



# 100-101<sup>Q&As</sup>

CCNA Interconnecting Cisco Networking Devices 1 (ICND1)

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**QUESTION 1**

OSPF routing uses the concept of areas. What are the characteristics of OSPF areas? (Choose Three.)

- A. Each OSPF area requires a loopback interface to be configured.
- B. Areas may be assigned any number from 0 to 65535.
- C. Area 0 is called the backbone area.
- D. Hierarchical OSPF networks do not require multiple areas.
- E. Multiple OSPF areas must connect to area 0.
- F. Single area OSPF networks must be configured in area 1.

Correct Answer: BCE

Definition of OSPF areas: An OSPF network may be structured, or subdivided, into routing areas to simplify administration and optimize traffic and resource utilization. Areas are identified by 32-bit numbers, expressed either simply in decimal,

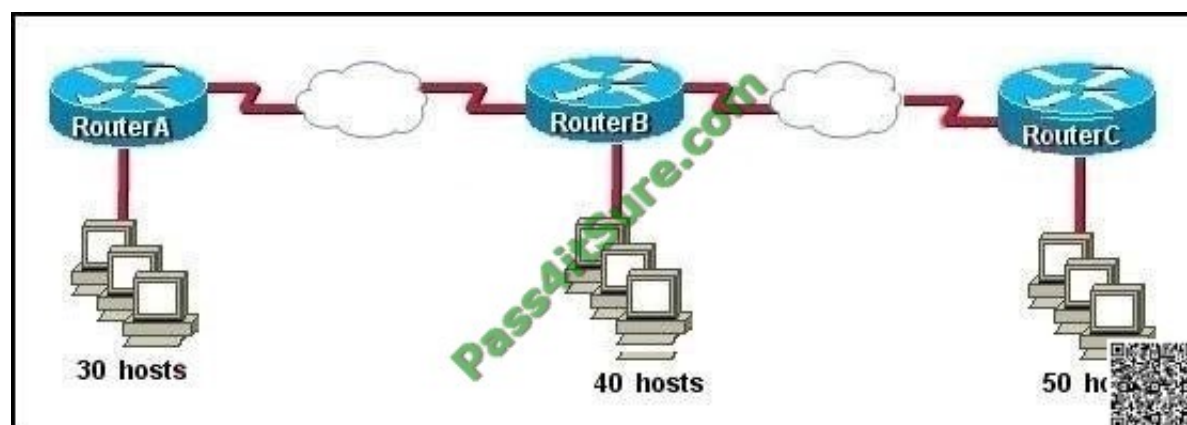
or often in octet-based dot- decimal notation, familiar from IPv4 address notation.

See discussion following Cisco Learning discussion.

<https://learningnetwork.cisco.com/message/90832>

**QUESTION 2**

Refer to the exhibit.



The enterprise has decided to use the network address 172.16.0.0. The network administrator needs to design a classful addressing scheme to accommodate the three subnets, with 30, 40, and 50 hosts, as shown. What subnet mask would accommodate this network?



- A. 255.255.255.192
- B. 255.255.255.224
- C. 255.255.255.240
- D. 255.255.255.248
- E. 255.255.255.252

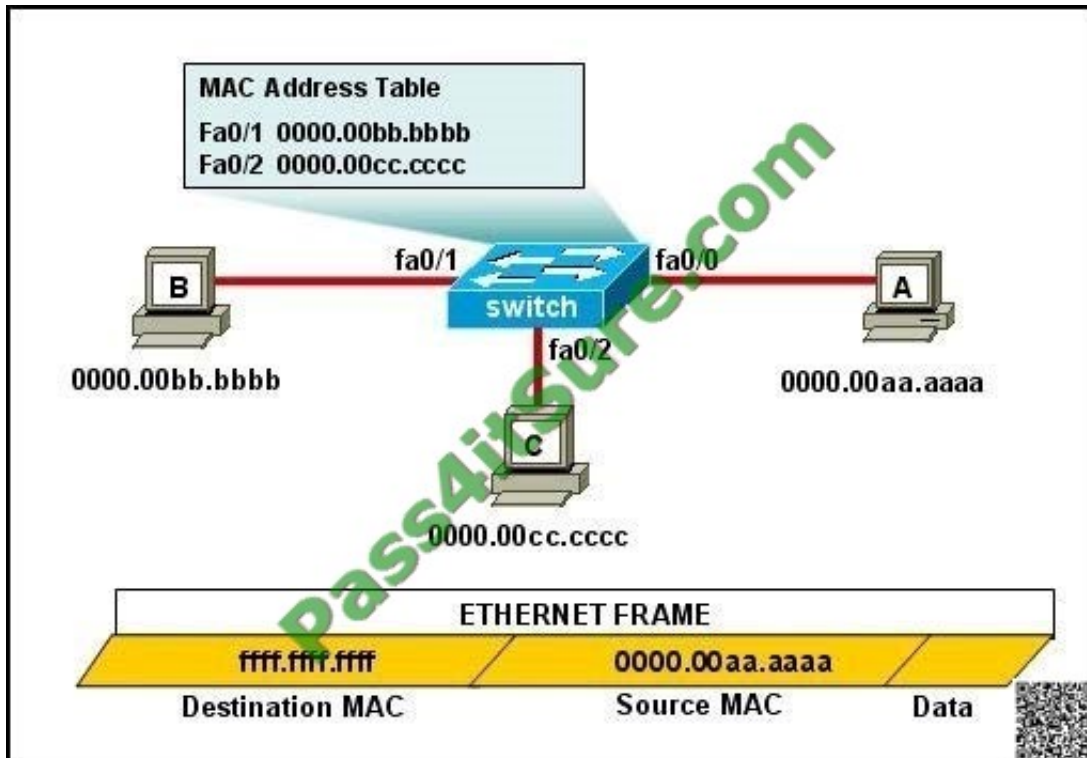
Correct Answer: A

Subnet mask A i.e. 255.255.255.192 with CIDR of /26 which means 64 hosts per subnet which are sufficient to accommodate even the largest subnet of 50 hosts.

Net Bits	Subnet Mask	Total-Address Per Subnet
/20	255.255.240.0	4096
/21	255.255.248.0	2048
/22	255.255.252.0	1024
/23	255.255.254.0	512
/24	255.255.255.0	256
/25	255.255.255.128	128
/26	255.255.255.192	64
/27	255.255.255.224	32
/28	255.255.255.240	16
/29	255.255.255.248	8
/30	255.255.255.252	4

### QUESTION 3

Refer to the exhibit.



The MAC address table is shown in its entirety. The Ethernet frame that is shown arrives at the switch. What two operations will the switch perform when it receives this frame? (Choose two.)

- A. The switch will not forward a frame with this destination MAC address.
- B. The MAC address of 0000.00aa.aaaa will be added to the MAC Address Table.
- C. The MAC address of ffff.ffff.ffff will be added to the MAC address table.
- D. The frame will be forwarded out all active switch ports except for port fa0/0.
- E. The frame will be forwarded out fa0/0 and fa0/1 only.
- F. The frame will be forwarded out all the ports on the switch.

Correct Answer: BD

If the switch already has the MAC address in its table for the destination, it will forward the frame directly to the destination port. If it was not already in its MAC table, then the frame would have been flooded out all ports except for the port that it came from.

#### QUESTION 4

A network administrator cannot connect to a remote router by using SSH. Part of the show interfaces command is shown.

```
router#show interfaces
```

Serial0/1/0 is up, line protocol is down



At which OSI layer should the administrator begin troubleshooting?

- A. physical
- B. data link
- C. network
- D. transport

Correct Answer: B

<https://learningnetwork.cisco.com/thread/12389>

I think the indication here is "Serial 0 is up, line protocol is down". What causes this indication? Correct me if I am wrong. When you have this indication, a cable unplugged is not a correct answer. If you check the output of your "show interface serial 0" command again, you should notice it as "Serial 0 is down, line protocol is down. Under the "show ip int brief" you should see status = down and protocol = down as opposed to up, down. Because you disconnected the cable, layer 1 will go down, which is indicated by the serial 0 down status. The line protocol status is for layer 2. So, a cable unplugged is not a correct answer to "Serial 0 is up, line protocol is down". Hope this helps.

Layer	Function	Examples
Application (Layer 7)	User interface	Telnet, HTTP
Presentation (Layer 6)	Handles encryption & changes to syntax	ASCII/EBCDIC, JPEG/MP3
Session (Layer 5)	Manages multiple applications and maintains synchronisation points	Operating systems, scheduling
Transport (Layer 4)	Provides reliable or best-effort delivery and (optional) error and flow control	TCP, UDP
Network (Layer 3)	Provides logical end-to-end addressing used by routers and hosts	IP
Data Link (Layer 2)	Creates frames from data bits, uses MAC addresses to access endpoints, and provides error detection but no correction	802.3, 802.2, HDLC, Frame Relay
Physical (Layer 1)	Specifies voltage, wire speed, and cable pin-outs	EIA/TIA, V.35

#### QUESTION 5

Which layer of the TCP/IP stack combines the OSI model physical and data link layers?

- A. Internet layer
- B. transport layer



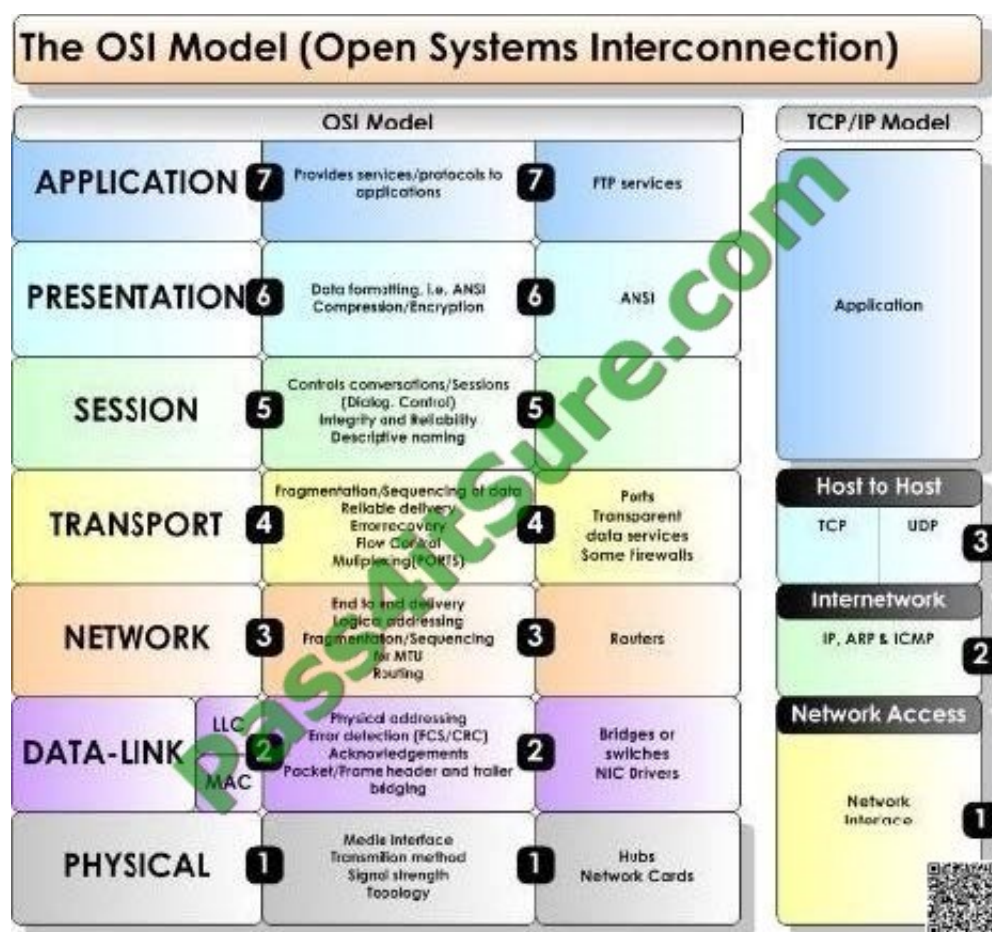


C. application layer

D. network access layer

Correct Answer: D

The Internet Protocol Suite, TCP/IP, is a suite of protocols used for communication over the internet. The TCP/IP model was created after the OSI 7 layer model for two major reasons. First, the foundation of the Internet was built using the TCP/IP suite and through the spread of the World Wide Web and Internet, TCP/IP has been preferred. Second, a project researched by the Department of Defense (DOD) consisted of creating the TCP/IP protocols. The DOD's goal was to bring international standards which could not be met by the OSI model. Since the DOD was the largest software consumer and they preferred the TCP/IP suite, most vendors used this model rather than the OSI. Below is a side by side comparison of the TCP/IP and OSI models.



#### QUESTION 6

An administrator has connected devices to a switch and, for security reasons, wants the dynamically learned MAC addresses from the address table added to the running configuration. What must be done to accomplish this?

- A. Enable port security and use the keyword sticky.
- B. Set the switchport mode to trunk and save the running configuration.
- C. Use the switchport protected command to have the MAC addresses added to the configuration.



D. Use the no switchport port-security command to allow MAC addresses to be added to the configuration.

Correct Answer: A

[http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/ios/12.2SX/configuration/guide/port\\_sec.pdf](http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/ios/12.2SX/configuration/guide/port_sec.pdf)

One can configure MAC addresses to be sticky. These can be dynamically learned or manually configured, stored in the address table, and added to the running configuration. If these addresses are saved in the configuration file, the interface does not need to dynamically relearn them when the switch restarts, hence enabling security as desired.

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## QUESTION 7



### Instructions



For both the Router and the Switch the simulated console mode needs to start and remain in enabled mode.

RouterA and SwitchA have been configured to operate in a private network which will connect to the Internet. You have been asked to review the configuration prior to cabling and implementation.

This task requires the use of various IOS commands to access and inspect the running configuration of RouterA and SwitchA. No configuration changes are necessary.

You will connect to RouterA and SwitchA via the console devices that are attached to each.

There are 4 multiple-choice questions with this task. Be sure to answer all of them before leaving this item. In order to score the maximum points you will need to have accessed both SwitchA and RouterA.

NOTE: The configuration command has been disabled for both the router and switch in this simulation.

### Topology

SwitchA  
IP address 10.1.1.200



SwitchA  
console

RouterA  
IP address 10.1.1.250



RouterA  
console



Which two of the following are true regarding the configuration of RouterA? (Choose two.)

- A. At least 5 simultaneous remote connections are possible
- B. Only telnet protocol connections to RouterA are supported
- C. Remote connections to RouterA using telnet will succeed
- D. Console line connections will never time out due to inactivity





E. Since DHCP is not used on Fa0/1 there is not a need to use the NAT protocol

Correct Answer: AC

The IP address can accommodate 5 hosts at least, telnet can be accessed on the router

### QUESTION 8

Which two statements describe the process identifier that is used in the command to configure OSPF on a router? (Choose two.) Router(config)# router ospf 1

- A. All OSPF routers in an area must have the same process ID.
- B. Only one process number can be used on the same router.
- C. Different process identifiers can be used to run multiple OSPF processes
- D. The process number can be any number from 1 to 65,535.
- E. Hello packets are sent to each neighbor to determine the processor identifier.

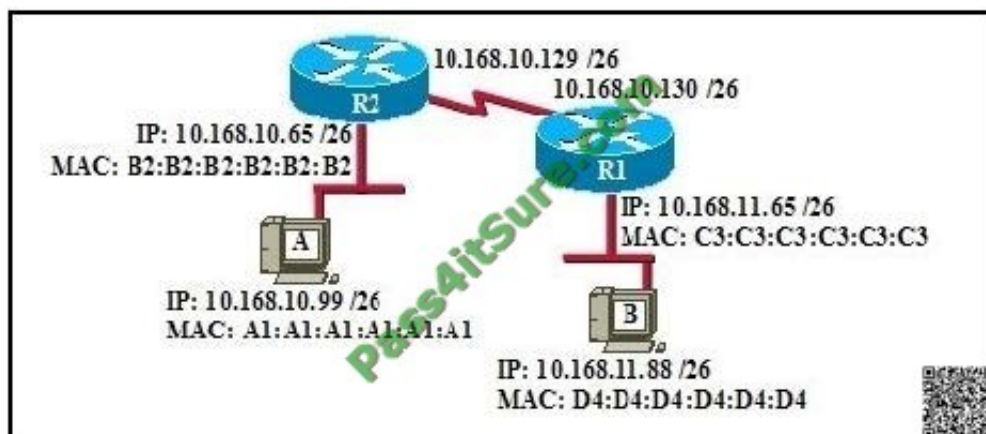
Correct Answer: CD

Multiple OSPF processes can be configured on a router using multiple process ID's.

The valid process ID's are shown below: Edge-B(config)#router ospf Process ID

### QUESTION 9

Refer to the exhibit.



If host A sends an IP packet to host B, what will the source physical address be in the frame when it reaches host B?

- A. 10.168.10.99
- B. 10.168.11.88
- C. A1:A1:A1:A1:A1:A1



D. B2:B2:B2:B2:B2:B2

E. C3:C3:C3:C3:C3:C3

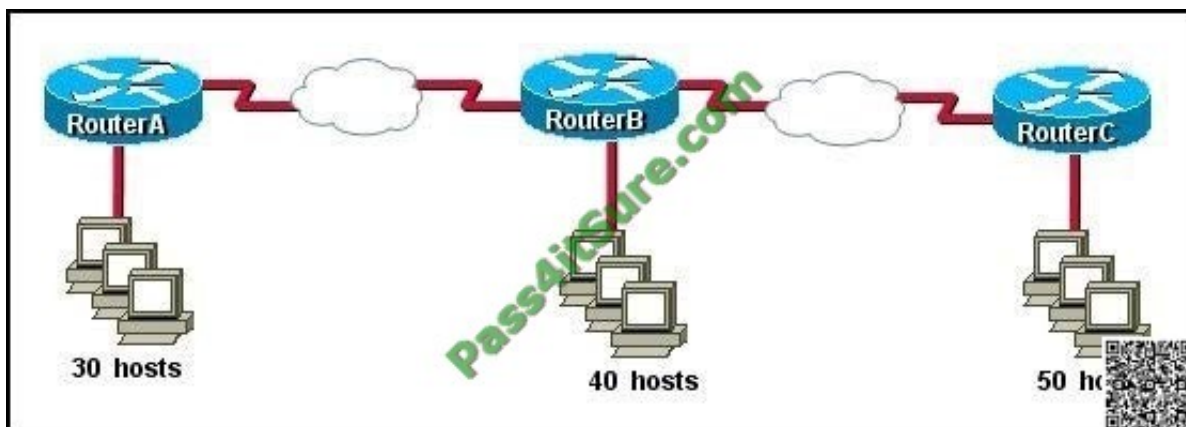
F. D4:D4:D4:D4:D4:D4

Correct Answer: E

When packets transfer from one host to another across a routed segment, the source IP address always remains the same source IP address, and the source physical (MAC) address will be the existing router's interface address. Similarly, the destination IP address always remains the same and the destination physical (MAC) address is the destination router's interface address.

### QUESTION 10

Refer to the exhibit.



The internetwork is using subnets of the address 192.168.1.0 with a subnet mask of 255.255.255.224. The routing protocol in use is RIP version 1. Which address could be assigned to the FastEthernet interface on RouterA?

A. 192.168.1.31

B. 192.168.1.64

C. 192.168.1.127

D. 192.168.1.190

E. 192.168.1.192

Correct Answer: D

Subnet mask 255.255.255.224 with CIDR of /27 which results in 32 hosts per.

192.168.1.31 is the broadcast address for subnet '0' 192.168.1.64 is the network address for subnet '2'

192.168.1.127 is the broadcast address for subnet '3' 192.168.1.192 is the network address for subnet '6'



Subnet	Network Address	Starting Host	End Host	Broadcast	Netmask
0	192.168.1.0	192.168.1.1	192.168.1.30	192.168.1.31	255.255.255.224
1	192.168.1.32	192.168.1.33	192.168.1.62	192.168.1.63	255.255.255.224
2	192.168.1.64	192.168.1.65	192.168.1.94	192.168.1.95	255.255.255.224
3	192.168.1.96	192.168.1.97	192.168.1.126	192.168.1.127	255.255.255.224
4	192.168.1.128	192.168.1.129	192.168.1.158	192.168.1.159	255.255.255.224
5	192.168.1.160	192.168.1.161	192.168.1.190	192.168.1.191	255.255.255.224
6	192.168.1.192	192.168.1.193	192.168.1.222	192.168.1.223	255.255.255.224
7	192.168.1.224	192.168.1.225	192.168.1.254	192.168.1.255	255.255.255.224

**QUESTION 11**

What must occur before a workstation can exchange HTTP packets with a web server?

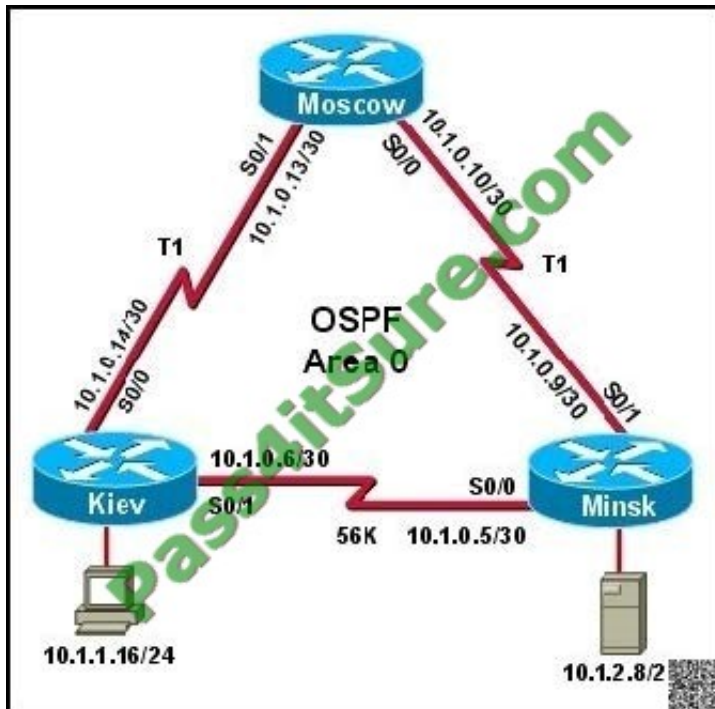
- A. A UDP connection must be established between the workstation and its default gateway.
- B. A UDP connection must be established between the workstation and the web server.
- C. A TCP connection must be established between the workstation and its default gateway.
- D. A TCP connection must be established between the workstation and the web server.
- E. An ICMP connection must be established between the workstation and its default gateway.
- F. An ICMP connection must be established between the workstation and the web server.

Correct Answer: D

HTTP uses TCP port 80. <http://pentestlab.wordpress.com/2012/03/05/common-tcpip-ports/>

**QUESTION 12**

Refer to the exhibit.



The host in Kiev sends a request for an HTML document to the server in Minsk. What will be the source IP address of the packet as it leaves the Kiev router?

- A. 10.1.0.1
- B. 10.1.0.5
- C. 10.1.0.6
- D. 10.1.0.14
- E. 10.1.1.16
- F. 10.1.2.8

Correct Answer: E

Although the source and destination MAC address will change as a packet traverses a network, the source and destination IP address will not unless network address translation (NAT) is being done, which is not the case here.

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