172.17.198.0	10101100	00010001	11000110	00000000
172.17.206.0	10101100	00010001	11001110	00000000
172.17.217.0	10101100	00010001	11011001	00000000
172.17.224.0	10101100	00010001	11100000	00000000

**Question 83.**

You are configuring a totally stubby area in OSPF. What configuration must the ABR have that are not required on the internal area routers?

- A. A virtual link to area 0.
- B. OSPF summarization command.
- C. default-cost extension to the area command.
- D. no-summary extension to the area stub command.

**Answer: D**

**Explanation:**

The no-summary extension of the area stub command is used only for ABRs connected to totally stubby areas. It prevents an ABR from sending summary link advertisements into the stub area. This option is used for creating a totally stubby area.

**Question 84.**

BGP communities are a means of tagging routes to ensure consistent filtering or route-selection policy.

BGP communities are configured with the BGP community attribute. What properties does this attribute have?

- A. Optional and transitive.
- B. Optional and non-transitive.
- C. Well-known and mandatory.
- D. Well-known and discretionary.

**Answer: A**

**Explanation:**

The community attribute is an optional transitive attribute that can be in the range 0 to 4,294,967,200. Each network can be a member of more than one community.

**Question 85.**

You are configuring BGP on your Cisco router. What can be said about the network command?

- A. Local routers matching the network command are filtered from the BGP routing table.
- B. Local routers matching the network command can be installed into BGP's routing table.
- C. Sending and receiving BGP updates is controlled by using a number of different filtering methods.
- D. The route to a neighbor autonomous system must have the correct MED applied to be installed into BGP's routing table.

**Answer: B**

**Explanation:**

The network command allows BGP to advertise an IGP route if it is already in the IP table. A matching route must exist in the routing table before the network is announced. The network command is used to permit BGP to advertise a network if it is present in the IP routing table.

**Question 86.**

Select three classless routing protocols. (Choose three)

- A. IS-IS
- B. IGRP
- C. RIPv1
- D. OSPF
- E. EIGRP

**Answer: A, D, E**

**Explanation:**

IS-IS, Open Shortest Path First (OSPF) and Enhanced IGRP are all classless routing protocols.

**Note:** RIPv2 and BGP are also classless routing protocols.

**Incorrect Answers**

**B, C:** IGRP and RIPv1 are not classless.

**Question 87.**

You want to configure your router so that it receives BGP routes from several Internet Service Providers.

How should you configure your router to achieve this goal?

- A. Accept full routes from the ISPs.
- B. Accept only IGP routes from the ISPs
- C. Accept an external route from the ISPs.
- D. Accept only redistributed routes from the ISPs.

**Answer: A**

**Explanation:**

The configuration of the multiple connections to the ISPs can be classified depending on the routes that are provided to the AS from the ISPs. Three common ways of configuring the connections are:

- All ISPs pass only default routes to the AS.
- All ISPs pass default routes, and selected specific routes (for example, from customers with who the AS exchanges a lot of traffic) to the AS.
- All ISPs pass all routes to the AS (A).

**Question 88.**

You are configuring BGP on your router. In particular you want to advertise the subnet 154.2.1.0 255.255.255.0 to the EBGP neighbors. Which command should you use?

- A. Router (config-router)#network 154.2.1.0
- B. Router (config-router)#network 164.2.1.0
- C. Router (config-router)#network-advertise 154.2.1.0
- D. Router (config-router)#network 154.2.1.0 mask 255.255.255.0

**Answer: D**

**Explanation:**

The network command is used to specify the networks to be advertised by the Border Gateway Protocol (BGP) and multiprotocol BGP routing processes.

Syntax: network *network-number* [mask *network-mask*] [route-map *map-name*]

Mask and route-map are optional. If the mask keyword is configured, then an exact match must exist in the routing table.

**Reference:**

Cisco, BGP commands

**Incorrect Answers**

**A:** If we do not specify the subnet mask then additional networks are allowed to be advertised. The classful subnet mask of 154.2.1.0 is 255.255.0.0 – a Class B network.

**B:** Incorrect IP address.

**C:** There is no network-advertise command.

**Question 89.**

EIGRP packets does not utilize 100% of the bandwidth on an interface by default, instead there is a maximum limit. What is the default maximum bandwidth utilization for EIGRP?

- A. 10%
- B. 25%
- C. 50%
- D. 75%

**Answer: C**

**Explanation:**

By default, EIGRP will limit itself to using no more than 50% of the available bandwidth.

**Reference:**

Cisco, Configuration Notes for the Enhanced Implementation of EIGRP.

<http://www.cisco.com/warp/public/103/12.html>

**Question 90.**

Your ITCert trainee Bob is interested in BGP. In particular he is curious about communities. What should you tell him?

- A. Communities are tagged by default in outgoing updates.
- B. Communities can only be used within one autonomous system.
- C. Communities are a means of tagging routes to ensure consistent filtering.
- D. Communities perform summarization of blocks of contiguous network prefixes.

**Answer: C**

**Explanation:**

A community is a group of destinations which share some common property. No tag is used by default. Communities are a means of tagging routes to ensure consistent filtering or route-selection policy.

**Reference:**

RFC 1997, BGP Communities Attribute

**Incorrect Answers**

**A:** By default, all destinations belong to the general Internet community.

**B:** Each autonomous system administrator may define which communities a destination belongs to.

**D:** No summarization is performed by communities. Communications can be aggregated however.

**Question 91.**

You are troubleshooting OSPF on of your routers. In particular, you want to find out how many Shortest Path First (SPF) calculations that have occurred. Which command should you use?

- A. show ip ospf
- B. show ip route
- C. show ip ospf interface
- D. show ip ospf protocols

**Answer: A**

**Explanation:**

The show ip ospf command displays summary information regarding the global OSPF configuration. The output includes the number of times the Shortest Path First (SPF) algorithm has been run.

Sample output:

```
routerITCert#show ip ospf
OSPF is running, process id: 1, router id: 10.1.2.136
Number of areas: 1, normal: 1, stub: 0
Area: 1.2.3.4
Number of interfaces in this area is 1
Type of authentication none
SPF algorithm has run 3 times
SPF interval 5 seconds
```

**Incorrect Answers**

**B:** The show ip route command displays IP routing table entries.

**C:** The show ip interface command displays information about one or more interfaces.

**D:** There is no such command.

**Question 92.**

You have told Bob, your trainee that OSPF neighbor relationship allows the networks to scale well. He is not convinced, and asks you why. What should you tell him? (Select two.)

- A. Neighbor adjacencies control distribution of routing protocol updates.
- B. Routing table information does not flood the network until holddown timers have expired.
- C. The hello protocol is a more efficient means of sending routing updates than table exchange used in RIPv1.
- D. Topological database is maintained with incremental updates, with full exchange occurring only every 30 minutes.

**Answer: A, C**

**Explanation:**

**A:** Adjacency refers to the relationship, which exists between a router and its DR/BDR. Neighbor adjacencies control how updates are propagated.

**C:** The Hello Protocol used by OSPF to establish and maintain neighbor relationship.

**Incorrect Answers**

**B, D:** This is not related to the neighbor relationship.

**Question 93.**

```
interface serial 0
ip address 30.1.1.1 255.255.255.0
encapsulation frame-relay
ip ospf network point-to-multipoint
router ospf 5
network 30.1.1.0 0.0.0.255 area 0
```

You have configured your router according to the exhibit. What can you said about your configuration? (Select two.)

- A. DR/BDR elections do not take place.
- B. It is restricted to a hub and spoke topology-
- C. Neighbor statements are not necessary.
- D. The area 0 NBMA cloud is configured as more than one subnet.

**Answer: A, C**

**Explanation:**

On an OSPF point-to-multipoint interface no DR/BDR elections takes place and not neighbor statements are necessary.

**Incorrect Answers**

**B:** The point-to-multipoint mode can be used with a Star topology.

**D:** On an OSPF point-to-multipoint interface the cloud is configured as one subnet.

**Question 94.**

```
router igrp 100
network 197.135.20.0
network 197.135.24.0
network 197.135.27.0
redistribute rip
default-metric 10 100 255 1 1500
distance 140 0.0.0.0 255.255.255.255 9
access-list 9 permit 197.135.20.0
access-list 9 permit 197.135.24.0
access-list 9 permit 197.135.27.0
```

You have configured your router according to the exhibit. What can be said about your configuration? (Choose two)

- A. Networks 197.135.20.0, 197.135.24.0, and 197.135.27.0 are allowed into the routing table.
- B. The RIP learned routes to networks 197.135.20.0, 197.135.24.0, and 197.135.27.0 will be assigned an administrative distance of 140.
- C. The IGRP learned routes to networks 197.135.20.0, 197.135.24.0, and 197.135.27.0 will be assigned an administrative distance of 140.



D. Changing the administrative distance to a number larger than the default value makes networks 197.135.20.0, 197.135.24.0, and 197.135.27.0 unreachable.

**Answer: B, D**

**Explanation:**

B: We are redistributing RIP into IGRP. The redistribute rip command specifies that routes learned via RIP will be advertised in the IGRP updates.

D: This might occur.

We examine the following command: distance 140 0.0.0.0 255.255.255.255 9

140 defines the administrative distance that specified routes will be assigned.

0.0.0.0 255.255.255.255 defines the source address of the router supplying the routing information, in this case any router.

9 defines the access-list to be used to filter incoming routing updates to determine which will have their administrative distance changed.

And one of the access-list statements: access-list 9 permit 197.135.27.0

9 is the access-list number. permit allows all networks that match the address to be permitted, in this case to have their administrative

distance changed. 197.135.27.0 A network to be permitted, in this case to have its administrative distance changed.

**Reference:**

**Incorrect Answers**

**A:** The access list is applied on distance statement. Distance is only used to change the administrative distance, not to enter routes into the routing table.

**C:** RIP routes are redistributed into IGRP; not vice versa.

**Question 95.**

interface serial 0.122 point-to-point

ip address 192.168.1.1 255.255.255.0

encapsulation frame-relay

frame-relay interface-dlci 122

You are configuring your router. The router has one serial interface configured for WAN connectivity as shown in the exhibit. The router also has one Ethernet interface connected to your LAN. You want hosts on the LAN interface to be able to receive and transmit data traffic, but you want to disable all routing traffic on that interface. Which command should you use?

A. interface serial 0.122 point-to-point passive-interface ethernet 0

B. interface ethernet 0 ip address 192.168.12.1 255.255.255.0 passive-interface

C. router ospf 172 area 1 nssa network 192.168.1.0 0.0.0.255

area 0 network 192.168.12.0 0.0.0.255 area 1

D. router ospf 172 passive-interface ethernet 0 network 192.168.1.0 0.0.0.255

area 0 network 192.168.12.0 0.0.0.255 area 1

**Answer: D**

**Explanation:**

We use the passive-interface command to configure the ethernet interface to be passive.

**Note:**

The passive-interface router configuration command is used to disable sending routing updates on an interface.

Syntax: passive-interface [default] {*interface-type number*}

**Incorrect Answers**

**A:** We are not configuring the serial interface. Furthermore, the passive-interface command is a router configuration command, not an interface configuration command.  
**B:** We cannot use the passive-interface command like this.  
**C:** We should configure the Ethernet interface as passive, not the area as a not-so-stubby area (NSSA).

**Question 96.**

You have configured a new OSPF area and want to connect to the backbone area. Which type of router must you use?

- A. ABR
- B. stub
- C. internal router
- D. backbone router

**Answer: A**

**Explanation:**

ABRs connect OSPF area, other than area 0, to the backbone area (area 0).

**Incorrect Answers**

**B:** Stub routers do not apply. An area is stub, not a router.  
**C:** Internal routers are only used within an area.  
**D:** Backbone routers sit on the perimeter of the backbone area. They have at least one interface connected to area 0. However, backbone do not necessarily connect to other areas.

**Question 97.**

You are troubleshooting OSPF on your router. You want to view neighbor adjacencies. Which two commands would be useful? (Select two.)

- A. show ip ospf database
- B. show ip ospf neighbors
- C. show ip ospf protocols
- D. show ip ospf interfaces

**Answer: B, D**

**Explanation:**

**B:** Using the show ip ospf neighbor command, you can observe the neighbor data structure. This command displays OSPF-related neighbor information. The Interface field shows the interface on which the OSPF neighbor has formed adjacency.

**Sample:**

```
Router1T2#show ip ospf neighbor
Neighbor ID Pri State Dead Time Address Interface
192.168.45.1 1 FULL/DR 00:00:36 10.0.0.1 Ethernet0
```

**D:** The show ip ospf interface command displays area ID and adjacency information

**Reference:**

What Does the show ip ospf neighbor Command Reveal?,  
<http://www.cisco.com/warp/public/104/16.html>

**Incorrect Answers**

**A:** The show ip ospf database command displays the link-state database.  
**C:** There is no show ip ospf protocol command.

**Question 98.**

You are required to configure an area 3 border router. In particular, you must configure network summarization of the 172.16.20.192 to 172.16.20.223 address range. Which IOS command should you use? (Select two.)

- A. network 172.16.20.192 0.0.0.31 area 3
- B. area 3 range 172.16.20.192 172.16.20.223
- C. area 3 range 172.16.20.192 255.255.255.224
- D. network 172.16.20.192 255.255.255.224 area 3

**Answer: A, C**

**Explanation:**

**A:** When configuring multiple OSPF areas, make sure to associate the correct network addresses with the desired area ID. Syntax: network address wildcard-mask area area-id

We must use a wildcard mask (0.0.0.31) and not a network mask (255.255.255.224)

**C:** We must instruct the ABR to summarize routes for a specific area before injecting them into a different area. Syntax: area area-id range address mask

**Incorrect Answers**

**B:** This is the wrong syntax. We should use a network mask to specify the address range.

**D:** We should use a wildcard mask, not a network mask with the network command.

**Question 99.**

- 172.18.129.0/24
- 172.18.130.0/24
- 172.18.132.0/24
- 172.18.133.0/24

You must summarize the networks listed in the exhibit. Which route summarization should you use?

- A. 172.18.128.0/21
- B. 172.18.128.0/22
- C. 172.18.130.0/22
- D. 172.18.132.0/20

**Answer: A**

**Explanation:**

We list the network address binary and see how many leftmost bits match.

Decimal	1st Octet	2nd Octet	3rd Octet	4th Octet
172.18.129.0	10101100	00010010	10000001	00000000
172.18.130.0	10101100	00010010	10000010	00000000
172.18.132.0	10101100	00010010	10000100	00000000
172.18.133.0	10101100	00010010	10000101	00000000
172.18.128.0	10101100	00010010	10000000	00000000

We see that the 21 leftmost bits match and that 172.18.128.0/21 can summarize the four networks.

**Incorrect Answers**

**B, C:** Only the 21 leftmost bits match, not 22.

**D:** This is an illegal summarization. It is host address, not a network address.

**Question 100.**

You are configuring BGP on your Cisco router. You have configured a BGP prefix list and now you want to apply it. Which command you use?  
(Select a command from the Command Line Exhibit at the end of this document)

**Answer: Router(config-router)# neighbor address prefix-list list-name**

**Explanation:**

To distribute Border Gateway Protocol (BGP) neighbor information as specified in a prefix list the neighbor prefix-list command is used in address family or router configuration mode.

Syntax: neighbor {*ip-address* | *peer-group-name*} prefix-list *prefix-listname* {in | out}

**Reference:**

Cisco, BGP Commands

**Incorrect Answers**

Router (config)# neighbor address prefix-list list-name

The neighbor address prefix-list command should be used in address family or router configuration mode. ip prefix-list

The ip prefix-list global configuration command is used to create an entry in a prefix list, not to apply an already existing BGP prefix list.