

### QUESTION 1

Which of the following factors determines the OSPF router ID when configuring a router with both physical and logical interfaces?

- A. The lowest network number of any interface.
- B. The highest network number of any interface.
- C. The highest IP address of any logical interface.
- D. The middle IP address of any logical interface.
- E. The lowest IP address of any physical interface.
- F. The highest IP address of any physical interface.
- G. The lowest IP address of any logical interface.

Answer: F

Explanation:

The OSPF topology database includes information about routers and the subnets, or links, to which they are attached. To identify the routers in the neighbor table's topology database, OSPF uses a router ID (RID) for each router. A router's OSPF RID is that router's highest IP address on a physical interface when OSPF starts running.

Note:

The OSPF router ID is a 32-bit IP address selected at the beginning of the OSPF process. The highest IP address configured on the router is the router ID. If a loopback address is configured, then it is the router ID. In case of multiple loopback addresses, the highest loopback address is the router ID. Once the router ID is elected it doesn't change unless the IP address is removed or OSPF restarts.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 208

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### QUESTION 2

Which of the following routes will be used to forward data in a situation where a routing table contains static, RIP, and IGRP routes destined to the same network with each set to its default administrative distance?

- A. The RIP route
- B. The static route
- C. The IGRP route
- D. All three will load balance.

Answer: B

Explanation:

To decide which route to use, IOS uses a concept called Administrative Distance. Administrative distance is a number that denotes how believable an entire routing protocol is on a single router. The lower the number, the better, or more believable the routing protocol.

Route Type Administrative Distance

- Static 1
- IGRP 100
- RIP 120

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 177

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### **QUESTION 3**

You are a Cisco certified expert. You have been contracted by the Certkiller Pro chain to fix a problem that was caused by a MCP certified technician who could not complete the configuration of the routers. This Certkiller Pro chain has three stores and wanted to maintain their bicycle repair business in a centralized manner through network connectivity. They then asked the local MCP certified technician to configure the routers, but the technician failed to establish connectivity among the routers. The routers are named Certkiller1, Certkiller2, and Certkiller3, respectively. Identify the faults(s) and make the appropriate change(s) to rectify the configuration of the routers. The MCP technician configured the routers with the specification that follows:

- The routers are named Certkiller1, Certkiller2, and Certkiller3.
- RIP is the routing protocol
- Clocking is provided on the serial 0 interfaces
- The password on each router is "Certkiller"
- The subnet mask on all interfaces is the default mask.
- The IP addresses are listed in chart below.

Certkiller1

E0 192.168.27.1

E1 192.168.29.1

S0 192.168.31.1

Secret password: Certkiller

Certkiller2

E0 192.168.35.1

S0 192.168.33.1

S1 192.168.31.2

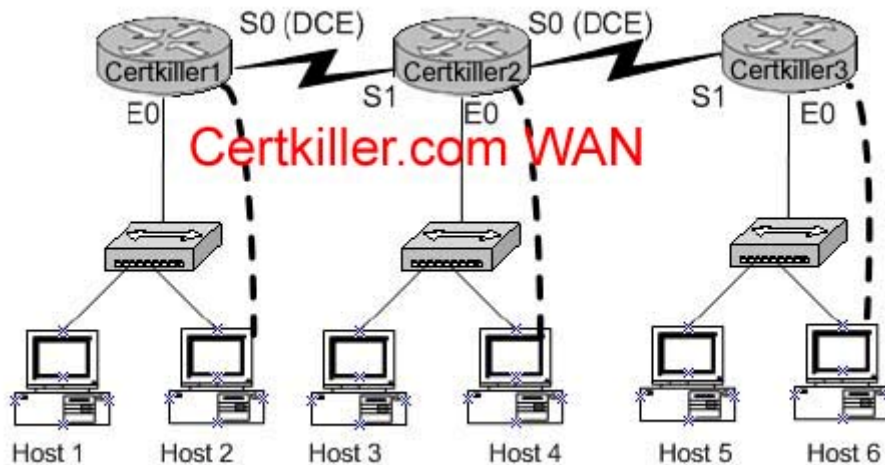
Secret password: Certkiller

Certkiller3

E0 192.168.37.1

S1 192.168.33.2

Secret password: Certkiller



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

Answer:

Click on Host 2:

Router Certkiller1:

Certkiller1> enable

Password: Certkiller

Certkiller1 # config terminal

Certkiller1 (config) # interface ethernet 0

Certkiller1 (config-if) # ip address 192.168.27.1 255.255.255.0

Certkiller1 (config-if) # no shutdown

Certkiller1 (config-if) # exit

Certkiller1 (config) # interface ethernet 1

Certkiller1 (config-if) # ip address 192.168.29.1 255.255.255.0

Certkiller1 (config-if) # no shutdown

Certkiller1 (config-if) # exit

Certkiller1 (config) # interface serial 0

Certkiller1 (config-if) # ip address 192.168.31.1 255.255.255.0

Certkiller1 (config-if) # clock rate 64000

Certkiller1 (config-if) # no shutdown

Certkiller1 (config-if) # exit

Certkiller1 (config) # router rip

Certkiller1 (config-router) # network 192.168.27.0

Certkiller1 (config-router) # network 192.168.29.0

Certkiller1 (config-router) # network 192.168.31.0

Certkiller1 (config-router) # Ctrl-Z

Certkiller1 # copy running-config startup-config

Click on Host 4

Router Certkiller2:

Certkiller2> enable

Password: Certkiller

Certkiller2 # config t

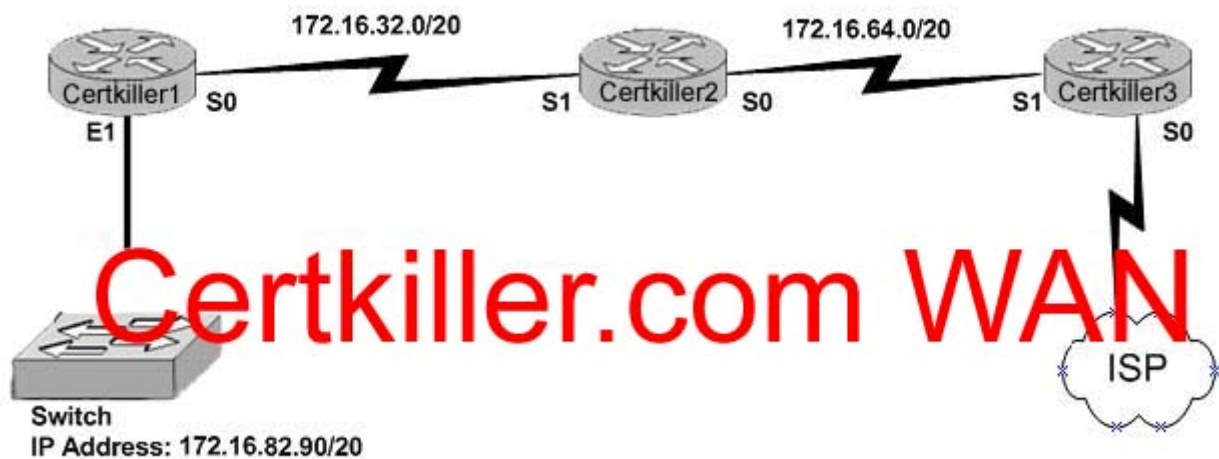
Certkiller2 (config) # interface ethernet 0

```
Certkiller2 (config-if) # ip address 192.168.35.1 255.255.255.0
Certkiller2 (config-if) # no shutdown
Certkiller2 (config-if) # exit
Certkiller2 (config) # interface serial 0
Certkiller2 (config-if) # ip address 192.168.33.1 255.255.255.0
Certkiller2 (config-if) # clock rate 64000
Certkiller2 (config-if) # no shutdown
Certkiller2 (config-if) # exit
Certkiller2 (config) # interface serial 1
Certkiller2 (config-if) # ip address 192.168.31.2 255.255.255.0
Certkiller2 (config-if) # no shutdown
Certkiller2 (config-if) # exit
Certkiller2 (config) # router rip
Certkiller2 (config-router) # network 192.168.35.0
Certkiller2 (config-router) # network 192.168.33.0
Certkiller2 (config-router) # network 192.168.31.0
Certkiller2 (config-router) # Ctrl-Z
Certkiller2 # copy running-config startup-config
Router Certkiller3:
Click on Host6
Certkiller3> enable
Password: Certkiller
Certkiller3 # config t
Certkiller3 (config) # interface ethernet 0
Certkiller3 (config-if) # ip address 192.168.37.1 255.255.255.0
Certkiller3 (config-if) # no shutdown
Certkiller3 (config-if) # exit
Certkiller3 (config) # interface serial 1
Certkiller3 (config-if) # ip address 192.168.33.2 255.255.255.0
Certkiller3 (config-if) # no shutdown
Certkiller3 (config-if) # exit
Certkiller3 (config) # router rip
Certkiller3 (config-router) # network 192.168.33.0
Certkiller3 (config-router) # network 192.168.37.0
Certkiller3 (config-router) # Ctrl-Z
Certkiller3 # copy running-config startup-config
```

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#### **QUESTION 4**

The following exhibit shows the Certkiller.com WAN. Study it carefully:



What are the broadcast addresses of the subnets in the Certkiller network? (Select three options.)

- A. 172.16.82.255
- B. 172.16.95.255
- C. 172.16.64.255
- D. 172.16.32.255
- E. 172.16.47.255
- F. 172.16.79.255

Answer: B E F

Explanation:

The subnets in the network are subnetted Class B addresses. A /20 subnet mask means that the subnet addresses increment by 16. For example: 172.16.16.0, 172.16.32.0, 172.16.48.0, 172.16.64.0 etc. The broadcast address is the last IP address before the next subnet address.

B: The switch IP address (172.16.82.90) is in the 172.16.80.0 subnet. 172.16.95.255 is the broadcast address for the 172.16.80.0 subnet.

E: 172.16.47.255 is the broadcast address for the 172.16.32.0 subnet.

F: 172.16.79.255 is the broadcast address for the 172.16.64.0 subnet.

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### QUESTION 5

You are a network administrator at Certkiller. The Certkiller network is illustrated in the following exhibit. Study it carefully:



Routers Certkiller1 and Certkiller2 are connected through their serial interfaces, however, they cannot communicate. You ascertain that Certkiller1 has the correct configuration. Can you identify the fault on router Certkiller2?

- A. Link reliability is insufficient
- B. IPCP is not open
- C. Incorrect subnet mask
- D. Incompatible encapsulation
- E. Bandwidth allocation is too low
- F. Incomplete IP address

Answer: D

Explanation:

HDLC and PPP Configuration

HDLC and PPP configuration is straightforward. You just need to be sure to configure the same WAN data-link protocol on each end of the serial link. Otherwise, the routers will misinterpret the incoming frames, because each WAN data-link protocol uses a different frame format. Other than configuring some optional features, that's all you need to do.

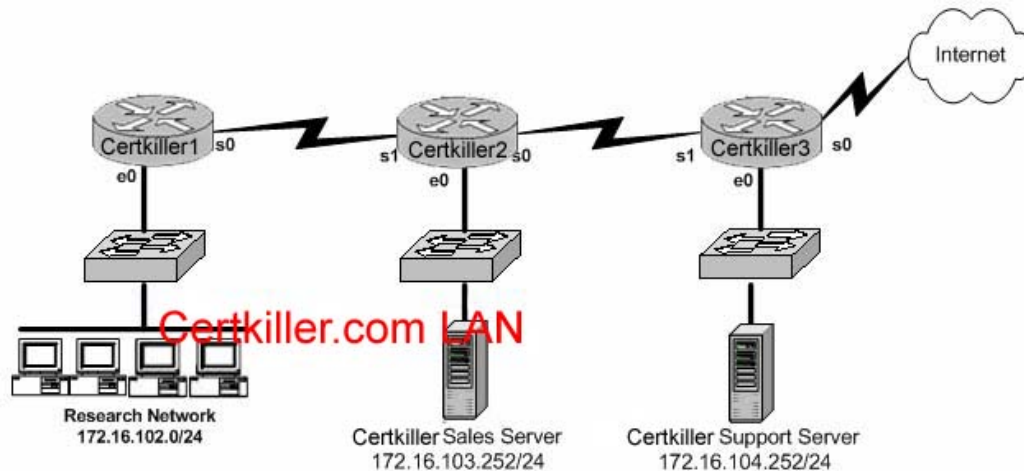
Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 310

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## QUESTION 6

You are a network administrator at Certkiller. The Certkiller network is illustrated in the following exhibit. Study it carefully:



You want to prevent users on the Research Network and the Internet from accessing the Certkiller Support server, but you want to allow all other Certkiller users access to the server. You create an access control list (ACL) called research block. The ACL contains the following statements:

```
deny 172.16.102.0 0.0.0.255 172.16.104.255 0.0.0.0
permit 172.16.0.0 0.0.255.255 172.16.104.252 0.0.0.0
```

Which of the following command sequence must be issued so that the list meets these requirements?

- A. Certkiller1(config)# interface e0 Certkiller1(config-if)# ip access-group research\_block in
- B. Certkiller2(config)# interface s1 Certkiller2(config-if)# ip access-group research\_block in
- C. Certkiller3(config)# interface s1 Certkiller3(config-if)# ip access-group research\_block in
- D. Certkiller1(config)# interface s0 Certkiller1(config-if)# ip access-group research\_block out
- E. Certkiller2(config)# interface s0 Certkiller2(config-if)# ip access-group research\_block out
- F. Certkiller3(config)# interface e0 Certkiller3(config-if)# ip access-group research\_block out

Answer: F

Explanation:

To enable the ACL on an interface and define the direction of packets to which the ACL is applied, the ip access-group command is used. When referring to a router, these terms have the following meanings.

- Out - Traffic that has already been through the router and is leaving the interface; the source would be where it's been (on the other side of the router) and the destination is where it's going.
- In - Traffic that is arriving on the interface and which will go through the router; the source would be where it's been and the destination is where it's going (on the other side of the router).

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 433



### QUESTION 7

You are a network administrator at Certkiller. You are troubleshooting a router problem. You issue the show ip route command on one of the routers. The output from the command is shown in the following exhibit:

**RouterCertkiller# Show ip route**

<some output text omitted>

Gateway of last resort is not set.

```
1 172.16.0.0[110/84632] via 192.168.6.3,00:00:13, FastEthernet0/0
R 192.168.3.0 [120/3] via 192.168.2.2,00:00:09, Serial0/0
C 192.168.2.0 is directly connected, Serial0/0
C 192.168.6.0 is directly connected, FastEthernet0/0
```

What does [120/3] represent?

- A. 120 is the bandwidth allocation and 3 is the routing process number.
- B. 120 is the administrative distance and 3 is the metric for that route.
- C. 120 is the value of the update timer and 3 is the number of updates received.
- D. 120 is the UDP port for forwarding traffic and 3 is the number of bridges.

Answer: B

Explanation:

To decide which route to use, IOS uses a concept called Administrative Distance. Administrative distance is a number that denotes how believable an entire routing protocol is on a single router. The lower the number, the better, or more believable the routing protocol.

Route Type Administrative Distance

- Connected 0
- IGRP 100
- RIP 120

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 177

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### QUESTION 8

What is the basic characteristic of switches and hubs?

- A. Hubs cannot filter frames.
- B. Using hubs is costly with regard to bandwidth availability.
- C. Switches do and can not forward broadcasts.



- D. Switches are more efficient than hubs in processing frames.
- E. Switches increase the number of collision domains in the network.

Answer: E

Explanation:

Switches increases the number of collisions domains in the network.

Note:

Switches use a couple of different types of internal processing variations. Almost of the more recently released switches use store-and-forward processing, but all three types of switching are supported in at least one type of currently available Cisco Switch.

- Store-and-forward -The switch fully receives all bits in the frame (store) before forwarding the frame (forward).
- Cut-through - The switch performs the address table lookup as soon as the destination address field in the header is received.
- Fragment-free - This performs like cut-through switching, but the switch waits for 64 bytes to be received before forwarding the first bytes of the outgoing frame.

Reference:

CCNA Self-Study CCNA INTRO exam certification Guide (Cisco press, ISBN 1-58720-094-5) Page 243

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### **QUESTION 9**

When you consider half-duplex and full-duplex Ethernet, what are unique for half-duplex Ethernet? (Select two options.)

- A. Half-duplex Ethernet operates in a shared collision domain.
- B. Half-duplex Ethernet operates in an exclusive broadcast domain.
- C. Half-duplex Ethernet has efficient throughput.
- D. Half-duplex Ethernet has lower effective throughput.
- E. Half-duplex Ethernet operates in an exclusive collision domain.

Answer: A D

Explanation:

A single device could not be sending a frame and receiving a frame at the same time because it would mean that a collision was occurring. So, devices simply chose not to send a frame while receiving a frame. That logic is called half-duplex logic.

Ethernet switches allow multiple frames to be sent over different ports at the same time. Additionally, if only one device is connected to a switch port, there is never a possibility that a collision could occur. So, LAN switches with only one device cabled to each port of the switch allow the use of full-duplex operation. Full duplex means that an Ethernet card can send and receive concurrently.

Reference:

CCNA Self-Study CCNA INTRO exam certification Guide (Cisco press, ISBN 1-58720-094-5) Page 62-63

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### QUESTION 10

Which PPP authentication methods will you use when configuring PPP on an interface of a Cisco router? (Select two options.)

- A. SSL
- B. SLIP
- C. PAP
- D. LAPB
- E. CHAP
- F. VNP

Answer: C E

Explanation:

Password Authentication Protocol (PAP) and Challenge Handshake Authentication Protocol (CHAP) authenticate the endpoints on either end of a point-to-point serial link. Chap is the preferred method today because the identifying codes flowing over the link are created using a MD5 one-way hash, which is more secure than the clear-text passwords sent by PAP.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 314

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### QUESTION 11

Study the Exhibit below carefully:



What is the function of the Frame Relay DLCI with regard to CertkillerA?

- A. Defines the signaling standard between CertkillerA and CertkillerB,
- B. Identifies the type of encapsulation in operation between CertkillerA and CertkillerB.
- C. Identifies the circuit between CertkillerB and the frame switch.
- D. Defines the signaling standard between CertkillerA and the frame switch.

Answer: C

Explanation:

CertkillerA sends frames with DLCI, and they reach the local switch. The local switch sees the DLCI field and forwards the frame through the Frame Relay network until it reaches the switch connected to CertkillerB. The CertkillerB's local switch forwards the frame out of the access link to CertkillerB.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 386

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### QUESTION 12

What could be the rationale behind using passive-interface command when configuring a

router?

- A. Allows interfaces to share common IP addresses.
- B. Allows an interface to remain up without the aid of keepalives.
- C. Allows a router to send routing and not receive updates via that interface.
- D. Allows a routing protocol to forward updates that is missing its IP address.
- E. Allows a router to receive routing updates on an interface but not send updates via that interface.

Answer: E

Explanation:

The passive-interface command is used to control the advertisement of routing information. The command enables the suppression of routing updates over some interfaces while allowing updates to be exchanged normally over other interfaces. With most routing protocols, the passive-interface command restricts outgoing advertisements only. However, when used with Enhanced Interior Gateway Routing Protocol (EIGRP), the effect is slightly different. This document demonstrates that use of the passive-interface command in EIGRP suppresses the exchange of hello packets between two routers, resulting in the loss of their neighbor relationship. This stops not only routing updates from being advertised, but it also suppresses incoming routing updates. This document also discusses the configuration required in order to allow the suppression of outgoing routing updates, while allowing incoming routing updates to be learnt normally from the neighbor.

Reference:

[http://www.cisco.com/en/US/tech/tk365/tk207/technologies\\_tech\\_note09186a0080093f0a.shtml](http://www.cisco.com/en/US/tech/tk365/tk207/technologies_tech_note09186a0080093f0a.shtml)

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### QUESTION 13

You are a network administrator at Certkiller. The Certkiller network is illustrated in the following exhibit. Study it carefully:



Certkiller is acquiring a new Class C IP network. Which of the following subnet masks will provide one useful subnet for each department while still making allowance for enough usable host addresses per department as specified in the graphic?

- A. 255.255.255.128
- B. 255.255.255.192
- C. 255.255.255.224
- D. 255.255.255.240
- E. 255.255.255.248
- F. 255.255.255.252

Answer: C

Explanation:

The network currently consists of 5 subnets. We need to subnet the Class C network into at least 5 subnets. This requires that we use 3 bits for the network address. Using the formula  $2^n - 2$  we get 6. This also leaves us with 5 bits for hosts, which gives us 30 hosts.

Incorrect Answers:

A: Only 1 bit is required to give us 128 but 1 bit gives us 0 subnets.

B: 2 bits are required to give us 192 but 2 bits gives us only 2 subnets. This is too few.

D: 4 bits are required to give us 240. This gives us 14 subnets. However we are left with 4 bits for hosts leaving us with 14 host addresses. Two of the networks require more than 14 hosts so this will not do.

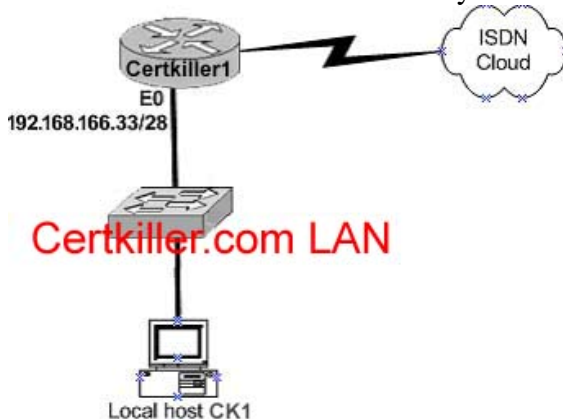
E: 5 bits are required to give us 248. This gives us 30 subnets. However we are left with 3 bits for hosts leaving us with 6 host addresses. All the networks require more than 6 hosts so this will not do.

F: 6 bits are required to give us 252. This gives us 62 subnets. However we are left with 2 bits for hosts leaving us with 2 host addresses. This is too few.

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### QUESTION 14

You are a network administrator at Certkiller. You need to troubleshoot the Certkiller network shown in the exhibit. Study the Exhibit carefully:



The host, CK1, is connected to the Certkiller1 LAN, but it cannot get access to resources on any of the other networks. The host's configuration is as follows:

host address: .....192.168.166.45

subnet mask: .....255.255.255.240

default gateway: ..192.168.166.32

Then which of the following is the cause of the problem?

A. The default gateway is a network address.

B. The default gateway is on a different subnet address as the host.

C. The IP address of the host is on a different subnet.

D. The host subnet mask is incompatible to the subnet mask of the attached router interface.

Answer: A

Explanation:

The range of the subnet used in this question is 192.168.166.32 to

192.168.166.47.192.168.166.32 is the network address and 192.168.166.47 is the broadcast address leaving a usable host address range of 192.168.166.33 to 192.168.166.46. The default gateway for the host should be 192.168.166.33.

Incorrect Answers:

B: The default gateway is on the same network but it is a network address.

C: The host address is correct.

D: The subnet mask 255.255.255.240 uses 28 bits and is therefore correct.

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### **QUESTION 15**

What are the benefits of using a router to segment the network at a main office? (Select two options.)

A. Broadcasts are not forwarded across the router.

B. Broadcasts are eradicated.

C. Adding a router to the network decreases latency.

D. Filtering can occur based on Layer 3 information.

E. Routers are more efficient than switches.

Answer: A, D

Explanation

Routers do not forward broadcast messages and therefore breaks up a broadcast domain. In addition, routers can be used to filter network information.

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### **QUESTION 16**

You are a network technician at Certkiller. Certkiller has a larger 172.12.0.0 network that you want to divide into subnets. You want each subnet to support 459 hosts. You also want to provide the maximum number of subnets. Which network mask should you use?

A. 255.255.0.0.

B. 255.255.128.0.

C. 255.255.224.0.

D. 255.255.254.0.

Answer: D

Explanation:

To obtain 459 hosts the number of host bits will be 9. This can support a maximum of 510 hosts. To keep 9 bits for hosts means the last bit in the 3rd octet will be 0. This gives 255.255.254.0 as the subnet mask.

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### **QUESTION 17**

Your new junior Certkiller trainee, Rutger, has a problem with basic binary math. He must convert the binary number 10011101 into its decimal and hexadecimal equivalent. Which two numbers must Rutger provide? (Select two options)

A. 158

B. 0x9D

C. 156

D. 157

E. 0x19

F. 0x9F

Answer: B D

Explanation:

10011101 = 157

0x9D is ASCII Hexadecimal = 157

Reference:

[http://www.cisco.com/en/US/products/sw/iosswrel/ps1818/products\\_command\\_reference\\_chapter09186a008007fc95.html](http://www.cisco.com/en/US/products/sw/iosswrel/ps1818/products_command_reference_chapter09186a008007fc95.html)

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### QUESTION 18

You are a network technician at Certkiller. The Certkiller network is illustrated in the following exhibit. Study it carefully:



Note:

SPIDs are not required for this switch. Which of the following command will you use to bring up the ISDN link? (Select three options.)

- A. Router(config-if)# encapsulation ppp
- B. Router(config)# dialer-list 1 protocol ip allow
- C. Router(config)# isdn switch-type type
- D. Router(config)# dialer map ip address name connection number
- E. Router(config-if)# dialer-group 1
- F. Router(config-if)# ip address subnet mask

Answer: A E F

Explanation:

- Proper encapsulation to be defined on both routers.
- IP address to be assigned for interface with subnet mask
- Dialer group number enables dialer-list on this interface. Dialer-list to be defined on global configuration command.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 310+337

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### QUESTION 19

You are a network technician at Certkiller. You are troubleshooting a LAN connectivity problem. Which of the following router IOS commands could you use? (Select three options.)

- A. show ip route
- B. winipcfg
- C. tracert
- D. show interfaces
- E. traceroute
- F. ping

Answer: A D F

Explanation

A: The show ip route command displays the IP route table.

D: The show interfaces EXEC command to display statistics for all interfaces configured on the router or access server.

F: The ping command tests connectivity to a remote node.

### QUESTION 20

Place the parameters in the correct sequence to configure dial-on-demand routing (DDR) on an ISDN BRI interface.

Place here	Select from these	
Place 1st parameter here	unicast	<next-hop-address>
Place 2nd parameter here	dial string	dialer
Place 3rd parameter here	map	group
Place 4th parameter here	dialer-list	<protocol>
Place 5th parameter here		

Answer:

Place 1st - next hop address

Place 2nd - Dialer-list

Place 3rd - protocol

Place 4th - Dialer-String

Place 5th - group

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 342

### QUESTION 21

Which of the following commands will you use to display the configuration register setting on a router?

- A. show boot
- B. show flash
- C. show register



D. show version

E. show config

Answer: D

Explanation:

show version

To display the configuration of the system hardware, the software version, the names and sources of configuration files, and the boot images, use the show version command in EXEC mode.

Examples

The following is sample output from the show version command:

```
Router1> show version
```

```
Cisco Internet work Operating System Software
```

```
IOS (tm) 7200 Software (C7200-J-M), Experimental Version 11.3(19970915:164752) [hampton-nitro-baseline 249]
```

```
Copyright (c) 1986-1997 by cisco Systems, Inc.
```

```
Compiled Wed 08-Oct-97 06:39 by hampton
```

```
Image text-base: 0x60008900, data-base: 0x60B98000
```

```
ROM: System Bootstrap, Version 11.1(11855) [beta 2], INTERIM SOFTWARE
```

```
BOOTFLASH: 7200 Software (C7200-BOOT-M), Version 11.1(472), RELEASE SOFTWARE (fc1)
```

```
Router1 uptime is 23 hours, 33 minutes
```

```
System restarted by abort at PC 0x6022322C at 10:50:55 PDT Tue Oct 21 1997
```

```
System image file is "tftp://171.69.1.129/hampton/nitro/c7200-j-mz"
```

```
cisco 7206 (NPE150) processor with 57344K/8192K bytes of memory.
```

```
R4700 processor, Implementation 33, Revision 1.0 (512KB Level 2 Cache)
```

```
Last reset from power-on
```

```
Bridging software.
```

```
X.25 software, Version 3.0.0.
```

```
SuperLAT software copyright 1990 by Meridian Technology Corp).
```

```
TN3270 Emulation software.
```

```
8 Ethernet/IEEE 802.3 interface(s)
```

```
2 FastEthernet/IEEE 802.3 interface(s)
```

```
4 Token Ring/IEEE 802.5 interface(s)
```

```
4 Serial network interface(s)
```

```
1 FDDI network interface(s)
```

```
125K bytes of non-volatile configuration memory.
```

```
1024K bytes of packet SRAM memory.
```

```
20480K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
```

```
20480K bytes of Flash PCMCIA card at slot 1 (Sector size 128K).
```

```
4096K bytes of Flash internal SIMM (Sector size 256K).
```

```
Configuration register is 0x0
```

Reference:

[http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgcr/fun\\_r/cfr\\_1g10.htm#1033030](http://www.cisco.com/univercd/cc/td/doc/product/software/ios123/123cgcr/fun_r/cfr_1g10.htm#1033030)

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### QUESTION 22

You are a network administrator at Certkiller. You must configure a new subnetwork at the Certkiller branch office in Berlin. You have been provided with the subnet mask of 255.255.255.224. You want to assign IP addresses to hosts on the subnet. Which of the following IP addresses would you use? (Choose all that apply.)

- A. 16.23.118.63
- B. 87.45.16.159
- C. 92.11.178.93
- D. 134.178.18.56
- E. 192.168.16.87
- F. 217.168.166.192

Answer: C, D, E

Explanation:

C: Valid Host in subnetwork 2 ( 92.11.178.64 to 92.11.178.95)

D: Valid Host in subnetwork 1 (134.178.18.32 to 134.178.18.63)

E: Valid Host in subnetwork 2 (192.168.16.64 to 192.168.16.95)

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### QUESTION 23

You are a network technician at Certkiller. You need to configure Frame Relay on a Cisco router. What is the default LMI (Local Management Interface) frame type transmitted by the Cisco router on a Frame Relay circuit?

- A. IETF
- B. B8ZS
- C. ANSI
- D. Cisco
- E. Q933a

Answer: D

Explanation:

Name Document IOS LMI-Type Parameter

- Cisco Proprietary cisco
- ANSI T1.617 Annex D ansi
- ITU Q.933. Annex A q.933a

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 382

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### QUESTION 24

You are a network technician at Certkiller. You have subnetted the 210.106.14.0 network with a /24 mask. Your supervisor asks you how many usable subnetworks and usable host addresses per subnet this would make provision for.

What would your response be?

- A. 1 network with 254 hosts

- B. 4 networks with 128 hosts
- C. 2 networks with 24 hosts
- D. 6 networks with 64 hosts
- E. 8 networks with 36 hosts

Answer: A

Explanation:

A subnet with 24 bits on would be 255.255.255.0. This subnet has only 1 network and 254 hosts.

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### QUESTION 25

You are a network technician at Certkiller. Due to rapid expansion, Certkiller is leaning towards scalable WAN technology. Immediate plans for the company include an additional 7 regional offices with all sites requiring continuous connectivity, but the current head office has no free ports available. Which of the following WAN technologies will meet the requirements?

- A. Frame Relay
- B. Broadband cable
- C. ISDN-BRI
- D. ADSL
- E. Dedicated PPP/HDLC links
- F. ISDN

Answer: A

---

### QUESTION 26

You are a network technician at Certkiller. You apply the access list illustrated below to interface E0 on a Cisco router. The interface is connected to the 192.168.1.8/29 LAN.

```
access-list 123 deny tcp 192.168.166.18 0.0.0.7 eq 20 any
```

```
access-list 123 deny tcp 192.168.166.18 0.0.0.7 eq 21 any
```

What are the consequences of this specific access list?

- A. All traffic will be allowed to exit E0 except FTP traffic.
- B. FTP traffic from 192.168.166.19 to any host will be denied.
- C. FTP traffic from 192.168.166.22 to any host will be denied.
- D. All traffic exiting E0 will be denied.
- E. All FTP traffic to network 192.168.166.18/29 from any host will be denied.

Answer: D

Explanation:

By default access list is having implicit deny statement at the end. In this example there is no permit statement, so it will deny all traffic exiting E0 Interface.

Incorrect answers

A: It will deny FTP and Telnet Traffic

B,C,E: It will deny all traffic in addition to the condition mentioned in the answer.

Because there is no permit statement at the end.

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### QUESTION 27

What are the characteristic of link state routing protocols? (Choose all that apply.)

- A. The exchange of advertisement is triggered by a change in the network.
- B. All routers exchange routing tables with each other in a multipoint network.
- C. Packets are routed based upon the shortest path to the destination.
- D. Paths are chosen depending on the cost efficiency factor.
- E. Every router in an OSPF area is capable of representing the entire network topology.
- F. Only the designated router in an OSPF area can represent the entire network topology.

Answer: A C E

Explanation:

Open Shortest Path First

- Each router discovers its neighbors on each interface. The list of neighbors is kept in a neighbor table.
- Each router uses a reliable protocol to exchange topology information with its neighbors.
- Each router places the learned topology information into its topology database.
- Each router runs the SPF algorithm against its own topology database.
- Each router runs the SPF algorithm against its own topology database to calculate the best routes to each subnet in the database.
- Each router places the best route to each subnet into the IP routing table.

The following list points out some of the key features of OSPF:

- Converges very quickly - from the point of recognizing a failure, it often can converge in less than 10 seconds.
- Supports VLSM.
- Uses short Hello messages on a short regular interval, with the absence of hello messages indicating that a neighbor is no longer reachable.
- Sends partial updates when link status changes, and floods full updates every 30 minutes. The flooding, however, does not happen all at once, so the overhead is minimal.
- Uses cost for the metric.

Reference:

CCNA Self-Study CCNA INTRO exam certification Guide (Cisco press, ISBN 1-58720-094-5) Page 417

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### QUESTION 28

You use multiple access lists when configuring it on an interface of a Cisco router. Which of the following statements are valid?

- A. Application of up to three access lists per protocol to a single interface.
- B. No more than two access lists per interface.
- C. One access list may be configured per direction for each Layer 3 protocol configured on an interface.
- D. The maximum number allowed varies due to RAM availability in the router.

E. An infinite number of access lists that can be applied to an interface, from most specific to most general.

F. Cisco IOS allows only one access list to an interface.

Answer: C

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### **QUESTION 29**

Which of the following are typical Layer 2 encapsulations for a WAN link? (Choose all that apply.)

A. Ethernet

B. PPP

C. Token Ring

D. HDLC

E. Frame Relay

F. POTS

Answer: B, D E

Explanation:

WAN data-link protocols used on point-to-point serial links provide the basic function of data delivery across that one link. The two most popular WAN data-link protocols are High-Level Data Link Control (HDLC) and PPP.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page

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### **QUESTION 30**

You are a network technician at Certkiller. Certkiller has its head office in Mumbai and a branch office in Delhi. You want to establish connectivity between head office and the branch office. You intend using two data link layer encapsulation, one for data and one for signaling. What type of WAN service allows two data layer encapsulations of this nature?

A. ISDN

B. ATM

C. FDDI

D. ATX

E. Frame Relay

Answer: A

Explanation:

ISDN Q.931 messages are used for signaling.

ISDN B channels are used to transport data.

Reference:

CCNA Self-Study CCNA ICND exam certification Guide (Cisco press, ISBN 1-58720-083-X) Page 327