640-801

Cisco® Certified Network Associate (CCNA®)

Version 28.3

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Note:
Section A contains 332 questions.
Section B contains 42 questions.
The total number of questions is 374.
Each section starts with QUESTION NO: 1. There are no missing questions.

Section A

QUESTION NO: 1
You work as network administrator at TestKing.
Your trainee is configuring a router with both physical and logical interfaces.
He asks you what factor determines the OSPF router ID.
What should you tell him?

A. The lowest network number of any interface.
B. The lowest IP address of any logical interface.
C. The lowest IP address of any physical interface.
D. The highest network number of any interface.
E. The highest IP address of any logical interface.
F. The highest IP address of any physical 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 (Ciscopress, ISBN 1-58720-083-X) Page 208

QUESTION NO: 2
Your TestKing trainee is configuring a router. In particular, he is examining a routing table that contains static, RIP, and IGRP routes for the same destination network with each set to its default administrative distance.
He asks you which route will be used to forward data?

A. The IGRP route
B. The static route
C. The RIP 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 (Ciscopress, ISBN 1-58720-083-X) Page 177

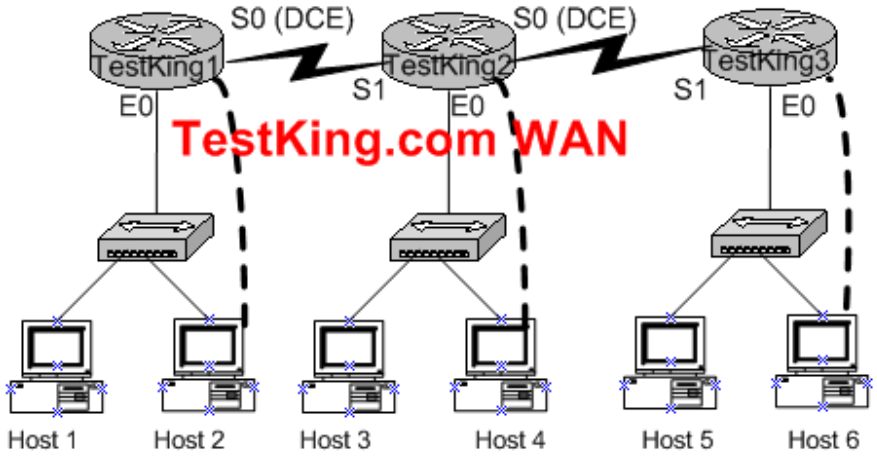
QUESTION NO: 3
Three bicycle stores in the TestKing Pro chain have decided to establish network connectivity to maintain their repair business in a centralized manner. The stores contracted a local technician, non-Cisco certified, to configure the routers. However, the local MCP certified technician was not able to finish the configuration in an appropriate manner. No network connectivity has been established among the routers. The routers are named TestKing1, TestKing2, and TestKing3.
TestKing Pro has contracted you to fix the problems. Identify the fault(s) and make the necessary change(s) to establish connectivity. The routers have been configured with the following specifications:

- **The routers are named TestKing1, TestKing2, and TestKing3.**
- **RIP is the routing protocol**
- **Clocking is provided on the serial 0 interfaces**
- **The password on each router is "testking"**
- **The subnet mask on all interfaces is the default mask.**
- **The IP addresses are listed in chart below.**

TestKing1
E0 192.168.27.1
E1 192.168.29.1
S0 192.168.31.1
Secret password: testking

TestKing2
E0 192.168.35.1
S0 192.168.33.1
S1 192.168.31.2
Secret password: testking

TestKing3
E0 192.168.37.1
S1 192.168.33.2
Secret password: testking



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

Answer:

Click on Host 2:

Router TestKing1:

TestKing1> **enable**
Password: **testking**
TestKing1 # **config terminal**
TestKing1 (config) # **interface ethernet 0**

TestKing1 (config-if) # **ip address 192.168.27.1 255.255.255.0**
TestKing1 (config-if) # **no shutdown**
TestKing1 (config-if) # **exit**
TestKing1 (config) # **interface ethernet 1**
TestKing1 (config-if) # **ip address 192.168.29.1 255.255.255.0**
TestKing1 (config-if) # **no shutdown**
TestKing1 (config-if) # **exit**
TestKing1 (config) # **interface serial 0**
TestKing1 (config-if) # **ip address 192.168.31.1 255.255.255.0**
TestKing3 (config-if) # **clock rate 64000**
TestKing1 (config-if) # **no shutdown**
TestKing1 (config-if) # **exit**
TestKing1 (config) # **router rip**
TestKing1 (config-router) # **network 192.168.27.0**
TestKing1 (config-router) # **network 192.168.29.0**
TestKing1 (config-router) # **network 192.168-31.0**
TestKing1 (config-router) # **Ctrl-Z**
TestKing1 # **copy running-config startup-config**

Click on Host 4

Router TestKing2:

TestKing2> **enable**
Password: **testking**
TestKing2 # **config t**
TestKing2 (config) # **interface ethernet 0**
TestKing2 (config-if) # **ip address 192.168.35.1 255.255.255.0**
TestKing2 (config-if) # **no shutdown**
TestKing2 (config-if) # **exit**
TestKing2 (config) # **interface serial 0**
TestKing2 (config-if) # **ip address 192.168.33.1 255.255.255.0**
TestKing2 (config-if) # **clock rate 64000**
TestKing2 (config-if) # **no shutdown**
TestKing2 (config-if) # **exit**
TestKing2 (config) # **interface serial 1**
TestKing2 (config-if) **# ip address 192.168.31.2 255.255.255.0**
TestKing2 (config-if) # **no shutdown**
TestKing2 (config-if) # **exit**
TestKing2 (config) # **router rip**
TestKing2 (config-router) # **network 192.168.35.0**
TestKing2 (config-router) # **network 192.168.33.0**
TestKing2 (config-router) # **network 192.168.31.0**

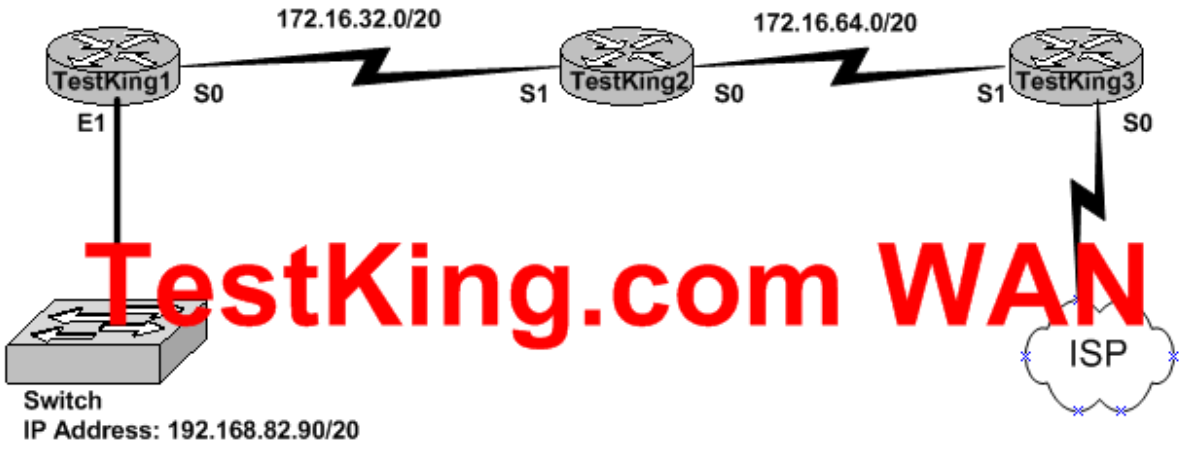
TestKing2 (config-router) # **Ctrl-Z**
TestKing2 # **copy running-config startup-config**

Router TestKing3:

Click on Host6

TestKing3> **enable**
Password: **testking**
TestKing3 # **config t**
TestKing3 (config) # **interface ethernet 0**
TestKing3 (config-if) # **ip address 192.168.37.1 255.255.255.0**
TestKing3 (config-if) # **no shutdown**
TestKing3 (config-if) # **exit**
TestKing3 (config) # **interface serial 1**
TestKing3 (config-if) # **ip address 192.168.33.2 255.255.255.0**
TestKing3 (config-if) # **no shutdown**
TestKing3 (config-if) # **exit**
TestKing3 (config) # **router rip**
TestKing3 (config-router) # **network 192.168.33.0**
TestKing3 (config-router) # **network 192.168.37.0**
TestKing3 (config-router) # **Ctrl-Z**
TestKing3 # **copy running-config startup-config**

QUESTION NO: 4
Exhibit:



The exhibit above shows the TestKing.com network.

Your trainee David asks you which broadcast addresses of the subnets are shown in the exhibit?(Choose three)

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

Answer: B E F
Explanation:
172.16.32.0/20 has 16 increments and the broad cast address will always be 1 before the actual number. 172.16.32.0 next increment will be 172.16.48.0 so then the broadcast address is 1 less than 172.16.48.0 = 172.16.47.255 (Broadcast address).

QUESTION NO: 5
Exhibit:

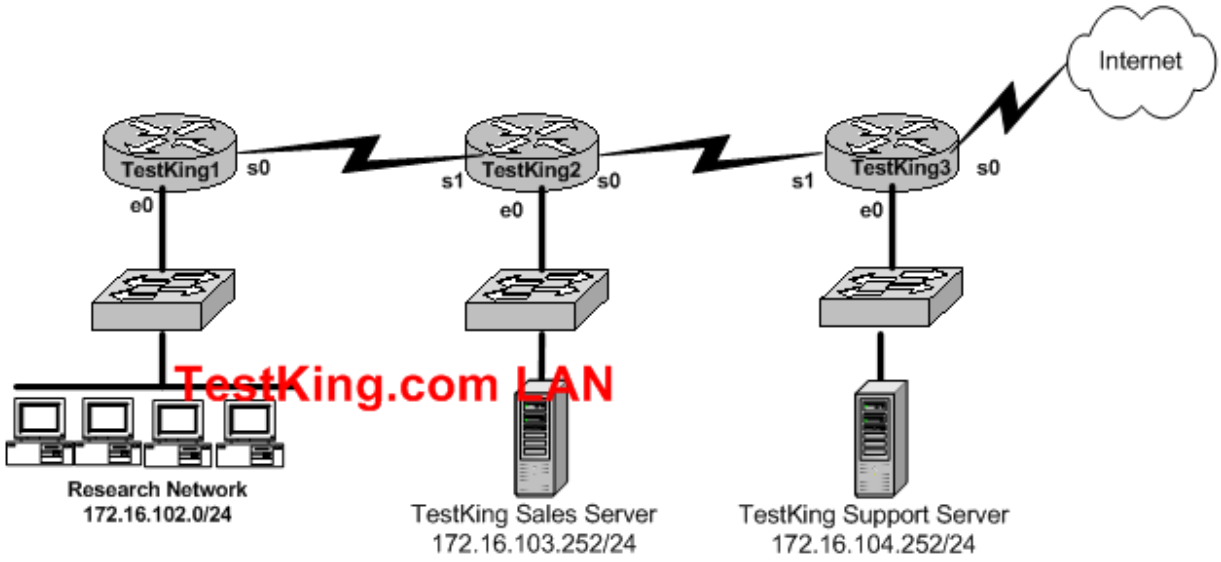
Two routers named TestKing1 and TestKing2 are connected via their serial interfaces as illustrated, but they are unable to communicate. The TestKing1 router is known to have the correct configuration. Given the partial configurations, identify the fault on the TestKing2 router that is causing the lack of connectivity.

A. Incomplete IP address
B. Insufficient bandwidth
C. Incorrect subnet mask
D. Incompatible encapsulation
E. Link reliability too low
F. IPCP closed

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 (Ciscopress, ISBN 1-58720-083-X) Page 310

QUESTION NO: 6
Exhibit:



You work as a network administrator at TestKing.com. A named access list called *research_block* has been written to prevent users on the research network and public Internet form access to the TestKing Support server. All other users within the TestKing company should have access to this server. The list 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 commands sequences will place this list to meet these requirements?

A. TestKing1(config)# **interface e0**
TestKing1(config-if)# **ip access-group research_block in**
B. TestKing1(config)# **interface s0**
TestKing1(config-if)# **ip access-group research_block out**
C. TestKing2(config)# **interface s0**
TestKing2(config-if)# **ip access-group research_block out**
D. TestKing2(config)# **interface s1**
TestKing2(config-if)# **ip access-group research_block in**
E. TestKing3(config)# **interface s1**
TestKing3(config-if)# **ip access-group research_block in**
F. TestKing3(config)# **interface e0**
TestKing3(config-if)# **ip access-group research_block out**

Answer: C
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 (Ciscopress, ISBN 1-58720-083-X) Page 433
http://www.cisco.com/en/US/products/sw/secursw/ps1018/products_tech_note09186a00800a5b9a.shtml

QUESTION NO: 7
Exhibit:

```
RouterTestKing# 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
```

Based on the display of the command output, what does *[120/3]* represent?

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

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 (Ciscopress, ISBN 1-58720-083-X) Page 177

QUESTION NO: 8
David, your TestKing trainee, asks you about basic characteristics of switches and hubs for network connectivity. What should you tell him?

A. Switches take less time to process frames than hubs take.
B. Switches do not forward broadcasts.
C. Hubs can filter frames.
D. Using hubs can increase the amount of bandwidth available to hosts.
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 (Ciscopress, ISBN 1-58720-094-5) Page 243

QUESTION NO: 9
Your boss at TestKing asks you about half-duplex and full-duplex Ethernet. What are unique for half-duplex Ethernet? (Choose two)

A. Half-duplex Ethernet operates in a shared collision domain.
B. Half-duplex Ethernet operates in a private collision domain.
C. Half-duplex Ethernet has higher effective throughput.
D. Half-duplex Ethernet has lower effective throughput.
E. Half-duplex Ethernet operates in a private broadcast 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 (Ciscopress, ISBN 1-58720-094-5) Page 62-63

QUESTION NO: 10
You work as a technician at TestKing. You are required to configure PPP on an interface on a Cisco router. A technician is configuring PPP on an interface.
Which PPP authentication methods can you use? (Choose two)

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

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 that the clear-text passwords sent by PAP.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 314

QUESTION NO: 11
Exhibit:

What function does the Frame Relay DLCI provide with respect to TestKingA?

A. Defines the signaling standard between TestKingA and the frame switch.
B. Identifies the circuit between TestKingA and the frame switch.
C. Identifies the circuit between TestKingB and the frame switch.
D. Identifies the encapsulation used between TestKingA and TestKingB.
E. Defines the signaling standard between TestKingB and the frame switch,

Answer: C
Explanation:
TestKingA 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 TestKingB. The TestKingB's local switch forwards the frame out of the access link to TestKingB.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 386

QUESTION NO: 12
A technician are configuring a router named TestKing2.
Why does she use passive-interface command?

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

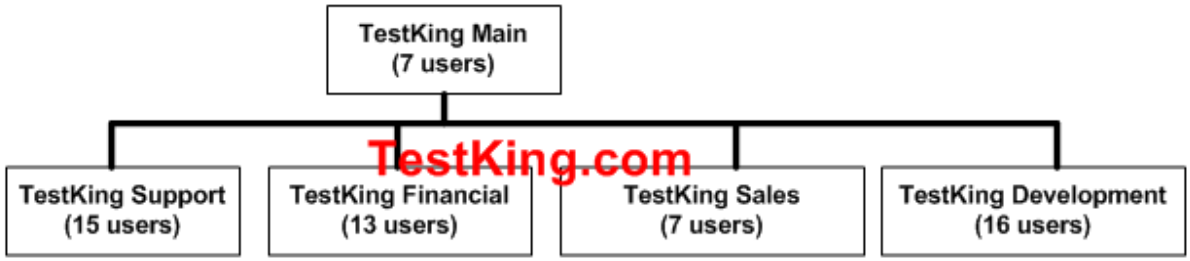
Answer: E
Explanation:

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

QUESTION NO: 13
Exhibit:



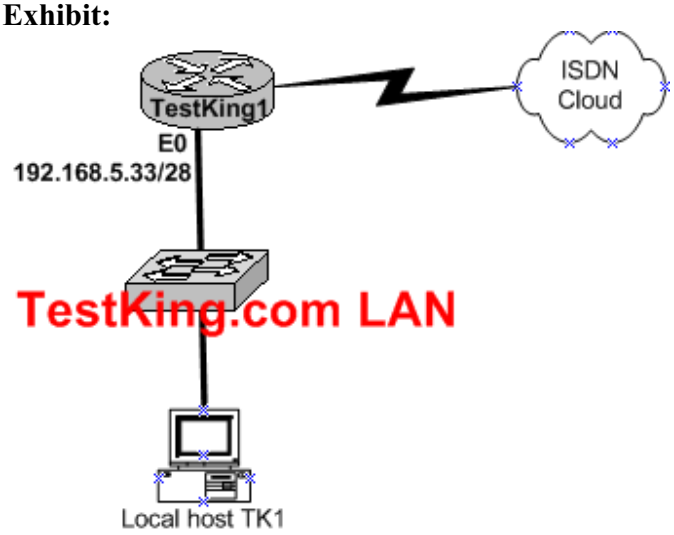
A new network is being designed for your company TestKing. Using a Class C IP network. which subnet mask will provide one useable subnet per department while allowing enough usable host addresses for each department specified in the graphic?

A. 255.255.255.0
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

QUESTION NO: 14
Exhibit:



As a network technician at TestKing you are required to troubleshoot the network shown in the exhibit. The host, TK1, is connected to the TestKing1 LAN is unable to connect to resources on other networks. Assuming that host is configured as follows:

host address: 192.168.5.45
subnet mask: 255.255.255.240
default gateway: 192.168.5.32

Which of the following is the cause of this problem?

A. The default gateway is a subnetwork address.
B. The default gateway is on a different subnet form the host.
C. The host subnet mask does not match the subnet mask of the attached router interface.
D. The IP address of the host is on a different subnet than the default gateway.

Answer: A

QUESTION NO: 15
Your boss at TestKing asks you why you are using a router to segment the network at the main office. What are the benefits? What should you tell her? (Choose two)

A. Filtering can occur based on Layer 3 information.
B. Broadcasts are eliminated.
C. Routers generally cost less than switches.
D. Broadcasts are not forwarded across the router.
E. Adding a router to the network decreases latency.

Answer: A, D

QUESTION NO: 16
You work as a network technician at TestKing. You are required to divide the 172.12.0.0 network into subnets. Each submit must have the capacity of 458 IP addresses.
Furthermore, according to the requirement you must provide the maximum number of subnets.
Which network mask should you use?

Answer: 255.255.254.0
Explanation:
To obtain 459 IP addresses the number of host bits will be 9. In this maximum 512 hosts can be assigned. Keep 9 bits for host means 4th octet and last bit is 3rd will be 0. This gives 255.255.254.0 is subnet mask.

QUESTION NO: 17
Your new Junior TestKing 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? (Choose two)

A. 159
B. 157
C. 185
D. 0x9D
E. 0xD9
F. 0x159

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

QUESTION NO: 18
Exhibit:

Note: SPIDs are not required for this switch.

You work as a network consultant. Your customer TestKing wants you to bring up the ISDN link (refer to the exhibit).
Which command should you use? (Select three)

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

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 gloabal configuration command.

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

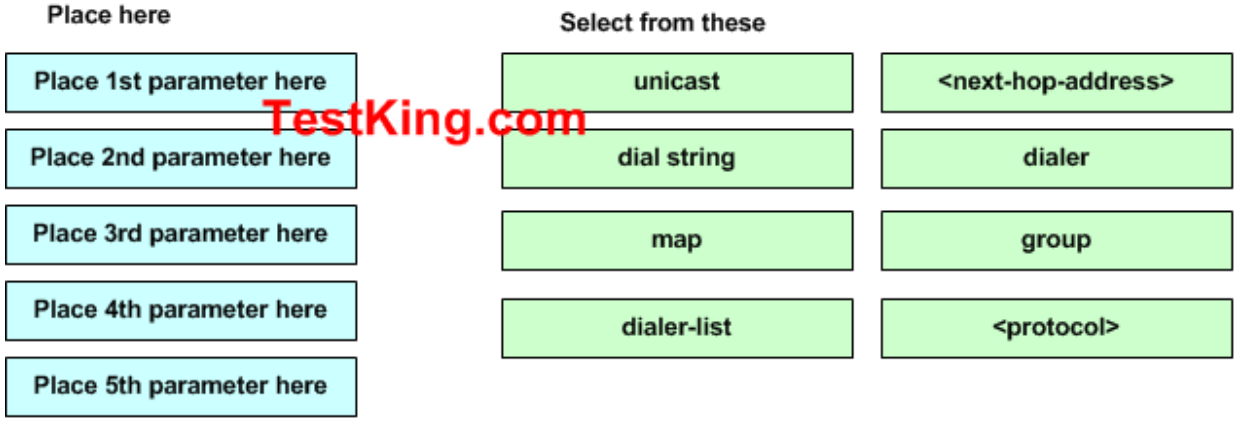
QUESTION NO: 19
You are required to troubleshoot LAN connectivity on the TestKing main site in Toronto.

Which router IOS commands would be useful for you? (Choose three)

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

Answer: A D F

QUESTION NO: 20
As a network technician at TestKing you are required to configure an ISDN BRI interface. Specifically, you must configure dial-on-demand routing (DDR).
Which sequence of parameters should you use to achieve this goal?



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 (Ciscopress, ISBN 1-58720-083-X) Page 342

QUESTION NO: 21
Your TestKing trainee Tess wants to display the configuration register setting on her router. Which command should she use?

A. **show register**
B. **show flash**
C. **show boot**
D. **show version**

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 Internetwork 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 (fc
1)
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

QUESTION NO: 22
You are configuring a subnet on the TestKing branch office in Berlin.
You need to assign IP addresses to hosts in this subnet.
You have been given the subnet mask of 255.255.255.224.
Which IP address would be valid? (Choose three)

A. 15.234.118.63
B. 92.11.178.93
C. 134.178.18.56
D. 192.168.16.87
E. 201.45.116.159
F. 217.63.12.192

Answer: B, C, D
Explanation:
B: Valid Host in subnetwork 2 (92.11.178.64 to 92.11.178.95)
C: Valid Host in subnetwork 1(134.178.18.32 to 134.178.18.63)
D: Valid host in subnetwork 2 (192.168.16.64 to 192.168.16.95

QUESTION NO: 23
You work as network administrator/technician at TestKing. You are configuring 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. Q933a
B. B8ZS
C. IETF
D. Cisco
E. ANSI

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 (Ciscopress, ISBN 1-58720-083-X) Page 382

QUESTION NO: 24
You have subnetted the 210.106.14.0 network with a /24 mask.
Your boss at TestKing wants to know how many usable subnetworks and usable host addresses per subnet this would provide.
What should you tell her?

A. 1 network with 254 hosts
B. 2 networks with 128 hosts
C. 4 networks with 64 hosts
D. 6 networks with 30 hosts

Answer: A

QUESTION NO: 25
TestKing , a fast growing company with one central headquarters site and 3 regional offices, is looking for a scalable WAN technology. Current plans include adding an additional 7 regional offices with all sites requiring continuous connectivity. The current HQ router has no free ports.
Which of the following WAN technologies would meet TestKing's requirements?

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

Answer: D
Explanation:
ADSL work by using a modem and is always on. The question tells you that the HQ router has no free ports, so by using a ADSL modem, it will be the best choice for this question. The cable modem would also be a good choice, but without much security, the ADSL is the better answer.

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 465

QUESTION NO: 26
You work as a network technician at TestKing. You are configuring a E0 interface connected to the 192.168.1.8/29 LAN on a Cisco router.
You apply the following access list to the interface.

```
access-list 123 deny tcp 192.168.1.8 0.0.0.7 eq 20 any
access-list 123 deny tcp 192.168.1.8 0.0.0.7 eq 21 any
```

What consequence will this access list have?

A. All traffic will be allowed to exit E0 except FTP traffic.
B. FTP traffic from 192.168.1.22 to any host will be denied.
C. FTP traffic from 192.168.1.9 to any host will be denied.
D. All traffic exiting E0 will be denied.
E. All FTP traffic to network 192.168.1.8/29 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.

QUESTION NO: 27
Your TestKing trainee Charles is curios about characteristics of link-state routing protocols.
What should you tell him? (Choose three)

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

Answer: A C F
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 roué 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 happened all at once, so the overhead s minimal.
- Uses cost for the metric.

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 417

QUESTION NO: 28
As a network technician at TestKing you are configuring access lists on an interface of a Cisco router. You use multiple access lists.
Which of the following statements are valid? (Select one)

A. There is no limit to the number of access lists that can be applied to an interface, as long as they are applied in order from most specific to most general.
B. Cisco IOS allows only one access list to be applied to an interface.
C. One access list may be configured per direction for each Layer 3 protocol configured on an interface.
D. Up to three access lists per protocol can be applied to a single interface.
E. No more than two access lists can be applied to a single interface.
F. The maximum number allowed varies depending on the amount of RAM installed in the router.

Answer: C

QUESTION NO: 29
You work as a network technician at TestKing. You are configuring a WAN link.
Which are typical Layer 2 encapsulations for this link? (Choose three)

A. Ethernet
B. Frame Relay
C. POTS
D. HDLC
E. PPP
F. Token Ring

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 (Ciscopress, ISBN 1-58720-083-X) Page

QUESTION NO: 30
Roger is setting up WAN connectivity between the TestKing New York and the TestKing Tokyo offices.
He uses a uses two data link layer encapsulations, one for data and one for signaling.
Which WAN Service does he use?

A. ISDN
B. Frame Relay
C. ATM
D. FDDI

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 (Ciscopress, ISBN 1-58720-083-X) Page 327

QUESTION NO: 31
You have segmented a network into two separate segments, segment 1 and segment2, with a Cisco router. Your boss at TestKing is concerned about the cost, and wants to what the purpose of your action is. What should you tell him?

A. It increases the number of collisions.
B. It decreases the number of broadcast domains.
C. It connects segment 1's broadcasts to segment 2.
D. It prevents segment 1's broadcasts from getting to segment 2.

Answer: D

QUESTION NO: 32
Your TestKing trainee Ellen is studying the basic of distance vector and link state routing protocols. As her mentor, what could you tell her? (Choose two)

A. Distance vector protocols send the entire routing table to directly connected neighbors.
B. Link state protocols send the entire routing table to all routers in the network.
C. Distance vector protocols send updates about directory connected neighbors to all networks listed in the routing table.
D. Link state protocols send updates containing the state of their own links to all other routers on the network.

Answer: A D
Explanation:
Distance Vector Protocols:
Distance Vector Protocols advertise routing information by sending messages, called routing updates, out the interfaces on a router. These updates contain a series of entries, with each entry representing a subnet and a metric.
Link-State Protocols:
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.

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 413 + 419

QUESTION NO: 33
Your TestKing trainee Bob wants some information regarding the split horizon rule. What should you tell him?

A. Only routers can split boundaries (horizons) between concentric networks.
B. All distance vector protocols require fall back routes that may cause momentary loops as the topology changes.
C. Networks can only remain fully converged if all information about routes is sent out all active interfaces.
D. Information about a route should not be sent back in the direction from which the original update came.
E. Each AS must keep routing tables converged to prevent dead routes from being advertised across the AS boundary.

Answer: D
Explanation:
Split horizon blocks information about routes from being advertised by a router out of any interface from which that information originated.

Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1826/products_configuration_guide_chapter09186a00800877c6.html

QUESTION NO: 34
Your boss at TestKing want you to brief him on differences and similarities between bridges and switches.
What should you tell her? (Choose two)

A. Bridges are faster than switches because they have fewer ports.
B. A switch is a multiport bridge,
C. Bridges and switches learn MAC addresses by examining the source MAC address of each frame received.
D. A bridge will forward a broadcast but a switch will not.
E. Bridges and switches increase the size of a collision domain.

Answer: B C
Explanation:
Bridges build the bridge table by listening to incoming frames and examining the source MAC address in the frame.
Switches are multiport bridges that allow you to create multiple broadcast domains. Each broadcast domain is like a distinct virtual bridge within a switch.

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 239

http://www.cisco.com/en/US/products/hw/switches/ps4324/products_configuration_guide_chapter09186a00801 86a3e.html

QUESTION NO: 35
Exhibit:
```
o/r 0x2142
```

You are working with a 2500 series Cisco router. You are performing the password recovery procedure. You have just typed the command shown in the exhibit.
Your TestKing trainee Mahmoud is curious on the purpose of this command.
What should you tell him?

A. To restart the router.
B. To bypass the configuration in NVRAM.
C. To view the lost password.
D. To save the changes to the configuration.
E. To enter ROM Monitor mode.

Answer: B
Explanation:
o/r 0x2142

!--- Changes the value of config-register to 2142, so that the Router boots,
!---ignoring the NVRAM contents.

Reference:
http://www.cisco.com/en/US/products/hw/routers/ps233/products_password_recovery09186a0080094795.shtml

QUESTION NO: 36
You have told your boss at TestKing that the OSI model has 7 layers. He is curious which protocol is on the application layer. He asks you to give him two examples of items associated with the layer.
What should you tell him? (Select two)

A. ping
B. Telnet
C. FTP
D. TCP
E. IP

Answer: B C
Explanation:

Layer Name	**Examples**
Application (layer 7)	Telnet, HTTP, FTP, WWW browsers, NFS, SMTP gateways, SNMP

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 34

QUESTION NO: 37
You are working as a network technician at TestKing.
You are required to troubleshooting the WAN link between the TestKing main office at Boston and the TestKing remote office at Rio De Janeiro.
A Cisco router that was providing Frame Relay connectivity at the Rio de Janeiro site as replaced with a different vendor's frame relay router. Connectivity is now down between the Boston and Rio De Janeiro site.
What is the most likely cause of the problem?

A. Mismatched LMI types.
B. Incorrect DLCI.
C. Mismatched encapsulation types.
D. Incorrect IP address mapping.

Answer: A
Explanation:
Three LMI protocol options are available in Cisco IOS software: Cisco, ITU, and ANSI. Each LMI option is slightly different and therefore is incompatible with the other two. As long as both the DTE and DCE on each end of an access link use the same LMI standard, LMI works fine.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 381

QUESTION NO: 38
Exhibit:

```
hostname TestKingA
!
!
interface Ethernet0
 ip address 192.168.10.9 255.255.255.248
!
interface Serial0
 ip address 172.16.25.1 255.255.255.0
 clockrate 56000
!
interface Serial1
 ip address 10.1.1.1 255.255.255.0
!
router rip
 network 192.168.10.0
!
line con 0
 password testking
 login
line aux 0
line vty 0 4
 password testking
 login
!end
```

Five new routes need to be configured quickly for testing. While connected to a router by console, the administrator copies and pastes a configuration from a text file, a part of which is shown in the graphic, into the HyperTerminal window.
Why would host 192.168.10.10/29 be unable to ping the Ethernet interface of the router as a result of this procedure?

A. The new configuration needs to be saved to the NVRAM before the changes take effect.
B. The router needs to be reloaded before the changes are implemented.
C. The Ethernet network does not show up in the routing table because the RIP configuration is incomplete.
D. The copied configuration did not overwrite the shutdown command on the Ethernet interface.
E. The subnet mask on the router prevents the host from communicating with it.

Answer: D
Explanation:
Default configuration of any interface is always shutdown and always needs the command "no shutdown" in the interface command mode in order to enable the interface.

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 379

QUESTION NO: 39
Exhibit:

```
testking1# debug ip rip

<some output text is omitted>

testking1#debug ip rip
ld00h: RIP:received v1 update from 172.16.100.2 on Serial0/0
ld00h: 172.16.10.0 in 1 hops
ld00h: 172.16.20.0 in 1 hops
ld00h: 172.16.30.0 in 1 hops

testking1# show ip route

Gateway of last resort is not set

  172.16.0.0/24 is subnetted, 8 subnets
C   172.16.150.0 is directly connected, FastEthernet0/0
C   172.16.220.0 is directly connected, Loopback2
C   172.16.210.0 is directly connected, Loopback1
C   172.16.200.0 is directly connected, Loopback0
R   172.16.30.0 [120/1] via 172.16.100.2, 00:00:07, Serial0/0
S   172.16.20.0[1/0] via 172.16.150.15
R   172.16.10.0[120/1] via 172.16.100.2,00:00:07, Serial0/0
C   172.16.100.0 is directly connected, Serial0/0
```

The network administrator at TestKing has found the following problem. The remote networks 172.16.10.0, 172.16.20.0, and 172.16.30.0 are accessed through the testking1 router's serial 0/0 interface. No users are able to access 172.16.20.0. After reviewing the command output shown in the graphic, what is the most likely cause of the problem?

A. No gateway of last resort on testking1.
B. testking1router's not receiving 172.16.20.0 update.
C. Incorrect static route for 172.16.20.0.
D. 172.16.20.0 not located in testking1's routing table.

Answer: C

QUESTION NO: 40

You work as a network technician at TestKing. You have subnetted the 213.105.72.0 network with a /28 mask. Your boss asks you how many usable subnetworks and usable host addresses per subnet this will provide. What should you tell her?

A. 62 networks and 2 hosts
B. 6 networks and 30 hosts
C. 8 networks and 32 hosts
D. 16 networks and 16 hosts
E. 14 networks and 14 hosts

Answer: E

QUESTION NO: 41
Exhibit:

```
ROUTER_B#show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, * - candidate default
       U - per-user static route

Gateway of last resort is not set

R    192.168.8.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
C    192.168.9.0/24 is directly connected, Serial1
R    192.168.10.0/24 [120/7] via 192.168.9.1, 00:00:02, Serial1
R    192.168.11.0/24 [120/7] via 192.168.9.1, 00:00:03, Serial1
C    192.168.1.0/24 is directly connected, Ethernet0
C    192.168.2.0/24 is directly connected, Serial0
R    192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
R    192.168.4.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R    192.168.5.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R    192.168.6.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R    192.168.7.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
```

You are troubleshooting a Cisco router at the main office of TestKing in Toronto.
You enter the show ip route command. The output is displayed in the exhibit.
Which route will not be entered into the routing table of a neighboring router?

A. R 192.168.8.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
B. R 192.168.11.0/24 [120/7] via 192.168.9.1, 00:00:03, Serial1
C. C 192.168.1.0/24 is directly connected, Ethernet0
D. R 192.168.5.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0

Answer: D

Explanation: RIP has the maximum hop count of 15. This route already has a hop count of 15 and adding one would make it unreachable (see below). This route will be discarded.

R 202.30.5.0/24 [120/15] via 202.30.2.2, 00:00:10, Serial0

QUESTION NO: 42
You work as a network technician at TestKing. You have subnetted the 201.105.13.0 network with a /26 mask. Your boss asks you how many usable subnetworks and usable host addresses per subnet this will provide. What should you tell her?

A. 64 networks and 4 hosts
B. 4 networks and 64 hosts
C. 2 networks and 62 hosts
D. 62 networks and 2 hosts

Answer: C

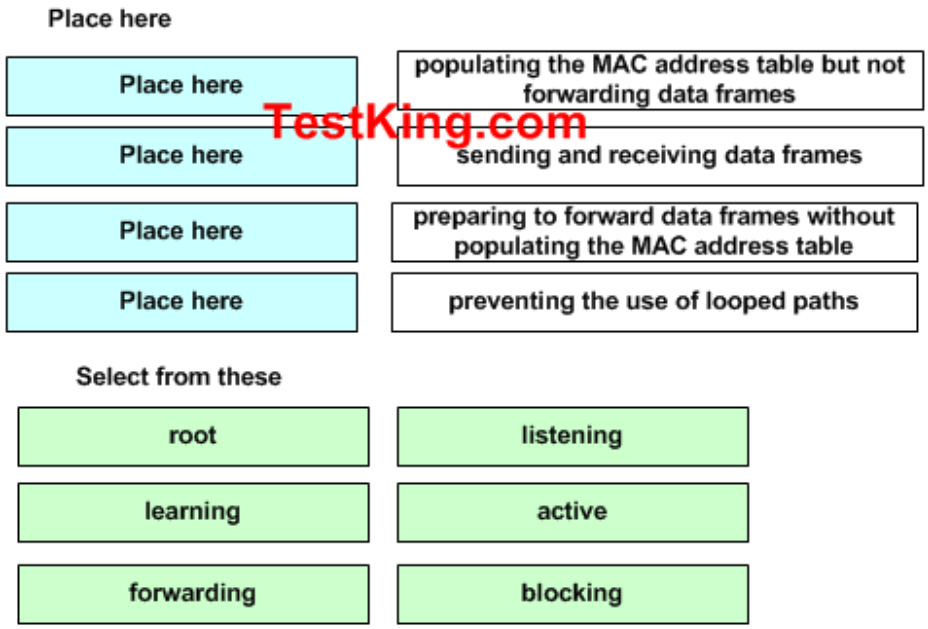
QUESTION NO: 43
Your TestKing trainee Fernanda is studying the spanning three algorithm. She asks you how the spanning-tree path cost is determined by default.
What should you tell her?

A. Total hop count.
B. Sum of the costs based on bandwidth.
C. Dynamically determined based on load.
D. Individual link cost based on latency.

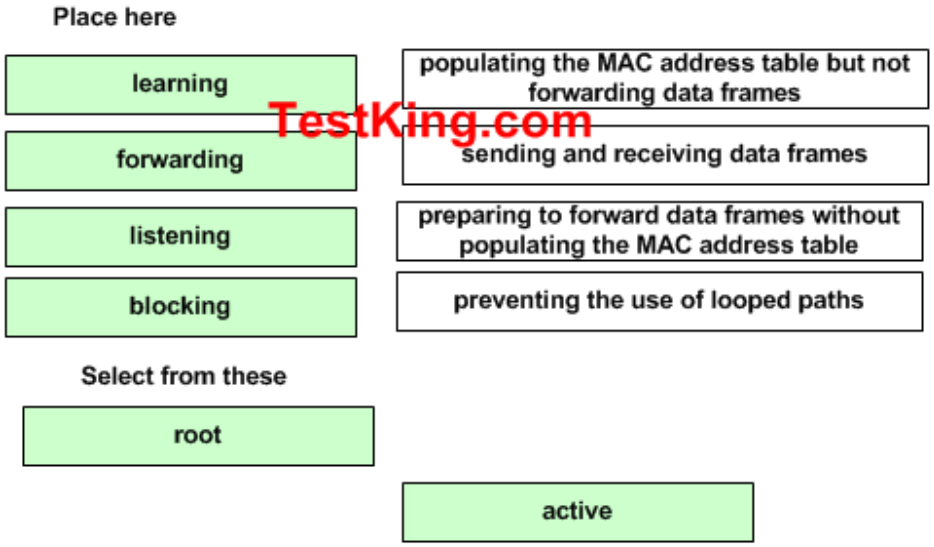
Answer: D

QUESTION NO: 44
You are giving a lecture on the Spanning-Tree algorithm for your TestKing trainees.
You need to connect the Spanning-Tree Protocol states with the correct functions.

(Not all options are used.)



Answer:



Explanation:

- **Listening -** Listens to incoming Hello messages to ensure that there are no loops, but does not forward traffic or learn MAC addresses on the interface.
- **Learning** –learns MAC addresses and builds a filter table but does not forward frames.
- **Forwarding** – Sends and receives all data on the bridged port.
- **Blocking** – are used to prevent network loops.

Reference:
CCNA Study guide Second Edition (Sybex, Todd Lammle) page 82

QUESTION NO: 45
You work as a network technician at TestKing. You are required to establish a Telnet session with a cisco router. Which commands should you use?

A. testking1(config)# **line console 0**
testking1(config-if)# **enable password testking**
B. testking1(config)# **line console 0**
testking1(config-line)# **enable secret testking**
testking1(config-line)# **login**
C. testking1(config)# **line console 0**
testking1(config-line)# **password testking**
testking1(config-line)# **login**
D. testking1(config)# **line vty 0**
testking1(config-line)# **enable password testking**
E. testking1(config)# **line vty 0**
testking1(config-line)# **enable secret testking**
testking1(config-line)# **login**
F. testking1(config)# **line vty 0**
testking1(config-line)# **password testking**
testking1(config-line)# **login**

Answer: F
Explanation:

Access from	**Password Type**	**Configuration**
Telnet	vty password	line vty 0 4 login password cisco

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 177

QUESTION NO: 46
A Law firm has offices in three different countries. Two of the offices have network connectivity to each other. The third office has recently received a router and is to be connected to the other two. The names of the routers are TestKing1, TestKing2, and TestKing3. Configure the TestKing3's router's IP addresses on the E0 and S1 interfaces so that the E0 interface receives the first usable subnet while the S1 interface

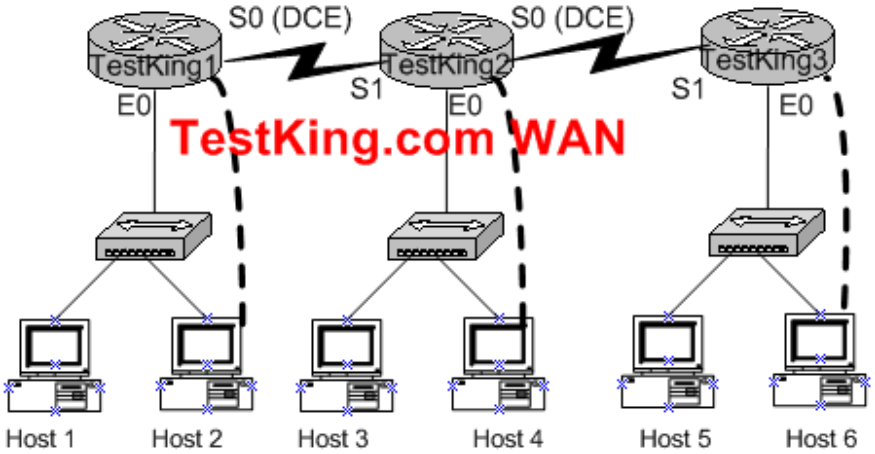
receives the second usable subnet from the network 192.168.101.0/28. Both interfaces should receive the first available IP of the subnet. The zero subnet should not be used. The routers have been configured with the following specifications.

- **The routers are named TestKing1, TestKing2, and TestKing3.**
- **RIP is the routing protocol.**
- **Clocking is provided on the serial 0 interfaces**
- **The secret password on the TestKing3 router is "testking"**
- **The subnet mask of all networks other than 192.168.101.0 is the default mask.**
- **The IP addresses are listed in the chart below.**

TestKing1
E0 192.168.93.1
S0 192.168.95.1

TestKing2
E0: 192.168.97.1
S0: 192.168.101.42
S1: 192.168.95.2

TestKing3
E0 to be determined
S1 to be determined
Secret password: testking



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

Answer:
TestKing3> **enable**
Password: **testking**
TestKing3 # **config terminal**

TestKing3 (config) # **interface ethernet 0 (Shorthand: int e 0)**
TestKing3 (config-if) # **ip address 192.168.101.17 255.255.255.240**
TestKing3 (config-if) # **no shutdown**
TestKing3 (config-if) # **exit**
TestKing3 (config-) # **interface serial 1 (Shorthand: int s 1)**
TestKing3 (config-if) # **ip address 192.168.101.33 255.255.255.240**
TestKing3 (config-if) # **no shutdown**
TestKing3 (config-if) # **CTRL+Z**
TestKing3 # **copy running-config startup-config**

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 165

CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 486

QUESTION NO: 47
You work as a network consultant. You are planning a network installation for a large organization named TestKing. The design requires 100 separate subnetworks, so TestKing has acquired a Class B network address.
What subnet mask will provide the 100 subnetworks required, if 500 usable host addresses are required per subnet?

A. 255.255.240.0
B. 255.255.246.0
C. 255.255.252.0
D. 255.255.254.0
E. 255.255.255.0
F. 255.255.255.192

Answer: D

QUESTION NO: 48
Your TestKing trainee Jose are interested in ACLs (access control lists).
He asks you want they can be used for.
What should you tell him? (Choose three)

A. Protect hosts from viruses.
B. Classify network traffic.

C. Provide high network availability.
D. Identify interesting traffic for DDR.
E. IP route filtering.
F. Monitor the number of bytes and packets.

Answer: C, D, E
Explanation:
IP access control lists (ACLs) cause a router to discard some packets based on criteria defined by the network engineer. The goal of these filters is to prevent unwanted traffic in the network – whether to prevent hackers from penetrating the network or just to prevent employees from using systems they should not be using.
IP access lists can also be used to filter routing updates, to match packets for prioritization, to match packets for prioritization, to match packets for VPN tunneling, and to match packets for implementing quality of service features.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 427

QUESTION NO: 49
You are configuring a network at TestKing main site in Toronto. You use a distance vector routing protocol.
What could you use to prevent rooting loops in the network? (Choose two)

A. Link-state advertisements (LSA)
B. Spanning Tree Protocol
C. Shortest path first tree
D. Split horizon
E. Hold-down timers

Answer: D E
Explanation:
- **Split horizon –** the routing protocol advertises routes out an interface only if they were not learned from updates entering that interface.
- **Hold-down timer –** After finding out that a router to a subnet has failed, a router waits a certain period of time before believing any other routing information about that subnet.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 154

QUESTION NO: 50

Exhibit:

Refer to the router topology shown in the exhibit. Assuming that all routers are running RIP, which statements describe how the routers exchange their routing tables? (Choose two)

A. TestKing1 exchanges with TestKing3.
B. TestKing1 exchanges with TestKing4.
C. TestKing1 exchanges with TestKing2.
D. TestKing4 exchanges with TestKing3.
E. TestKing4 exchanges with TestKing1.
F. TestKing4 exchanges with TestKing2.

Answer: A, D

QUESTION NO: 51
Your TestKing trainee Boris is configuring a serial interface on a Cisco router.
He asks you which encapsulations he can use on the interface.
What should you tell him? (Choose three)

A. Ethernet
B. Token Ring
C. HDLC
D. Frame Relay
E. PPP

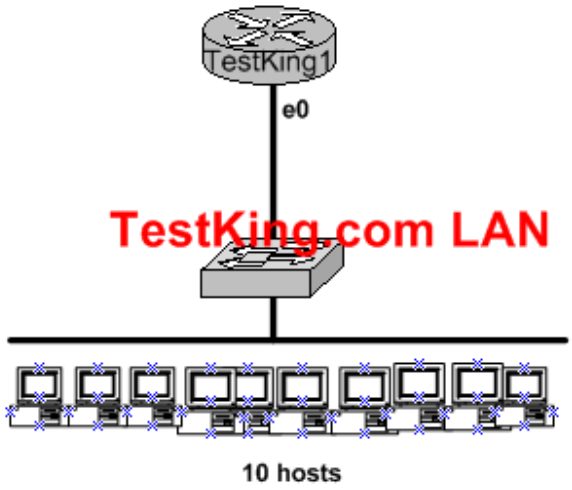
Answer: C, D, E

QUESTION NO: 52

You work as network consultant. Your customer, TestKing Inc, has a class C network license. TestKing requires 5 usable subnets, each capable of accommodating at least 18 hosts.
Which subnet mask should you use?

Answer: 255.255.255.224
Explanation:
Default subnet mask for class C network is 255.255.255.0. If one has to create 5 subnets , then 3 bits are required . With 3 bits we can create 6 subnets. Remaining 5 bits are used for Hosts. One can create 30 hosts using 5 bits in host field. This matches with requirement.

QUESTION NO: 53
Exhibit:



Refer to the topology shown in the graphic. Each host is connected through its own 10Mbps half-duplex switch port to the e0 interface of the router TestKing1.
What is the bandwidth available to each host?

A. 1 Mbps
B. 10 Mbps
C. 20 Mbps
D. 100 Mbps

Answer: B

QUESTION NO: 54

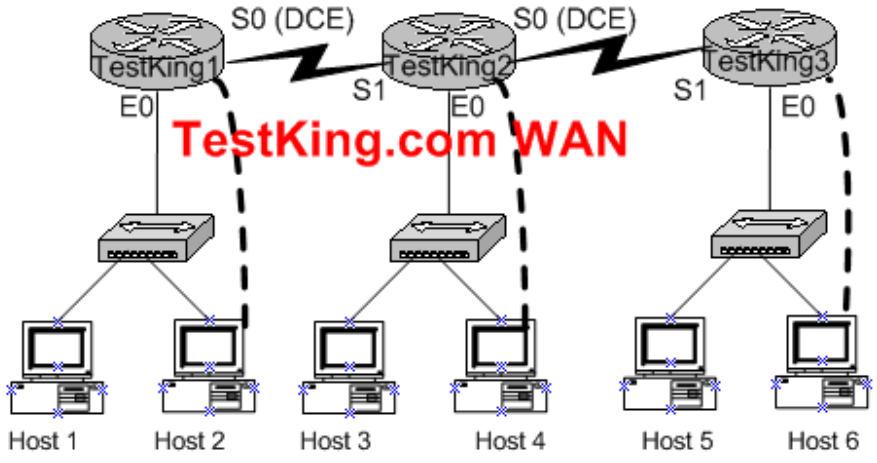
Three sites, TestKing1, TestKing2, and TestKing3 are connected via a WAN. At each site a router provides serial connectivity to the Wan and an Ethernet connection to a LAN. All three routers are configured, and the network is functional. Configure and apply an access list will prevent telnet access to the TestKing1 router while allowing all other traffic to pass. The access list should not contain more than three (3) statements and should be applied to the TestKing1 router. The routers have been previously configured with the following specifications:

- **The routers are named TestKing1, TestKing2, and TestKing3.**
- **RIP is the routing protocol.**
- **The clocking signal is provided on the serial 0 interfaces.**
- **All passwords on all routers are "testking".**
- **The subnet mask on all the interfaces is the default mask.**
- **IP addresses are listed in the chart below.**

TestKing1
E0 192.168.149.1
S0 192.168.199.1
Secret password: testking

TestKing2
E0 192.168.155.1
S0 192.168.11.1
S1 192.168.199.2
Secret password: testking

TestKing3
E0 192.168.165.1
S1 192.168.11.2



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

Answer:
TestKing1>**enable**
Password:
TestKing1#**show access-lists**
TestKing1#**config t**
Enter configuration commands, one per line. End with END.
TestKing1(config)#**access-list 101 deny tcp any 192.168.149.1 0.0.0.0 eq 23**
TestKing1(config)#**access-list 101 deny tcp any 192.168.199.1 0.0.0.0 eq 23**
TestKing1(config)#**access-list 101 permit ip any any**
TestKing1(config)#**interface Ethernet 0**
TestKing1(config-if)#**ip access-group 101 in**
TestKing1(config-if)#**exit**
TestKing1(config)#**interface serial 0**
TestKing1(config-if)#**ip access-group 101 in**
TestKing1(config-if)# **<CTRL-Z>**
..
TestKing1#**copy running-config startup-config**
Destination filename [startup-config]?
Building configuration….

[OK]

TestKing1#

QUESTION NO: 55
You work as a network technician at TestKing. You have completed the password recovery procedure on a Cisco router. The process is successful and the router returns to normal operation.
What is configuration register value at this point of time?

A. 0x2100
B. 0x2101
C. 0x2102
D. 0x2124
E. 0x2142

Answer: C
Explanation: It is default factory setting. Router should attempt to load an IOS from flash memory and load startup configuration file. Flash memory also called NVRAM

Incorrect answers
A: It is ROM Monitor mode. A low level problem determination

B: Router to boot from ROM
E: The value 0x2142 to be set for configuration register in case of password recovery procedure

QUESTION NO: 56
What feature of a networks switch allows an administrative to create separate broadcast domains?

A. Store-and-forward switching
B. Microsegmentation
C. Transparent bridging
D. Fragment-free switching
E. Virtual LANs
F. Cut-through switching

Answer: E
Explanation: Creation of VLAN in a switch provide separate Broadcast domain . If VLAN is not there all ports as members of one Broadcast domain.

Reference: Wendell Odom. CISCO CCNA Certification Guide (2000 Press) Page 172

Incorrect Answers
A: This is one of the Switching method in a switch. It will not play any role for creating separate broadcast domains
B: Not related to the question
C: Transparent bridging is called Transparent because the endpoints devices do not need to know that the bridges exists. It will not play any role for creating separate broadcast domain
D,F: Both are switching methods in a switch**.**

QUESTION NO: 57
New switches have been purchased for a network upgrade. The objective for the network design emphasizes efficient, error-free transport instead of fast transport.
Which switching mode should be configured on the new switches to provide error-free transport to the network?

A. cut-through
B. fragment-free
C. frame-filtering
D. store-and-forward
E. 802.1q forwarding
F. VTP transparent mode

Answer: D
Explanation:
The Switch receives and stores all bits in the frame before forwarding the frame. This allows switch to check the FCS before forwarding the frame. FCS is Ethernet Trailer.
Incorrect answers:

A. The Switch performs the address table lookup as soon as the destination address field in the header is received. The first bits in the frame can be sent out to out port before the final bits in the incoming frame are received. This does not allow the switch to discard frames that fail the FCS check.

B. This is also same as A. But Switch waits 64 bytes to be received before forwarding the first bytes of the outgoing frame. Collisions may occur during first 64 bytes of the frame. Frames in error due to collision will not be forwarded. The FCS still cannot be checked.

C,E,F : They are not related to Switch mode transport.

QUESTION NO: 58
Given a subnet mask of 255.255.255.224, which of the following addresses can be assigned to network hosts? (Select three.)

A. 15.234.118.63
B. 92.11.178.93
C. 134.178.18.56
D. 192.168.16.87
E. 201.45.116.159
F. 217.63.12.192

Answer: B, C, D
Explanation:
B: Valid Host in subnetwork 2 (92.11.178.64 to 92.11.178.95)
C: Valid Host in subnetwork 1(134.178.18.32 to 134.178.18.63)
D: Valid host in subnetwork 2 (192.168.16.64 to 192.168.16.95

Incorrect answers:
A. is a broadcast
E. is a broadcast
F. is a network id

QUESTION NO: 59
A technician at TestKing needs to update the network documentation. One of the tasks includes documenting the name of the IOS image file of each router in the network.
Which commands could be used to find this information?

A. `Router# show protocols`
B. `Router# show version`
C. `Router# show image`
D. `Router# show IOS`
E. `Router# show flash`

Answer: B
"Show flash" displays all the image files in it. There could be more than one file. However, "show version" displays the one that is currently in use by the router.)
Incorrect answers:
A: Show Protocols will shows routed Protocol using by the router, all interface conditions and their IP address if configured.
C,D. There are no such commands.

QUESTION NO: 60
Which statement describes the rule of split horizon?

A. Only routers can split boundaries (horizons) between concentric networks.
B. All distance vector protocols require fall back routers that may cause momentary loops as the topology changes.
C. Networks can only remain fully converged if all information about routers is sent out all active interfaces.
D. Information about a route should not be sent back in the direction from which the original update come.
E. Each AS must keep routing tables converged to prevent dead routes from being advertised across the AS boundary.

Answer: D
Explanation:
Split horizon includes two related concepts that affect what routes are included in a routing update:
An update does not include the subnet of the interface out which the update is sent
All routes with outgoing interface of interface x are not included in updates sent out that same interface x.

Reference: Wendell Odom. CISCO CCNA Certification Guide (2000 Press) Page 369

Incorrect Answers
A: There is no such requirement
B: Distance vector protocols updates routing table at regular intervals instead of Topology changes
C: This is not a feature of split horizon
E: This is not a related feature for split horizon

QUESTION NO: 61
Exhibit:

Which of the following is the minimum configuration commands required to bring up the ISDN link shown in graphic.
Note : SPIDs are not required for this switch. (Choose three)

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

Answer: A, E, F
Explanation:
A: Proper encapsulation to be defined on both routers.
E: IP address to be assigned for interface with subnet mask
F: Dialer group number enables dialer-list on this interface. Dialer-list to be defined on gloabal configuration command.
Incorrect Answers:
B, C: The commands are executed on global configuration command.
D: Syntax is wrong. Proper syntax is dialer map ip ip address/subnet mask name connection name number.

QUESTION NO: 62
Which of the following are characteristics of PPP? (Choose three)

A. Can be used over analog circuits.
B. Maps Layer 2 to Layer 3 address.
C. Encapsulates several routed protocols.
D. Supports IP only.
E. Provides error correction.

Answer: A C E

Explanation:

- PPP can be used on either type of line (dial or switched lines), because data-link protocols are designed for point-to-point environment.
- PPP uses one LCP per link and one Control Protocol for each Layer 3 protocol defined on the link. If a router is configured for IPX, Apple Talk, and IP on a PPP serial link, the router configured for PPP encapsulation automatically tries to bring I the appropriate control protocols for each layer 3 protocol.
- Error recovery can be performed by the data-link protocol or a higher-layer protocol, or it might not be performed at all. Supported but not enabled by default.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 309

QUESTION NO: 63
A user types the command ping 204.211.38.52 during a router console session.
What does this command use to test connectivity between the two devices?

A. ICMP echo request
B. Information request
C. Timestamp reply
D. Redirect
E. Source quench

Answer: A
Explanation:
The ping command sends an ICMP echo request packet to the stated destination address. The TCP/IP software at the destination then replies to the ping echo request packet with a similar packet, called ICMP echo reply.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 146

QUESTION NO: 64
An administrator must assign static IP addresses to the servers in the network. For network 192.168.20.24/29 the router is assigned the first usable host address while the sales server is given the last usable host address.
Which of the following should be entered into the IP properties box for the sales server?

A. IP address: 192.168.20.14 Subnet Mask: 255.255.255.248 Default Gateway: 192.168.20.9
B. IP address: 192.168.20.254 Subnet Mask: 255.255.255.0 Default Gateway: 192.168.20.1

C. IP address: 192.168.20.30 Subnet Mask 255.255.255.248 Default Gateway: 192.168.20.25
D. IP address: 192.168.20.30 Subnet Mask 255.255.255.240 Default Gateway: 192.168.20.17
E. IP address: 192.168.20.30 Subnet Mask 255.255.255.240 Default Gateway: 192.168.20.25

Answer: C

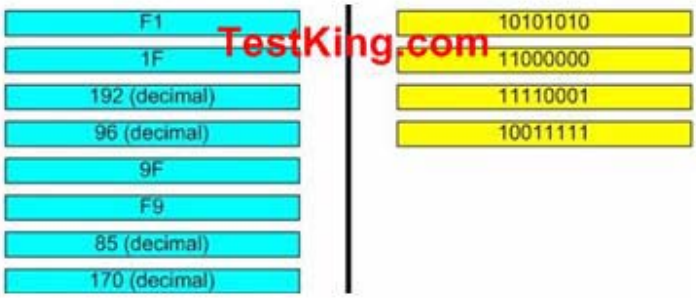
QUESTION NO: 65
Which two statements about the store and forward switching method are true? (Choose two)

A. Latency remains constant regardless of frame size.
B. Latency through the switch varies with frame length.
C. The switch receives the complete frame before beginning to forward it.
D. The switch checks the destination address as soon as it receives the header and begins forwarding the frame immediately.

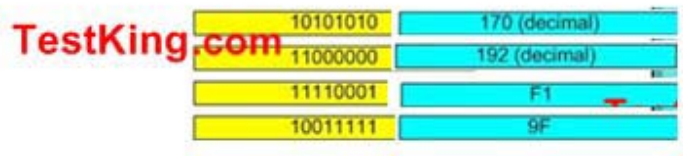
Answer: B D
Explanation:
With store-and-forward, the entire frame is received by the switch before the first bit of the frame is forwarded. As soon as the incoming switch port receives enough of the frame to see the destination MAC address, the forwarding decision is made and the frame is transmitted out the appropriate outgoing port to the destination device. So, each frame might experience slightly less latency.

Reference:
CCNA Self-Study CCNA INTRO exam certification Guide (Ciscopress, ISBN 1-58720-094-5) Page 243

QUESTION NO: 66
Match the hex and decimal numbers listed on the left with the corresponding binary number listed on the right. Not all options apply.



Answer:



Explanation:
170 (Decimal) = 10101010
192 (Decimal) = 11000000
F1 (241 = Decimal) = 11110001
9F (159 = Decimal) = 10011111

DEC	HEX	BIN	DEC	HEX	BIN	DEC	HEX	BIN
0	00	00000000	43	2B	00101011	86	56	01010110
1	01	00000001	44	2C	00101100	87	57	01010111
2	02	00000010	45	2D	00101101	88	58	01011000
3	03	00000011	46	2E	00101110	89	59	01011001
4	04	00000100	47	2F	00101111	90	5A	01011010
5	05	00000101	48	30	00110000	91	5B	01011011
6	06	00000110	49	31	00110001	92	5C	01011100
7	07	00000111	50	32	00110010	93	5D	01011101
8	08	00001000	51	33	00110011	94	5E	01011110
9	09	00001001	52	34	00110100	95	5F	01011111
10	0A	00001010	53	35	00110101	96	60	01100000
11	0B	00001011	54	36	00110110	97	61	01100001
12	0C	00001100	55	37	00110111	98	62	01100010
13	0D	00001101	56	38	00111000	99	63	01100011
14	0E	00001110	57	39	00111001	100	64	01100100
15	0F	00001111	58	3A	00111010	101	65	01100101
16	10	00010000	59	3B	00111011	102	66	01100110
17	11	00010001	60	3C	00111100	103	67	01100111
18	12	00010010	61	3D	00111101	104	68	01101000
19	13	00010011	62	3E	00111110	105	69	01101001
20	14	00010100	63	3F	00111111	106	6A	01101010
21	15	00010101	64	40	01000000	107	6B	01101011
22	16	00010110	65	41	01000001	108	6C	01101100
23	17	00010111	66	42	01000010	109	6D	01101101
24	18	00011000	67	43	01000011	110	6E	01101110
25	19	00011001	68	44	01000100	111	6F	01101111
26	1A	00011010	69	45	01000101	112	70	01110000
27	1B	00011011	70	46	01000110	113	71	01110001
28	1C	00011100	71	47	01000111	114	72	01110010
29	1D	00011101	72	48	01001000	115	73	01110011
30	1E	00011110	73	49	01001001	116	74	01110100
31	1F	00011111	74	4A	01001010	117	75	01110101
32	20	00100000	75	4B	01001011	118	76	01110110
33	21	00100001	76	4C	01001100	119	77	01110111
34	22	00100010	77	4D	01001101	120	78	01111000
35	23	00100011	78	4E	01001110	121	79	01111001
36	24	00100100	79	4F	01001111	122	7A	01111010
37	25	00100101	80	50	01010000	123	7B	01111011
38	26	00100110	81	51	01010001	124	7C	01111100
39	27	00100111	82	52	01010010	125	7D	01111101
40	28	00101000	83	53	01010011	126	7E	01111110
41	29	00101001	84	54	01010100	127	7F	01111111
42	2A	00101010	85	55	01010101			

DEC	HEX	BIN	DEC	HEX	BIN	DEC	HEX	BIN
128	80	10000000	171	AB	10101011	214	D6	11010110
129	81	10000001	172	AC	10101100	215	D7	11010111
130	82	10000010	173	AD	10101101	216	D8	11011000
131	83	10000011	174	AE	10101110	217	D9	11011001
132	84	10000100	175	AF	10101111	218	DA	11011010
133	85	10000101	176	B0	10110000	219	DB	11011011
134	86	10000110	177	B1	10110001	220	DC	11011100
135	87	10000111	178	B2	10110010	221	DD	11011101
136	88	10001000	179	B3	10110011	222	DE	11011110
137	89	10001001	180	B4	10110100	223	DF	11011111
138	8A	10001010	181	B5	10110101	224	E0	11100000
139	8B	10001011	182	B6	10110110	225	E1	11100001
140	8C	10001100	183	B7	10110111	226	E2	11100010
141	8D	10001101	184	B8	10111000	227	E3	11100011
142	8E	10001110	185	B9	10111001	228	E4	11100100
143	8F	10001111	186	BA	10111010	229	E5	11100101
144	90	10010000	187	BB	10111011	230	E6	11100110
145	91	10010001	188	BC	10111100	231	E7	11100111
146	92	10010010	189	BD	10111101	232	E8	11101000
147	93	10010011	190	BE	10111110	233	E9	11101001
148	94	10010100	191	BF	10111111	234	EA	11101010
149	95	10010101	192	C0	11000000	235	EB	11101011
150	96	10010110	193	C1	11000001	236	EC	11101100
151	97	10010111	194	C2	11000010	237	ED	11101101
152	98	10011000	195	C3	11000011	238	EE	11101110
153	99	10011001	196	C4	11000100	239	EF	11101111
154	9A	10011010	197	C5	11000101	240	F0	11110000
155	9B	10011011	198	C6	11000110	241	F1	11110001
156	9C	10011100	199	C7	11000111	242	F2	11110010
157	9D	10011101	200	C8	11001000	243	F3	11110011
158	9E	10011110	201	C9	11001001	244	F4	11110100
159	9F	10011111	202	CA	11001010	245	F5	11110101
160	A0	10100000	203	CB	11001011	246	F6	11110110
161	A1	10100001	204	CC	11001100	247	F7	11110111
162	A2	10100010	205	CD	11001101	248	F8	11111000
163	A3	10100011	206	CE	11001110	249	F9	11111001
164	A4	10100100	207	CF	11001111	250	FA	11111010
165	A5	10100101	208	D0	11010000	251	FB	11111011
166	A6	10100110	209	D1	11010001	252	FC	11111100
167	A7	10100111	210	D2	11010010	253	FD	11111101
168	A8	10101000	211	D3	11010011	254	FE	11111110
169	A9	10101001	212	D4	11010100	255	FF	11111111
170	AA	10101010	213	D5	11010101			

Reference:
http://www.cisco.com/en/US/products/hw/switches/ps2246/products_programming_reference_guide_chapter09186a00800c33e4.html

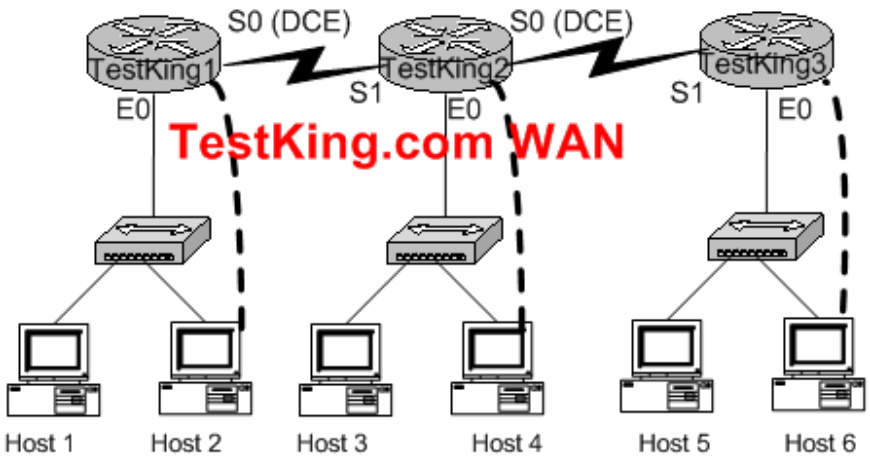
QUESTION NO: 67
A group of bakeries wants to provide network connectivity for 3 factories in the group. Each factory is to have one LAN. The TestKing1 and TestKing2 routers are completely configured. The TestKing3 router has been configured except the routing protocol. Configure the routing protocol to allow a host on the LAN of the TestKing3 router to communicate with a host on the TestKing2 router. The routers have been configured with the following specifications:

- **The routers are named TestKing1, TestKing2, and TestKing3.**
- **RIP is the routing protocol**
- **The clocking is provided on the serial 0 interfaces.**
- **The secret password on the TestKing3 router is "testking"**
- **The subnet masks on all interfaces is the default mask.**
- **The IP addresses are listed in the chart**

TestKing1
E0 192.168.149.1
S0 192.168.179.1

TestKing2
E0 192.164.155.1
S0 192.168.111.1
S1 192.168.179.2

TestKing3
E0 192.168.165.1
S1 192.111.2



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

Answer:
TestKing3>**enable**
Password:
TestKing3#**config t**
Testking3(config)#**router rip**
Testking3(config-router)#**network 192.168.165.0**
Testking3(config-router)#**network 192.168.111.0**

```
Testking3(config)# Ctrl-Z
**Output omitted**
TestKing3#copy running-config startup-config
**Output omitted**

[OK]
TestKing3#_
```

QUESTION NO: 68
Which of the following statements are characteristic of a typical VLAN arrangement? (Choose three)

A. VLANs logically divide a switch into multiple, independent switches at Layer 2.
B. A VLAN can span multiple switches.
C. VLANs typically decrease the number of broadcast domains.
D. Trunk links can carry traffic for multiple VLANs.
E. VLAN implementation significantly increases traffic on a network because trunking information must be added to each packet.
F. VLANs extend the collision domain to include multiple switches.

Answer: A, B, E

QUESTION NO: 69
Which of the following options can be negotiated using LCP during the PPP link establishment? (Choose three)

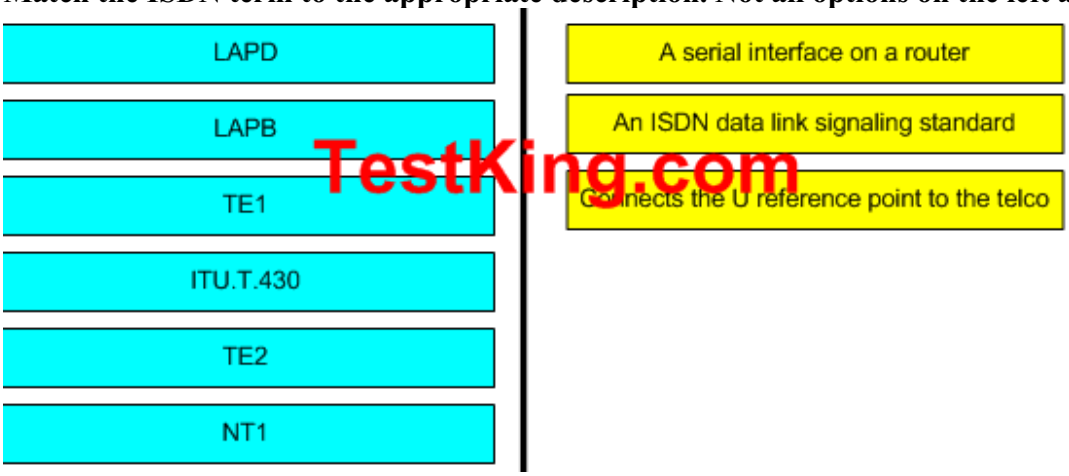
A. callback
B. IPCP
C. CHAP
D. multilink
E. TCP
F. Q.931

Answer: B C D
Explanation:

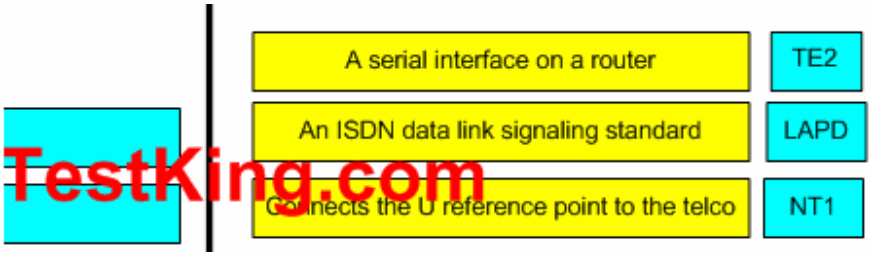
- The NCP phase is used for establishing and configuring different network-layer protocols.
- The most common layer 3 protocol negotiated is IP. The routers exchange IP Control Protocol (IPCP) messages negotiating options specific to the protocol.
- Point-to-Point Protocol (PPP) currently supports two authentication protocols: Password Authentication Protocol (PAP) and Challenge Handshake Authentication Protocol (CHAP). Both are specified in RFC 1334 and are supported on synchronous and asynchronous interfaces.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 310+311

QUESTION NO: 70
Match the ISDN term to the appropriate description. Not all options on the left apply.



Answer:

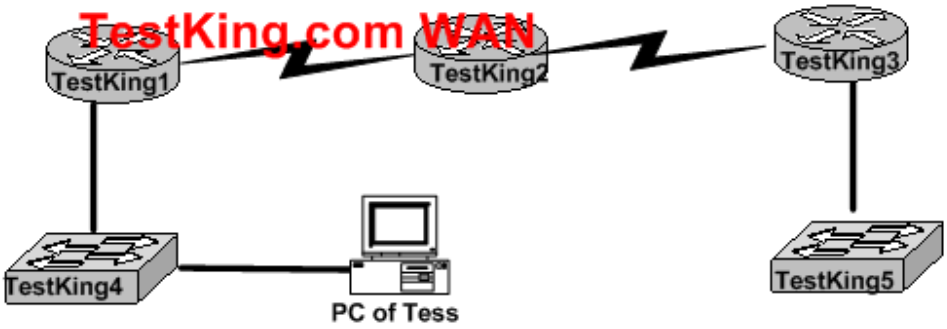


Explanation:

- **LAPD –** provides the data link protocol that allows delivery of messages across that D-channel to the local switch.
- **LAPB -** Protocol and is designed primarily to satisfy the signaling requirements of ISDN basic access. It is defined by ITU-T Recommendations Q.920 and Q.921.
- **TE1 – ISDN –**capable four-wire cable. Understands signaling and 2B=D. Uses an S reference point.
- **ITU.T.430 –** Defines connectors, encoding, framing, and reference points.
- **TE2 –** Equipment that does not understand ISDN protocols and specifications (no ISDN awareness). Uses an R reference point, typically an RS-232 or V.35 cable, to connect to a TA.
- **NT1 –** CPE equipment in North America. Connects with a U reference point (two-wire) to the telco.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page Chapter 10

QUESTION NO: 71
Exhibit:



An employee Tess of TestKing company has moved to an office on a different floor. Although the administrator is able to telnet to all of the routers, the address of Switch TestKing5 is needed in order to verify that Tess remains in the same VLAN.
Which action could be used by the administrator to find the IP address of TestKing5?

A. Issue the **show ip route** command on Router TestKing1.
B. Issue the **show ip route** command on Router TestKing3.
C. Issue the **show cdp neighbors** command on Router TestKing2.
D. Issue the **show cdp neighbors detail** command on Router TestKing3.
E. Issue the **show arp** command on Router TestKing1.
F. Issue the **show arp** command on Router TestKing2.

Answer: D
Explanation:
To display detailed information about neighboring devices discovered using Cisco Discovery Protocol (CDP), use the **show cdp neighbors** privileged EXEC command.

Detail - (Optional) Displays detailed information about a neighbor (or neighbors) including network address, enabled protocols, hold time, and software version.

Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1831/products_command_reference_chapter09186a00800d983f.html#1019534

QUESTION NO: 72
Exhibit:

Which of the following commands can be used to configure the address on the TestKing2 serial interface?

A. TESTKING2(config-if)# **ip address 172.16.17.1 255.255.255.0**
B. TESTKING2(config-if)# **ip address 172.16.18.2 255 255.255.252.0**
C. TESTKING2(config-if)# **ip address 172.16.17.2 255.255.255.252**
D. TESTKING2(config-if)# **ip address 172.16.16.0 255.255.255.0**

Answer: B
Explanation: The subnet mask must be 255.255.252.0 to work with the network address 172.16.17.0 / 22 on the S0/0 interface on TestKing1.

QUESTION NO: 73

```
TestKing1# Show running-config

<some output text omitted>

interface serial0/0
 ip address 10.0.1.1 255.255.255.0
 encapsulation frame-relay
!
router igrp 1
network 10.0.0.0

TestKing2# show running-config

<some output text omitted>

interface fastethernet0/0
 ip address 10.10.1.2 255.255.255.0

interface serial0/0
 ip address 10.0.1.1 255.255.255.0
 encapsulation frame-relay
!
router igrp 2
network 10.0.0.0
```

Users on the TestKing2 site Ethernet are unable to access the TestKing1 site network. After reviewing the command output, what is the most likely cause of the problem?

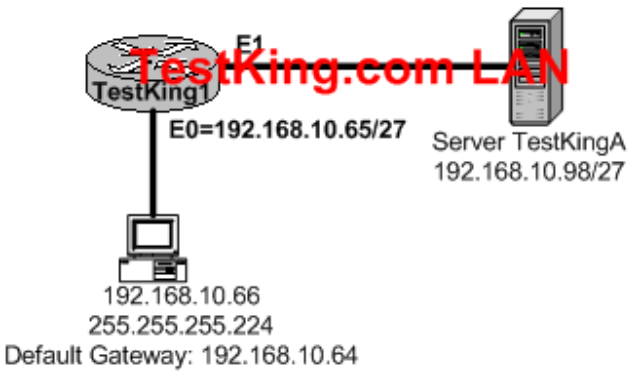
A. Incorrect IP addressing
B. Frame relay is incorrectly configured.
C. IGRP is incorrectly configured.
D. Link state routing protocol is needed.

Answer: C
Explanation:
router igrp
To configure the Interior Gateway Routing Protocol (IGRP) routing process, use the **router igrp** global configuration command. To shut down an IGRP routing process, use the **no** form of this command.
router igrp *autonomous-system*

autonomous-system- Autonomous system number that identifies the routes to the other IGRP routers. It is also used to tag the routing information.

Reference:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1828/products_command_summary_chapter09186a00800f0ab0.html#3674

QUESTION NO: 74
Exhibit:



Company TestKing has just added an employee workstation to its network. The employee is unable to connect to the server TestKingA at IP address 192.168.10.98/27. Identify the incorrectly configured network parameter in the workstation configuration.

A. Workstation IP address

B. Workstation subnet mask
C. Workstation default gateway
D. IP address of the Ethernet 0 router interface

Answer: C

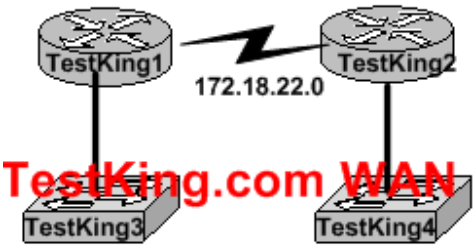
QUESTION NO: 75
Your TestKing trainee Bob asks you what 11111000 binary is in decimal. What should you tell him?

A. 5
B. 192
C. 224
D. 240
E. 248

Answer: E
Explanation:
128 + 64+32+16+8 = 248

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 559

QUESTION NO: 76
Exhibit:




```
TestKing1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is 172.19.22.2 to network 0.0.0.0

C    172.17.22.0 is directly connected, FastEthernet0/0
C    172.18.22.0 is directly connected, Serial0/0
S*   0.0.0.0/0 [1/0] via 172.19.22.2
```

Users on the 172.17.22.0 network cannot reach the server located on the 172.31.5.0 network. The network administrator connected to router TestKing1 via the console port, issued the show ip route command, and was able to ping the server. Based on the output of the show ip route command and the topology shown in the graphic, what is the cause of the failure?

A. The network has not fully converged.
B. IP routing is not enabled.
C. A static route is configured incorrectly.
D. The FastEthernet interface on TestKing1 is disabled.
E. The neighbor relationship table is not correctly updated.
F. The routing table on TestKing1 has not updated.

Answer: C

QUESTION NO: 77
Exhibit:

Refer to the displayed graphic. TestKing2 and TestKing3 are configured for RIPv1 and have complete connectivity. TestKing1 is added to the network.
What is the most appropriate TestKing1 configuration for full connectivity?

A. TestKing1(config)# **router rip**
TestKing1(config-router)# **network 10.0.0.0**
TestKing1(config-router)# **network 172.16.0.0**
TestKing1(config-router)# **network 192.168.1.0**
B. TestKing1(config)# **router rip**
TestKing1(config-router)# **network 10.0.0.0**
C. TestKing1(config)# **router rip**
TestKing1(config-router)# **network 10.0.0.0**
TestKing1(config-router)# **network 172.16.0.0**
D. TestKing1(config)# **router rip**
TestKing1(config-router)# **network 10.0.0.0**
TestKing1(config-router)# **network 192.168.1.0**

Answer: C
Explanation: When configuring RIP you configure DIRECTLY CONNECTED NETWORKS TO THE ROUTER.

Not A: A insinuates when configuring rip on a router every possible network should be configured in the interface. This is not the case.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) page 167

QUESTION NO: 78
You are working as network administrator/technician at TestKing Inc.
While troubleshooting a network connectivity problem, you observe steady link lights on both the workstation NIC and the switch port to which the workstation is connected. However, when the ping command is issued from the workstation, the output message "Request timed out" is displayed.
At which layer of the OSI model does the problem most likely exist?

A. The session layer
B. The protocol layer
C. The data link layer
D. The access layer
E. The network layer
F. The application layer

Answer: E
Explanation:
TCP/IP includes ICMP, a protocol designed to help manage and control the operation of a TCP/IP network. The ICMP protocol provides a wide variety of information about a network's health and operational status. Control message is the most descriptive part of a name. ICMP helps control and manage IP's work and therefore is considered part of TCP/IP's network layer.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) page 277

QUESTION NO: 79
Exhibit:

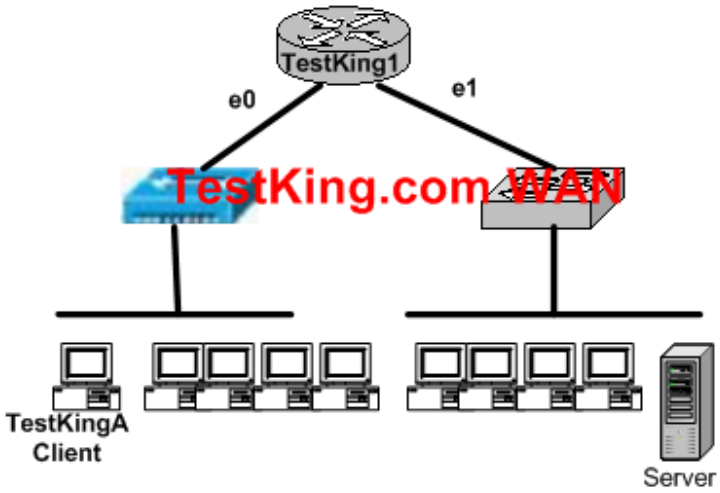
Your boss Dr King studies the network diagram shown in the exhibit. She asks you which function the Frame Relay DLCI provides with respect to TestKing1. What should you tell her?

A. Defines the signaling standard between TestKing1 and the frame switch.
B. Identifies the circuit between TestKing1 and the frame switch.
C. Identifies the circuit between TestKing2 and the frame switch.
D. Identifies the encapsulation used between TestKing1 and TestKing2.
E. Defines the signaling standard between TestKing2 and the frame switch.

Answer: C
Explanation:
TestKing1 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 TestKing2. The TestKing2's local switch forwards the frame out of the access link to TestKing2.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) Page 386

QUESTION NO: 80
Exhibit:



Refer to the graphic. TestKingA is communicating with the server.
What will be the source MAC address of the frames received by TestKingA from the server?

A. The MAC address of router interface e0.
B. The MAC address of router interface e1.
C. The MAC address of the server network interface.
D. The MAC address of TestKingA.

Answer: A

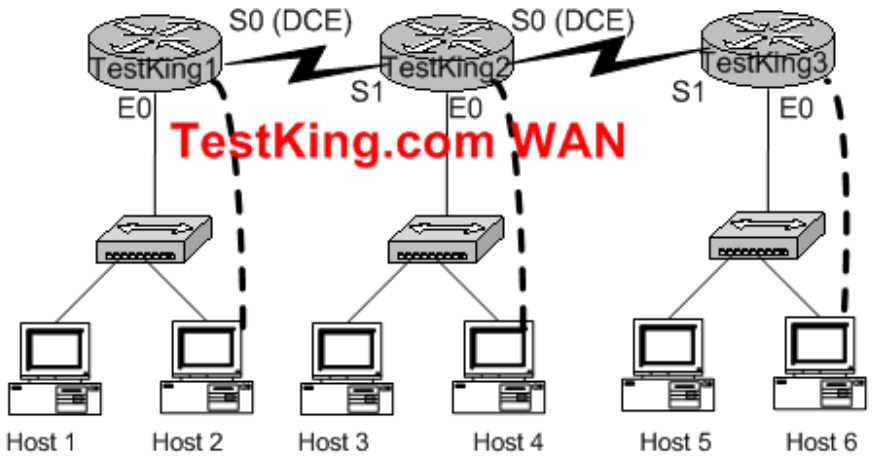
QUESTION NO: 81
You work as network administrator at TestKing Ltd. TestKing has three different sites with one router at each site. The routers are named TestKing1, TestKing2, and TestKing3. A non-certified technician has configured all the routers, but no connectivity exists between the routers. You task is to identify all error(s) and make the necessary adjustment(s) to establish network connectivity.
The routers have been configured with the following configuration:

- **They are named TestKing1, TestKing2, and TestKing3.**
- **RIP is the routing protocol**
- **Clocking is provided on the serial 0 interface.**
- **The password on each router is "testking"**
- **The subnet mask on all interfaces is the default subnet mask.**
- **The IP addresses are listed in the chart below.**

TestKing1
E0 192.168.3.1
S0 192.168.5.1

TestKing2
E0 192.168.8.1
S0 192.168.11.1
S1 192.168.5.2

TestKing3
E0 192.168.13.2
S1 192.168.11.2



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

Answer:
Explanation:

Click on Host 2:

Router TestKing1:

TestKing1> **enable**
Password: **testking**
TestKing1 # **config terminal**
TestKing1 (config) # **interface ethernet 0**
TestKing1 (config-if) # **ip address 192.168.3.1 255.255.255.0**
TestKing1 (config-if) # **no shutdown**
TestKing1 (config-if) # **exit**
TestKing1 (config) # **interface serial 0**
TestKing1 (config-if) # **ip address 192.168.5.1 255.255.255.0**
TestKing1 (config-if) # **clock rate 64000**
TestKing1 (config-if) # **no shutdown**
TestKing1 (config-if) # **exit**
TestKing1 (config) # **router rip**
TestKing1 (config-router) # **network 192.168.3.0**
TestKing1 (config-router) # **network 192.168.5.0**
TestKing1 (config-router) # **Ctrl-Z**
TestKing1 # **copy running-config startup-config**

Click on Host 4

Router TestKing2:

TestKing2> **enable**
Password: **testking**
TestKing2 # **config t**
TestKing2 (config) # **interface ethernet 0**
TestKing2 (config-if) # **ip address 192.168.8.1 255.255.255.0**
TestKing2 (config-if) # **no shutdown**
TestKing2 (config-if) # **exit**
TestKing2 (config) # **interface serial 0**
TestKing2 (config-if) # **ip address 192.168.11.1 255.255.255.0**
TestKing2 (config-if) # **clock rate 64000**
TestKing2 (config-if) # **no shutdown**
TestKing2 (config-if) # **exit**
TestKing2 (config) # **interface serial 1**
TestKing2 (config-if) **# ip address 192.168.5.2 255.255.255.0**
TestKing2 (config-if) # **no shutdown**
TestKing2 (config-if) # **exit**
TestKing2 (config) # **router rip**
TestKing2 (config-router) # **network 192.168.8.0**
TestKing2 (config-router) # **network 192.168.11.0**
TestKing2 (config-router) # **network 192.168.5.0**
TestKing2 (config-router) # **Ctrl-Z**
TestKing2 # **copy running-config startup-config**

Router TestKing3:

Click on Host F

TestKing3> **enable**
Password: **testking**
TestKing3 # **config t**
TestKing3 (config) # **interface ethernet 0**
TestKing3 (config-if) # **ip address 192.168.13.2 255.255.255.0**
TestKing3 (config-if) # **no shutdown**
TestKing3 (config-if) # **exit**
TestKing3 (config) # **interface serial 1**
TestKing3 (config-if) # **ip address 192.168.11.2 255.255.255.0**
TestKing3 (config-if) # **no shutdown**
TestKing3 (config-if) # **exit**
TestKing3 (config) # **router rip**
TestKing3 (config-router) # **network 192.168.13.0**
TestKing3 (config-router) # **network 192.168.11.0**
TestKing3 (config-router) # **Ctrl-Z**
TestKing3 # **copy running-config startup-config**

QUESTION NO: 82
An OSPF interface has been configured with the bandwidth 64 command.
What will be the calculated OSPF cost of this link?

A. 1
B. 10
C. 1562
D. 64000
E. 128000

Answer: C
cost = 10^8 / bandwidth in bps
= 1562

QUESTION NO: 83
What is the purpose of DLCIs in Frame Relay?

A. The determine the Frame Relay encapsulation type.
B. They identify the logical circuit between a local router and a Frame Relay WAN switch.
C. They represent the keepalives used to maintain the PVC in an active state.
D. They represent the physical address of the router attached to a Frame Relay network.

Answer: B
Explanation:
Routers use the data-link connection identifier (DLCI) as the Frame Replay address, which identifies the VC over which the frame should travel.

Reference:
CCNA Self-Study CCNA ICND exam certification Guide (Ciscopress, ISBN 1-58720-083-X) page 377

QUESTION NO: 84
Which statements is true regarding the command sequence shown below? (Choose three)

RouterA(config)# **interface loopback 0**
RouterA(config-if)# **ip address 192.168.31.33 255.255.255.255**

A. It creates a virtual, software only, interface.
B. It uses a wildcard mask of 255.255.255.255.
C. It ensures that an interface is always active for OSPF processes.
D. It provides a way to test the convergence of OSPF routing updates.
E. The mask of 255.255.255.255 is called a host mask.
F. These commands can only be issued to configure serial interfaces.

Answer: A, B, D

QUESTION NO: 85
TestKing wants to implement 1000mbps Ethernet. Which IEEE standards apply in this scenario? (chose 2)?

A. 802.3ae
B. 802.3u
C. 802.3z
D. 802.3i
E. 802.3ab
F. 802.3e

Answer: C. E
IEEE 802.3z 1000BASE-SX.
The 1000BaseT standard was released in June 1999, defined by **IEEE 802.3ab**.
Incorrect Answer:
On June 17, 2002 the **IEEE 802.3ae** specification for **10 Gigabit Ethernet** was approved as an IEEE standard by the IEEE Standards Association (IEEE-SA) Standards Board.
IEEE 802.3u 100BASE-TX

QUESTION NO: 86
Which statement describes the routing protocol OSPF(Choose 3)?

A. it supports VLSM
B. it is used to router between Autonomous System.
C. It confines network instability to one area of network.
D. It increases routing overhead over the network
E. It allows extensive control of the routing update
F. It is simpler to configure than RIPv2

Answer: A, C, E

QUESTION NO: 87
Error detection schemes use which field of frame to detect error?

A. .MTU
B. MAC
C. FCS
D. PDU
E. ERR
F. Flag

Answer: C
Explanation: The FCS is used for error checking.
Reference: Todd Lammle's 4th edition study guide, Chapter 5 ip routing pages.

QUESTION NO: 88
Your TestKing trainee Tess asks you to list options for Frame LMI types. (Choose three)

A. IETF
B. Q.931
C. Q933a
D. IEEE
E. Cisco
F. ANSI

Answer: C, E, F

QUESTION NO: 89
Given a subnet mask of 255.255.255.224, which of the following addresses can be assigned to network hosts? (Choose three)

A. 15.234.118.63
B. 82.11.178.93
C. 134.178.18.56
D. 192.168.16.87
E. 201.45.116.159

F. 217.63.12.192

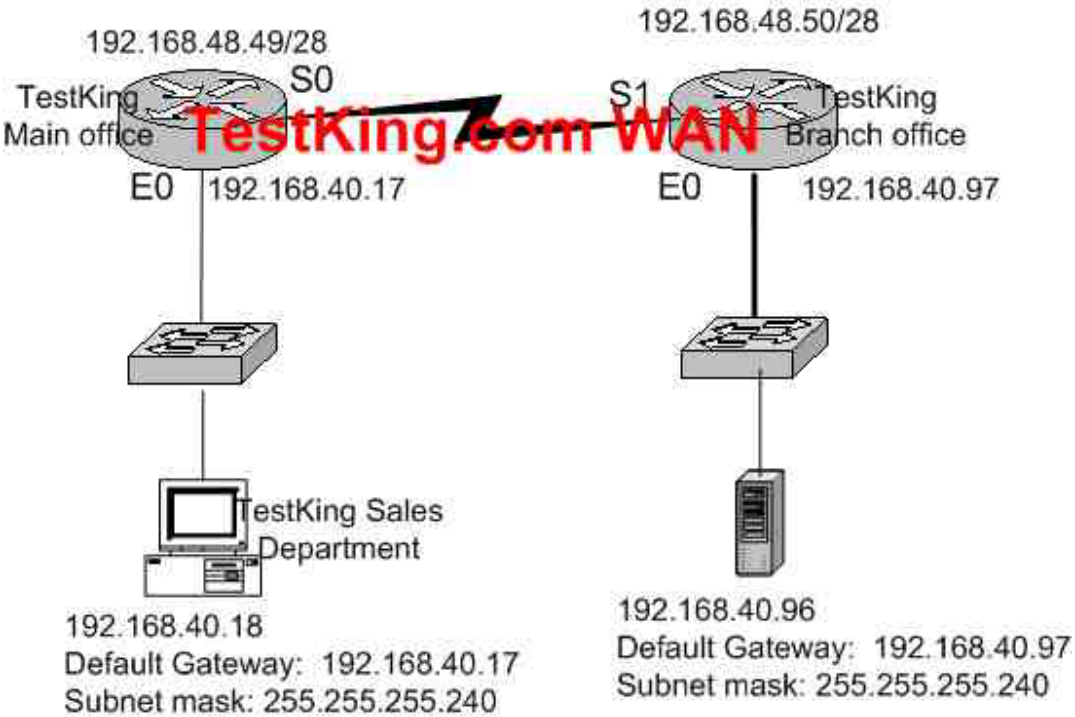
Answer: B, C, D

QUESTION NO: 90
Which command will provide you with information regarding the Layer 3 configuration of directly connected router interfaces?

A. **show ip interface**
B. **show cdp neighbors**
C. **show cdp neighbors detail**
D. **show ip route**
E. **show ip link status**
F. **telnet**

Answer: C

QUESTION NO: 91
Exhibit:



You work as a network administrator at TestKing Inc. Hosts in the TestKing sales department are unable to access a new server at the Branch Office. Consider the IP addressing scheme in the accompanying graphic to determine the problem.

A. The default gateway of the workstations in the sales department is incorrect.
B. The subnet mask of the workstations in the sales department is incorrect.
C. The default gateway of the server at the Branch Office is incorrect.
D. The host address of the server at the Branch Office is invalid.
E. The serial 0 interface on the Main Office router and the serial 1 interface on the Branch Office router are not on the same subnetwork.

Answer: D

Explanation: The host address is incorrectly a network address.

Incorrect Answers:
A. The default gateway in the sales department is correct.
B. The subnet mask is correct.
C. The default gateway in the branch office is correct.
E. This is no problem here.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233 – 234.

QUESTION NO: 92
You have a Class B network address with a subnet mask of 255.255.255.0.
Which of the following statements are true regarding the resulting network? (Choose two)

A. There are 254 usable hosts per subnet.
B. There is one usable network.
C. There are 255 usable hosts per subnet.
D. There are 254 usable subnets.
E. There are 30 usable subnets.
F. There are 64 usable hosts per subnet.

Answer: A, D

QUESTION NO: 93
When setting up Frame Relay for point-to-point subinterfaces, which of the following must not be configured?

A. The Frame Relay encapsulation on the physical interface.
B. The local DLCI on each subinterface.
C. An IP address on the physical interface.
D. The subinterface type as point-to-point.

Answer: C

QUESTION NO: 94
The following access list was applied outbound on the E0 interface connected to the 192.168.1.8/29 LAN:

access-list 123 deny tcp 192.168.1.8 0.0.0.7 eq 20 any
access-list 123 deny tcp 192.168.1.8 0.0.0.7 eq 21 any

What effect will this access list have?

A. All traffic will be allowed to exit E0 except FTP traffic.
B. FTP traffic from 192.168.1.22 to any host will be denied.
C. FTP traffic from 192.168.1.9 to any host will be denied.
D. All traffic exiting E0 will be denied.
E. All FTP traffic to network 192.168.1.9/29 from any host will be denied.

Answer: D

QUESTION NO: 95
Which command is used to display the placement and direction of an IP access control list on a router?

A. **show access-list**
B. **show ip route**
C. **show ip interface**
D. **show interface**
E. **show interface list**
F. **show ip interface brief**

Answer: C

QUESTION NO: 96

Which of the following are characteristics of microsegmentation? (Choose two)

A. Dedicated paths between sending and receiving hosts are established.
B. The number of collision domains is decreased.
C. Broadcast domains are enlarged.
D. Multiple subnetwork broadcast addresses are created.
E. Multiple ARP tables are required on the connected hosts.
F. Bandwidth is dedicated to connect hosts.

Answer: A, F

QUESTION NO: 97
You are the network administrator of the TestKing company and receive a call from a user who is unable to reach a server at a remote site. After further review your discover the following information.
local PC 10.0.3.35/24
default gateway 10.0.3.1
remote server 10.0.5.250/24

You then conduct the following tests from the offending local PC.

ping 127.0.0.1 – unsuccessful
ping 10.0.3.35 – unsuccessful
ping 10.0.3.1 – unsuccessful
ping 10.0.5.250 – unsuccessful

Which of the following problems would create the test results listed above?

A. TCP/IP not correctly installed.
B. Local physical layer problem.
C. Default gateway down.
D. Remote physical layer problem.

Answer: D

QUESTION NO: 98
Your boss at TestKing wants to know why the Spanning-Tree algorithm is used in a switched LAN?

A. To provide a mechanism for network monitoring in switched environments.
B. To prevent routing loops in networks with redundant paths.

C. To prevent switching loops in networks with redundant switched paths.
D. To manage, the addition, deletion, and naming of VLANs across multiple switches.
E. To segment a network into multiple collision domains.

Answer: C

QUESTION NO: 99
You TestKing trainee Tess ask you which parameter must be supplied when initializing the IGRP routing process. What should you tell her?

A. Connected network numbers
B. IP address mask
C. Metric weights
D. Autonomous system number
E. Register administrative id

Answer: D

QUESTION NO: 100
You work as a network technician at TestKing. You need to add a new VLAN, named ACCOUNTS, to your switched network.
Which of the following are true regarding configuration of this VLAN? (Choose three)

A. The VLAN must be created.
B. The VLAN must be named.
C. An IP address must be configured for the ACCOUNTS VLAN.
D. The desired ports must be added to the new VLAN.
E. The VLAN must be added to the STP domain.

Answer: A, B, D

QUESTION NO: 101
Bob, your TestKing trainee, want to segment a network. What devices could he use?
(Choose three)

A. hub

B. repeater
C. switch
D. bridge
E. router
F. media converter

Answer: C, D, E

QUESTION NO: 102
The junior TestKing trainee Ellen asks you to describe what is specific for a global command. What should you tell her?

A. A command that is available in every release of IOS, regardless of the version or deployment status.
B. A command that can be entered in any configuration mode.
C. A command that is universal in application that supports all protocols.
D. A command that is implemented in all foreign and domestic IOS versions.
E. A command that is set once and affects the entire router.

Answer: A
Explanation:
Global command is available an all releases of IOS .In every router one has to define minimum hostname . This will be available in Global config mode in all versions of images.

Reference: Wendell Odom. CISCO CCNA Certification Guide (2000 Press) Page 36

Incorrect Answers
B: It can be entered from usermode or exit from interface mode mainly
C: It is not mandatory to support all protocols
D: Not clear about foreign and Domestic IOS version
E: An interface config may overwrite global config parameter

QUESTION NO: 103
What is the range of binary values for the first octet in Class B addresses?

A. 10000000-11111111
B. 00000000-10111111
C. 10000000-10111111
D. 10000000-11011111
E. 11000000-11101111

Answer: C

QUESTION NO: 104
Which of the following access list statements will deny all telnet connections to subnet 10.0.1.0/24?

A. access-list 15 deny tcp 10.0.1.0 255.255.255.0 eq telnet
B. access-list 115 deny tcp any 10.0.1.0 eq telnet
C. access-list 115 deny udp any 10.0.10 eq 23
D. access-list 115 deny tcp any 10.0.1.0 0.0.0.255 eq 23
E. access-list 15 deny telnet any 10.0.1.0 0.0.0.255 eq 23

Answer: D

QUESTION NO: 105
Your boss at TestKing wants to know why the Spanning-Tree algorithm is used in a switched LAN?

A. To provide a mechanism for network monitoring in switched environments.
B. To prevent routing loops in networks with redundant paths.
C. To prevent switching loops in networks with redundant switched paths.
D. To manage, the addition, deletion, and naming of VLANs across multiple switches.
E. To segment a network into multiple collision domains.

Answer: C

QUESTION NO: 106
Which wireless data command type has a high data rate but is limited to very short distances?

A. narrowband
B. spread spectrum
C. infrared
D. broadband personal comm. Service (PCS)

Answer: C

QUESTION NO: 107
Which protocol admin overhead in a switch network by allowing the configuring of a new VLAN to be distributed to all the switches in a domain?

A. STP
B. VTP
C. GVRP
D. SNMP
E. DHCP

Answer: B
Explanation :
Sybex CCNA Study Guide 4th Edition (Page 359)
" The basic goals of VLAN Trunking Protocol (VTP) are to manage all configured VLANs across a switched internetwork and to maintain consistency throughout that network. VTP allows an administrator to add, delete, and rename VLANs—information that is then propagated to all other switches in the VTP domain."

QUESTION NO: 108
Which of the following are types of crosstalk? (Select all that apply)

A. near-end crosstalk(NEXT)
B. jitter crosstalk(JEXT)
C. far end crosstalk(FEXT)
D. middle closed-end crosstalk(MCEXT)
E. power sum near-end crosstalk(PSNEXT)

Answer: A, C, E
Explanation: Near End Crosstalk (NEXT) is crosstalk measured at the transmitting end of the cable. Far End Crosstalk (FEXT) is measured at the far end from where the signal was injected into the cable.
Power Sum NEXT (PSNEXT) is basically a mathematical calculation that simulates all four pairs being energized at the same time. PSNEXT calculations are used to ensure that a cable will not exceed crosstalk noise performance requirements when all pairs are operating simultaneously. PSNEXT is typically used in Gigabit Ethernet, rather than 10BaseT or 100BaseT.

Reference: Sybex CCNA 4.0 - P. 30

QUESTION NO: 109
Which of the following are VLAN frame encapsulation types that may be configured on a catalyst switch? (Choose 2)

A. VTP
B. ISL
C. CDP
D. 802.1Q
E. LLC

Answer: B, D
ISL and 802.1Q are the two trunking encapsulations.

QUESTION NO: 110
What command will configure an interface on a Catalyst 2900 series switch to carry traffic from all VLANs to another directly connected switch? (Choose two)

A. Switch(config-if)# **vlan all**
B. Switch(config-if)# **switchport access clan 30**
C. Switch(config-if)# **switchport access vlan all**
D. Switch(config-if)# **switchport mode trunk**
E. Switch(config-if)# **switchport trunk encapsulation dot1q**

Answer: C, D
The trunk encapsulation for the catalyst 2900 by default is dot1q

QUESTION NO: 111
Why do large OSPF networks use a hierarchical design? (Choose three)

A. To decrease latency by increasing bandwidth
B. To reduce routing overhead
C. To speed up convergence
D. To confine network instability to single areas of the network
E. To reduce the complexity of router configuration
F. To lower costs by replacing routers with distribution layer switches

Answer: B, C, D

QUESTION NO: 112
A network administrator is trying to add a new router into a established OSPF network. The networks attached to the new router do not appear in the routing tables of the other OSPF routers. Given the information in the partial configuration shown below, what configuration error is causing this problem?

Router(config)# **router ospf 1**
Router(config-router)# **network 10.0.0.0 255.0.0.0 area 0**

A. The process id is configured improperly
B. The OSPF area is configured improperly
C. The network wildcard mask is configured improperly
D. The network number is configured improperly
E. The AS is configured improperly
F. The network subnet mask is configured improperly

Answer: E

QUESTION NO: 113
Which commands are required to properly configure a router to run OSPF and to add network 192.168.16.0/24 to OSPF area 0? (Choose two)

A. Router(config)# **router ospf 0**
B. Router(config)# **router ospf 1**
C. Router(config)# **router ospf area 0**
D. Router(config-router)# **network 192.168.16.0 0.0.0.255 0**
E. Router(config-router)# **network 192.168.16.0 0.0.0.255 area 0**
F. Router(config-router)# **network 192.168.0 255.255.255.0 area 0**

Answer: B, E

QUESTION NO: 114
Network broadcast traffic from the Business Department is needlessly reaching the Engineering Department LAN.
What can be done to contain this traffic within the Business Department network while maintaining connectivity with enterprise servers and the Internet? (Choose two)

A. Establish a VTP domain to contain the extraneous traffic
B. Provide greater bandwidth to the Engineering Department LAN
C. Utilize full-duplex Ethernet on the Engineering Department LAN
D. Place the business department on a separate subnet and route between networks
E. Change the switch IP address to an address on the Engineering Department LAN
F. Create separate VLANs and subnets for the two departments and route between the two

Answer: D, F

QUESTION NO: 115
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

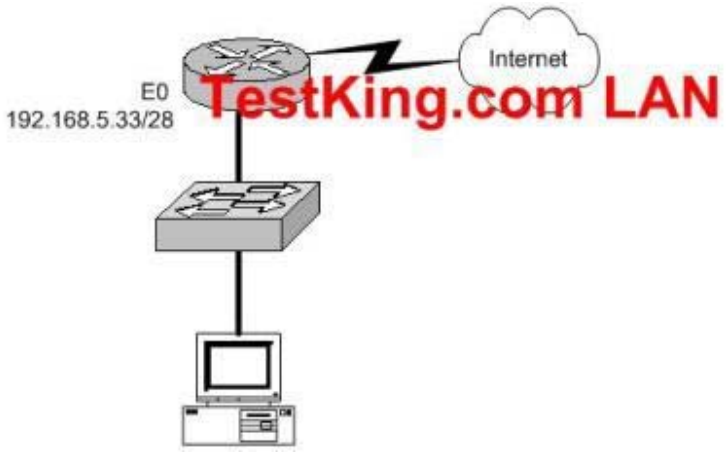
Answer: B, C, E

QUESTION NO: 116
How is spanning-tree path cost determined by default?

A. Total hop count
B. Sum of the costs based on bandwidth
C. Dynamically determined based on load
D. Individual link cost based on latency

Answer: B
Explanation: Sybex CCNA Study Guide 4th Edition (Page 323)
"The STP cost is an accumulated total path cost based on the available bandwidth of each of the links."

QUESTION NO: 117



Refer to the graphic.
What should be the IP address of the host?

A. 192.168.5.14
B. 192.168.5.32
C. 192.168.5.40
D. 192.168.5.47
E. 192.168.5.55

Answer: C

QUESTION NO: 118
Which mode can be used to quickly configure a router for basic operations?

A. RXBOOT mode
B. SETUP mode
C. ROM Monitor mode
D. Autoflash mode

Answer: B

QUESTION NO: 119
Acknowledgements, sequencing, and flow control are characteristics of which OSI layer?

A. Layer 2
B. Layer 3

C. Layer 4
D. Layer 5
E. Layer 6
F. Layer 7

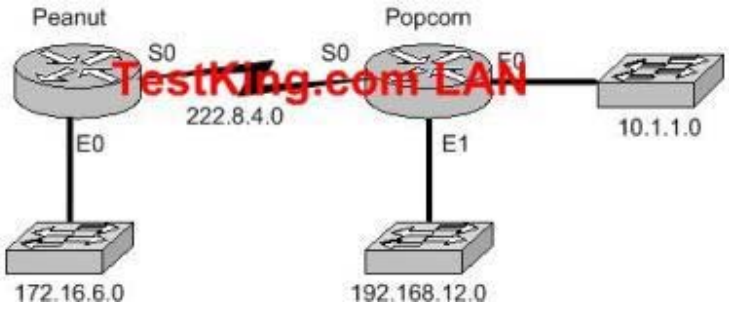
Answer: C

QUESTION NO: 120
On which types of network will OSPF elect a backup designated router?

A. Point-to-point and multiaccess
B. Point-to-multipoint and multiaccess
C. Point-to-point and point-to-multipoint
D. Nonbroadcast and broadcast multipoint
E. Nonbroadcast and broadcast multiaccess

Answer: E
Explanation:
Sybex CCNA Study Guide 4th Edition (Page 283)
" DR and BDR are elected on broadcast and nonbroadcast multi-access networks."

QUESTION NO: 121



Popcorn# show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 13 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is
Incoming update filter list for all interfaces is
Redistribution: rip
Default version control: send version 1, receive any version

Interface Send Recv Triggered RIP Key-chain
Ethernet0 1 12
Ethernet1 1 12
Serial 1 12
Routing for Networks:
222.8.4.0
10.1.1.0
Routing Information Sources:
Gateway Distance Last Update
222.8.4.1 120 00:00:04

An administrator who is consoled into the Peanut router is able to ping the Serial0 and Ethernet0 ports of the Popcorn router but unable to ping its Ethernet1 interface.
Use the graphic and command output to identify possible causes for this problem. (Choose two)

A. The Serial interface of the Popcorn router is shutdown.
B. The Ethernet1 interface of the Popcorn router is shutdown.
C. The Popcorn router did not include network 192.168.12.0 in its routing configuration.
D. The Popcorn router is not forwarding RIP updates.
E. The clockrate is missing from the configuration of one of the routers.

Answer: B, E

QUESTION NO: 122
RtrA#debug ip rip
Rip protocol debugging is on
RtrA#
1d05h: RIP: sending v1 update to 255.255.255.255 via FastEthernet0/0 (172.16.1.1)
1d05h: RIP: build update entries
1d05h: network 10.0.0.0 metric 1
1d05h: network 192.168.1.0 metric 2
1d05h: RIP: sending v1 update to 255.255.255.255 via Serial0/0 (10.0.8.1)
1d05h: RIP: build update entries
1d05h: network 172.16.0.0 metric 1
RtrA#
1d05h: RIP: received v1 update from 10.0.15.2 on Serial0/0
1d05h: 192.168.1.0 in 1 hops
1d05h: 192.168.0 in 16 hops (inaccessible)

Which of the following are true regarding the command output shown in the display? (Choose two)

A. There are at least two routers participating in the RIP process.

B. A ping to 192.168.168.2 will be successful.
C. A ping to 10.0.15.2 will be successful.
D. RtrA has three interfaces participating in the RIP process.

Answer: A, C

QUESTION NO: 123
What is the binary equivalent of the decimal number 231?

A. 11010011
B. 11011011
C. 11100111
D. 11101011
E. 11110011

Answer: C

QUESTION NO: 124
Which type of EIGRP route entry describes a feasible successor?

A. A backup route, stored in the routing table
B. A primary route, stored in the routing table
C. A backup route, stored in the topology table
D. A primary route, stored in the topology table

Answer: C

QUESTION NO: 125
What are the advantages of using full-duplex Ethernet instead of single-duplex? (Choose two)

A. Uses inexpensive hubs
B. Provides faster data transfer
C. Utilizes fewer pairs of wires
D. Operates without collisions
E. Operates on coaxial cable

Answer: B, D

QUESTION NO: 126
While troubleshooting a network problem, a technician discovers that the current copy of the Cisco IOS is outdated and needs to be updated.
Which of the following commands would the technician issue to replace the Cisco router IOS with the newer version?

A. Router# **copy tftp flash**
B. Router(config)# **restore flash**
C. Router(config)# **repair flash**
D. Router# **copy flash run**
E. Router> **copy start flash**
F. Router# **copy start flash**

Answer: A

QUESTION NO: 127
Which of the following is a Layer 2 protocol used to maintain a loop-free network?

A. VTP
B. STP
C. RIP
D. CDP

Answer: B

QUESTION NO: 128
Which WAN protocol is used for out-of-band signaling?

A. NCP
B. HDLC
C. LAPB
D. LAPD

Answer: D

QUESTION NO: 129
A Cisco router and a router from another manufacturer are directly connected via a serial link. Which command can be used on the Cisco router to form a WAN connection between the routers?

A. Lab(config-if)# **encapsulation hdlc ansi**
B. Lab(config-if)# **encapsulation ppp**
C. Lab(config-if)# **encapsulation frame-relay default**
D. Lab(config-if)# **encapsulation isdn**

Answer: B

QUESTION NO: 130
Which address represents a unicast address?

A. 224.1.5.2
B. FFFF.FFFF.FFFF
C. 192.168.24.59/30
D. 255.255.255.255
E. 172.31.128.255./18

Answer: C

QUESTION NO: 131
Which characteristics describe the routing protocol EIGRP? (Choose two)

A. Has a maximum hop count of 255
B. Uses a 32-bit metric
C. Can differentiate between internal and external routes
D. Supports a single routed protocol
E. Can maintain only a single routing table
F. Required all networks within an AS to use the same subnet mask

Answer: B, C

QUESTION NO: 132
What type of packets do routers running OSPF send to maintain connectivity with neighboring routers?

A. dead interval packets
B. hello packets
C. LSU packets
D. OSP packets
E. keepalive packets

Answer: B

QUESTION NO: 133
What information does a router running a link-state protocol use to build and maintain its topological database? (Choose two)

A. hello packets
B. SAP messages sent by other routers
C. LSAs from other routers
D. Beacons received on point-to-point links
E. Routing tables received from other link-state routers
F. TTL packets from designated routers

Answer: A, C

QUESTION NO: 134
Which form of NAT maps multiple private IP addresses to a single registered IP address by using different ports?

A. static NAT
B. dynamic NAT
C. overloading
D. overlapping
E. port loading

Answer: C

QUESTION NO: 135
A catalyst switch must be in which VTP mode in order to delete and add VLANs to a management domain?

A. Client
B. Server
C. Domains
D. Transparent
E. Designated.

Answer: B

Explanation:

VTP Modes

If you intend to make a switch part of a VTP management domain, each switch must be configured in one of three possible VTP modes. The VTP mode assigned to a switch will determine how the switch interacts with other VTP switches in the management domain. The three VTP modes that can be assigned to a Cisco switch include server mode, client mode, and transparent mode. Each of these roles is outlined below:

- **Server Mode** Once VTP is configured on a Cisco switch, the default mode used is Server Mode. In any given VTP management domain, at least one switch must be in Server Mode. When in Server Mode, a switch can be used to add, delete, and modify VLANs, and this information will be passed to all other switches in the VTP management domain.
- **Client Mode** When a switch is configured to use VTP Client Mode, it is simply the recipient of any VLANs added, deleted, or modified by a switch in Server Mode within the same management domain. A switch in VTP client mode cannot make any changes to VLAN information.
- **Transparent Mode** A switch in VTP Transparent Mode will pass VTP updates received by switches in Server Mode to other switches in the VTP management domain, but will not actually process the contents of these messages. When individual VLANs are added, deleted, or modified on a switch running in transparent mode, the changes are local to that particular switch only, and are not passed to other switches in the VTP management domain.

Based on the roles of each VTP mode, the use of each should be more or less obvious. For example, if you had 15 Cisco switches on your network, you could configure each of them to be in the same VTP management domain. Although each could theoretically be left in the default Server Mode, it would probably be easier to leave only one switch in this configuration, and then configure all remaining switches for VTP Client Mode. Then, when you need to add, delete, or modify a VLAN, that change can be carried out on the VTP Server Mode switch and passed to all Client Mode switches automatically. In cases where you need a switch to act in a relatively standalone manner, or dont want it to propagate information about its configured VLANs, use Transparent Mode.

Define flow control and describe the three basic methods used in networking.

Flow control is a function that prevents network congestion by ensuring that transmitting devices do not overwhelm receiving devices with data. Flow control is used to ensure data reliability. There are a number of possible causes of network congestion. In basic terms, flow control is used to control the flow of a message from the sender to the receiver by starting and stopping the message transmission as necessary based on the receivers buffer. It is a protocol mechanism that allows the receiver to control the rate at which the sender can transmit data. It makes it possible for a receiver running on a low speed computer to accept data from high speed sender, without being overrun. Usually it is because a high-speed computer generates data faster than the network can transfer it, or faster than the destination device can receive and process it.

There are three commonly used methods for handling network congestion:

- **Buffering**
  Buffering is used by network devices to temporarily store bursts of excess data in memory until they can be processed. Occasional data bursts are easily handled by buffering. However, buffers can overflow if data continues at high speeds

- **Source Quench Messages**
  Source quench messages are used by receiving devices to help prevent their buffers from overflowing. The receiving device sends a source quench message to request that the source reduce its current rate of data transmission.

- **Windowing**
  Windowing is a flow-control method in which the source device requires an acknowledgement from the destination after a certain number of packets have been transmitted.
  1. The source device sends a few packets to the destination device.
  2. After receiving the packets, the destination device sends an acknowledgment to the source.
  3. The source receives the acknowledgment and sends the same amount of packets.
  4. If the destination does not receive one or more of the packets for some reason (such as overflowing buffers), it does not send an acknowledgment. The source will then retransmits the packets at a reduced transmission rate.

  Windowing is reliable because it uses positive acknowledgement which requires the recipient device to communicate with the sending device, sending back an acknowledgement when it receives data. If the sending device does not receive an acknowledgement it knows to retransmit the packets at a reduced transmission rate. If the receiving device sends a packet with a zero window size, it means it's buffers are full and it cannot receive any more data. Transmission is resumed when the receiving device sends a packet with a window size higher than zero.
  TCP at the Transport layer uses Windowing as a method flow control. Two mechanisms used with windowing ensure the delivery of segments with no duplication or data loss. These include Acknowledgements and Negative Acknowledgements and also sequencing and necessary retransmission. All these technologies work together to provide data reliability and optimal performance.

Incorrect Answers:

A: CLIENT mode merely accepts changes made by the switch that is connected and in SERVER mode.

QUESTION NO: 136
Which of the following are types of flow control? (Choose 3)

A. Buffering.
B. Cut-Through.
C. Windowing.
D. Congestion Avoidance.
E. Load Balancing.

Answer: A, C, D
Explanation:

There are three commonly used methods for handling network congestion:

- **Buffering**
  Buffering is used by network devices to temporarily store bursts of excess data in memory until they can be processed. Occasional data bursts are easily handled by buffering. However, buffers can overflow if data continues at high speeds

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  2. After receiving the packets, the destination device sends an acknowledgment to the source.
  3. The source receives the acknowledgment and sends the same amount of packets.
  4. If the destination does not receive one or more of the packets for some reason (such as overflowing buffers), it does not send an acknowledgment. The source will then retransmits the packets at a reduced transmission rate.

QUESTION NO: 137
A training company called TestKing has three production facilities. Two of the facilities have network connectivity to each other. The third facility has recently received a router and is to be connected to the other two. The names of routers are QA, StudyGuide, and Examinator. Configure the Examinator router's IP addresses on the E0 and S1 interfaces so that the E0 resolves the first usable subnet while S1 receives the second usable subnet from the network 192.168.81.0/27. Both interfaces should receive the first available IP of the subnet. The zero subnet should not be used. The routers have been configured with the following specifications:

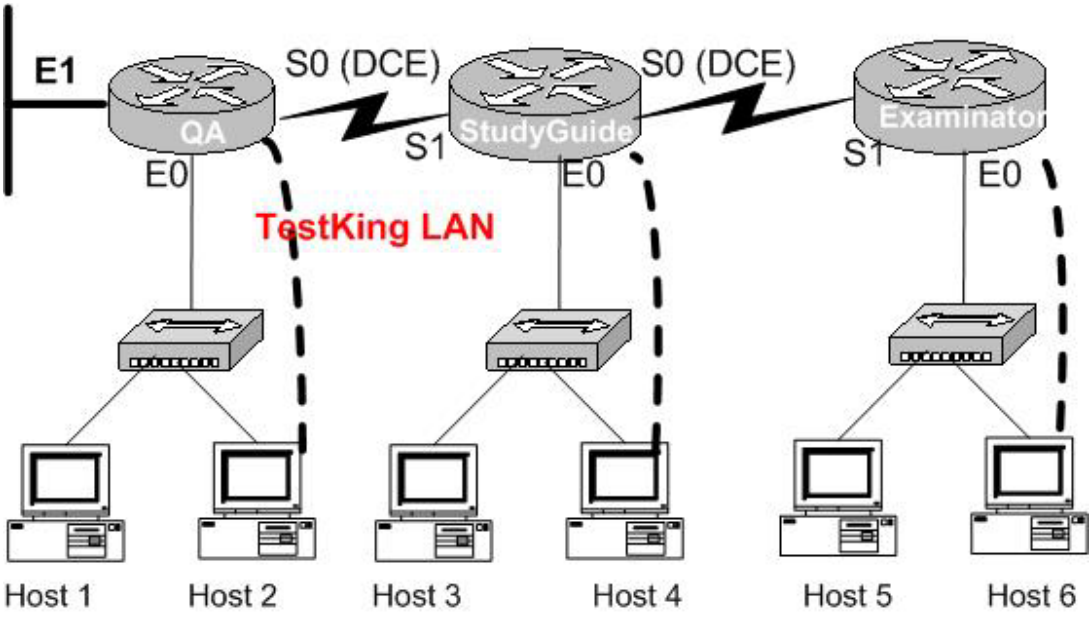
- **The routers are named QA, StudyGuide, and Examinator**
- **RIP is the routing protocol**
- **Clocking is provided on the serial 0 interfaces.**
- **The secret password on the Examinator router is "testking"**

- **The IP address are listed in the chart below.**

Name: QA
E0 : 192.168.83.1
S0 : 192.168.85.1

Name: StudyGuide
E0 : 192.168.88.1
S0 : 192.168.81.89
S1 : 192.168.85.2

Name: Examinator
E0 : to be determined
S1 : to be determined
Secret Password: testking



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

Answer:
Examinator#**config t**
Enter configuration commands, one per line. End with END.
Examinator(config)#**int e 0**
Examinator(config-if)#**ip add 192.168.81.33 255.255.255.224**
Examinator(config-if)#**no shut**
Examinator(config-if)#**exit**
Examinator(config)#**int s 1**
Examinator(config-if)#**ip add 192.168.81.65 255.255.255.224**

Examinator(config-if)#**no shut**
Examinator(config-if)#**CTRL+Z**
Examinator#**copy ru st**
..
..
[OK]
Examinator#

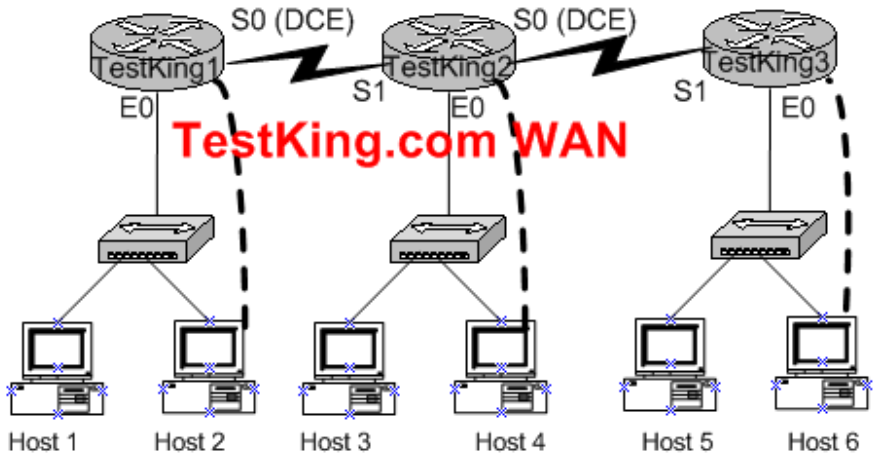
QUESTION NO: 138
Three sites, TestKing1, TestKing2, and TestKing3 are connected via a WAN. At each site a router provides serial connectivity to the Wan and an Ethernet connection to a LAN. All three routers are configured, and the network is functional. Configure and apply an access list will prevent telnet access to the TestKing1 router while allowing all other traffic to pass. The access list should not contain more than three (3) statements and should be applied to the TestKing3 router. The routers have been previously configured with the following specifications:

- **The routers are named TestKing1, TestKing2, and TestKing3.**
- **RIP is the routing protocol.**
- **The clocking signal is provided on the serial 0 interfaces.**
- **All passwords on all routers are "testking".**
- **The subnet mask on all the interfaces is the default mask.**
- **IP addresses are listed in the chart below.**

TestKing1
E0 192.168.1.1
S0 192.168.118.1
Secret password: testking

TestKing2
E0 192.168.121.1
S0 192.168.5.1
S1 192.168.118.2
Secret password: testking

TestKing3
E0 192.168.134.1
S1 192.168.5.2



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

Answer:
TestKing3>**enable**
:password
TestKing3#**show access-lists** (** redundant **)
TestKing3#**config t**
.Enter configuration commands, one per line. End with END
TestKing3(config)#**access-list 101 deny tcp any 192.168.134.1 0.0.0.0 eq 23**
TestKing3(config)#**access-list 101 deny tcp any 192.168.5.2 0.0.0.0 eq 23**
TestKing3(config)#**access-list 101 permit ip any any**
TestKing3(config)#**interface Ethernet 0**
TestKing3(config-if)#**ip access-group 101 in**
TestKing3(config-if)#**exit**
TestKing3(config)#**interface serial 0**
TestKing3(config-if)#**ip access-group 101 in**
TestKing3(config-if)#**<CTRL-Z**
..
TestKing3#**copy running-config startup-config**

Explanation: You should deny access to telnet to the tesking1 router and the access list should be applied in testking3 router (if the wording is correct) this mean that tesking1 and tesking2 they won't be affected that all only testking3 LAN interface of testking3 will be restricted and that access list is not necessary to be applied to the serial 1 interface because to the Ethernet0 in the testking3 will be enough.

Note: Compare to Question 54.

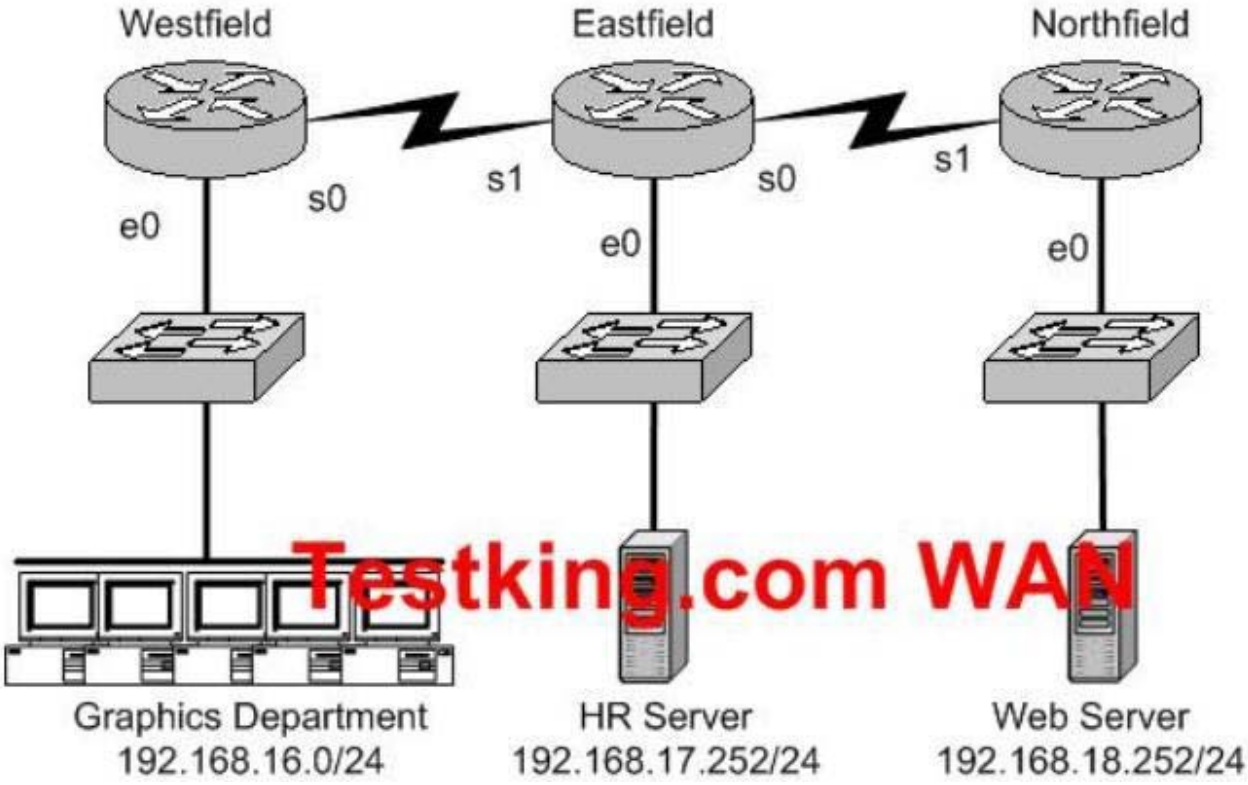
QUESTION NO: 139

On point-to-point networks, OSPF hello packets are addresses to which address?

A. 127.0.0.1
B. 172.16.0.1
C. 192.168.0.5
D. 223.0.0.1
E. 224.0.0.5
F. 254.255.255.255.255

Answer: E

QUESTION NO: 140
Exhibit:



An access list has been designed to prevent Telnet traffic from the Graphics Department from reaching the HR server attached to the Eastfield router.
Which of the following access lists will accomplish this task when grouped with the e0 interface in the inbound direction on the Westfield router?

A. **deny tcp 192.168.16.0 0.0.0.255 192.168.17.252 0.0.0.0 eq 23**
permit ip any any
B. **deny tcp 192.168.18.262 0.0.0.0 192.168.16.0 0.0.0.255 eq 23**
permit ip any any
C. **permit ip any any**
deny tcp 192.168.16.0 0.0.0.255 192.172.252 0.0.0.0 eq 23
D. **permit ip any any**
deny tcp 192.168.17.252 0.0.0.0 192.168.0 0.0.0.255 eq 23

Answer: A
Explanation: The syntax for an access list is the source address first then the destination address. In this case the source address is 192.168.16.0/24 and the destination address 192.168.17.252

QUESTION NO: 141

```
Camden#show running-config

<some output text omitted>

enable password cisco
!
username Central password 0 cisco
!
interface BRI0/0
 ip address 192.168.0.1 255.255.255.0
 encapsulation ppp
  dialer idle-timeout 180
 dialer map ip 192.168.0.2 name Remote 5552000
 dialer-group 1
 isdn switch-type basic-ni
 no fair-queue
 ppp authentication chap
!
ip route 192.168.20.0 255.255.255.0 192.168.0.2
!
router rip
 network 192.168.0.0
!
access-list 129 deny tcp 192.168.0.0 0.0.0 255 host 192.168.20.5 eq www
access-list 128 permit ip any any
dialer-list 1 protocol ip list 128
```

In an effort to minimize traffic, an administrator decided to keep web traffic from causing the ISDN link to come up by denying WWW traffic to the 192.168.20.5 remote server. Two minutes after making changes to the configuration as shown in the graphic, the administrator notices that web traffic is still passing over the link.
What is the most likely cause of the problem?

A. The dialer-group has not been applied to outbound traffic.
B. The access-list is incorrectly configured.
C. Broadcasts are creating "interesting" traffic and keeping the link active.
D. The command **ip access-group 128 out** is missing from the bri0/0 interface.

Answer: B
Explanation:
The access list is incorrectly configured! The extended list for the deny is 129! The other is 128 and the dialer list is referencing the 128 access-list.

QUESTION NO: 142
Given the address 192.168.20.19/28, which of the following are valid host addresses on this subnet? (Choose two)

A. 192.168.20.29
B. 192.168.20.16
C. 192.168.20.17
D. 192.168.20.31
E. 192.168.20.0

Answer: A, C

QUESTION NO: 143
Which fields are common to the TCP and the UDP segments? (Choose two)

A. source address
B. sequence number
C. acknowledgement number
D. options
E. checksum
F. destination port

Answer: E, F

QUESTION NO: 144
Which of the following can cause congestion on an Ethernet network?

A. Implementing VLANs.
B. Adding switches for connectivity to the network.
C. Adding hubs for connectivity to the network.
D. Microsegmenting the network.
E. Increasing the number of collision domains.

Answer: C

QUESTION NO: 145

```
RtrB#show interface serial0/0
Serial0/0 is up, line protocol is up
  Hardware is PowerQUICC Serial
  Internet address is 10.0.15.2/21
  MTU 1500 bytes, BW 128 Kbit, DLY 20000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation PPP, loopback not set
  Keepalive set (10 sec)
  LCP Open
  Closed: IPXCP
  Listen: CCP
  Open: IPCP, CDPCP
  Last input 00:00:00, output 00:00:00, output hang never
  Last clearing of "show interface" counters 00:52:02
  Input queue: 0/75/0/0 (size/max/drops/flushes): total output drops: 0
  Queuing strategy: weighted fair
  Output queue: 0/1000/64/0 (size/max total/threshold/drops)
```

After reviewing the command output, which of the following are operational on the serial link? (Choose two)

A. IPX
B. IP
C. Compression
D. CDP
E. Multilink

Answer: C, E

QUESTION NO: 146
Exhibit:

Refer to the graphic. Users on the Holyoke router are unable to access the intranet server attached to interface E0 of the Chicopee router. Inspection of the routing table of the Holyoke router shows that an entry for the Chicopee E0 network is missing.
Which command will configure the Holyoke router with a path to the intranet server network?

A. Holyoke(config)# **ip host Chicopee 201.73.127.2**
B. Holyoke(config)# **ip host Chicopee 201.73.127.0 255.255.255.0**
C. Holyoke(config)# **ip network 202.18.38.0**
D. Holyoke(config)# **ip network 202.18.18.0 255.255.255.0**
E. Holyoke(config)# **ip route 202.18.18.0 255.255.255.0 201.73.127.2**
F. Holyoke(config)# **ip route 201.73.127.2 266.255.255.0 202.18.18.0**

Answer: F

QUESTION NO: 147

```
Tampa#show spanning-tree

Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
  Bridge Identifier has priority 32768, address 0002.fd29.c505
```

```
   Configured hello time 2, max age 20. forward delay 15
-----------------------------------------------------------------------
Miami#show spanning-tree

Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
 Bridge Identifier has priority 16384, address 0002.fd29.c504
 Configured hello time 2, max age 20, forward delay 15
-----------------------------------------------------------------------
London#show spanning-tree

Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
 Bridge Identifier has priority 8192, address 0002.fd29.c503
 Configured hello time 2, maxage 20, forward delay 15
-----------------------------------------------------------------------
Cairo#show spanning-tree

Spanning tree 1 is executing the IEEE compatible Spanning Tree protocol
 Bridge Identifier has priority 4096, address 0002.fd29.c502
 Configured hello time 2, maxage 20, forward delay 15
```

Given the partial outputs displayed in the graphic, which switch device would be the spanning tree root bridge for a network of only these four devices?

A. Tampa
B. Miami
C. London
D. Cairo

Answer: D
Explanation: Cairo is the correct answer because it got the lower BID
A **root bridge** is chosen based on the results of the BPDU process between the switches. Initially, every switch considers itself the root bridge. When a switch first powers up on the network, it sends out a BPDU with its own BID as the root BID. When the other switches receive the BPDU, they compare the BID to the one they already have stored as the root BID. If the new root BID has a lower value, they replace the saved one. But if the saved root BID is lower, a BPDU is sent to the new switch with this BID as the root BID. When the new switch receives the BPDU, it realizes that it is not the root bridge and replaces the root BID in its table with the one it just received. **The result is that the switch that has the lowest BID is elected by the other switches as the root bridge**
http://computer.howstuffworks.com/lan-switch6.htm

QUESTION NO: 148
A graphics art company located in Miami, Florida noticed that their windows size was changed from 3000 to 4000 during the data transfer stage of a TCP session, what can a sending host do?

A. Transmit 3000 bytes before waiting for an acknowledgement.
B. Transmit 4000 packets before waiting for an acknowledgement.
C. Transmit 4000 bytes before waiting for an acknowledgement.
D. Transmit 4000 segments before waiting for an acknowledgement.
E. Transmit 3000 frames before waiting for an acknowledgement.
F. Transmit 3000 packets before waiting for an acknowledgement.

Answer: C
Explanation: For TCP a window size is in bytes. When a window size increases the sending device can increase transmission to the new size. In this case the new size 4000 bytes.

Incorrect Answers:
A: Prior to the increase in bytes the old window size was 3000 bytes.
B: Window size is bytes not packets.
D: Window size is bytes not segments
E: Window size is bytes not frames.
F: Window size is bytes not packets.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 213-214.

QUESTION NO: 149
You need to issue the command show startup-config from privileged mode. How can you tell you are in privileged mode?

A. >
B. !
C. #
D. :

Answer: C
Explanation: On a router the privileged mode is indicated by a # prompt.

Incorrect Answers:
A: The user mode is indicated by a > prompt.
B and D: These are not valid router prompts.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 69-70.

QUESTION NO: 150
You are unable to connect to the company's local tftp server using the IP address 10.0.0.20 from your personal computer. You would to test your personal computer to make sure the TCP/IP has been corrected installed. Which one of the following actions will allow you to test the protocol stack on your personal computer?

A. Ping 127.0.0.0
B. Ping 203.125.12.1
C. Telnet 127.0.0.1
D. Ping 127.0.0.1
E. Tracert 203.125.12.1

Answer: D
Explanation: Pinging the loopback address is good method to test if the TCP/IP protocol stack is loaded. On clients the loopback address is always 127.0.0.1.

Incorrect Answers:
A. The command ping 127.0.0.0 will not test the local protocol stack.
B. This command will ping that remote host.
C. You cannot telnet to 127.0.0.1.
E. This tracert command will trace the route to 203.125.12.1.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 123 – 124.

QUESTION NO: 151
Users on your network 10.1.0.0/16 are complaining that they cannot access the company's intranet server using the FQDN www.snowball.com. You are able to ping the IP address but you cannot ping www.snowball.com.

What is the likely cause of this problem?

A. TCP/IP failure.
B. DNS failure.
C. FTP failure.
D. SNMP failure.

Answer: B

Explanation: When you combined the fact that user cannot connect to the intranet with its domain but you can ping to it using the IP address, there must be a problem with the DNS. DNS translates names into addresses.

Incorrect Answers:
A: If there was a problem with TCP/IP then you would not have been able to Telnet to web server.
C: A problem with FTP would not cause this problem.
D: A SNMP failure would not cause this problem.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 239-240.

QUESTION NO: 152
Given the network 192.141.27.0/28, identify the valid host addresses. (Choose three.)

A. 192.141.27.33
B. 192.141.27.112
C. 192.141.27.119
D. 192.141.27.126
E. 192.141.27.175
F. 192.141.27.208

Answer: A, C, D
Explanation: When you base your calculations on the network address and the provided subnet mask the valid host addresses are 192.141.27.33, 192.141.27.119, and 192.141.27.126.

Incorrect Answers:
B, E and F: These are not valid host addresses.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233-236.

QUESTION NO: 153
To perform proper and efficient routing what must a router have?

A. Destination application of an incoming packet.
B. Number of other packets in a single flow of data.
C. Destination network address of an incoming packet.
D. Number of routers that know a path to the destination.

Answer: C

Explanation: A router needs the following information to route packets: destination address, information sources, possible routes, best routes and routing information maintenance and verification.

Incorrect Answers:
A: A router does not route based on application.
B: The number of packet has no relevance to routing decisions.
D: The number of routers has no relevance to routing decisions.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 250-251.

Q.154
Exhibit:
I 154.128.16.0 [100/1100] via 30.100.192.4, 00:00: Ethernet 0

Your trainee studies the routing table on your Catalyst 5000 Switch. One specific entry draws the attention of the trainee (see Exhibit). He is curious about the number 1100 and asks you how it is calculated. You need to tell the trainee what is used in the calculation. (Select two.)

A. MTU
B. bandwidth
C. administrative distance
D. hop count
E. metric
F. delay

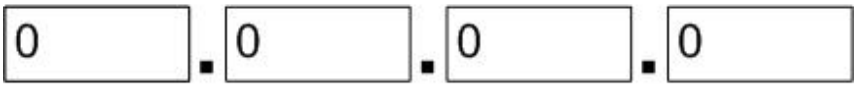
Answer: B, F
Explanation: The I indicates that this is an IGRP learned route. The 1100 is the metric of the route. IGRP calculates the metric by adding together weighted values of different characteristics of the link to the network in question. By default IGRP only use bandwidth and delay. IGRP can be configured to use reliability and bandwidth divided by load as well.

Reference: IGRP Metric
http://www.cisco.com/warp/public/103/3.html

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 283 – 284.

QUESTION NO: 155
The network 131.107.0.0 needs to be divided into subnets where each subnet has the capacity of 458 IP addresses. What would be the correct subnet mask to accomplish this division keeping the number of subnets at the maximum?

Type the correct value in each box below.



Answer:

255 . 255 . 254 . 0

Explanation: In order for a Class B IP, such as 172.12.0.0, to have 458 IP available on each subnet then a subnet mask of 255.255.254.0. This subnet mask provides for 126 subnets and 510 IPs.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 234.

QUESTION NO: 156
To configure a console password you type the following command what would normally follow this command?

routers(config) #line console 0

Which operation is most likely to follow?

A. Configure terminal type.
B. Enter protocol parameters for a serial line.
C. Create a password on the console terminal line.
D. Establish a terminal type 4 connection to a remote host.
E. Change from configuration mode to console privilege mode.

Answer: C
Explanation: If you want to prevent unauthorized people from logging into your router then you should use the line console command. After this you will need to enter a password.

Incorrect Answers:
A: Line console 0 command is for configuring the console password not its type.
B: This command is used for console and not a serial line.
D: This command is not used to establish connection to a remote host.
E: To change from configuration mode to console privilege mode you would use CNTL+Z.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 102-103.

QUESTION NO: 157
For what purpose does Frame Relay use DLCIs?

A. They determine the Frame Relay encapsulation type.
B. They identify the logical circuit between a local router and a Frame Relay WAN switch.
C. The represent the keepalives used to maintain the PVC in an active state.
D. They represent the physical address of the router attached to a Frame Relay network.

Answer: B
Explanation: DLCIs (Data Link Connection Identifiers) are used to identify permanent virtual connections. DLCI is have number values ranging from 0 to 1023. Each PVC will have its own unique DLCI

Incorrect Answers:
A. DLCI does not determine the Frame Relay encapsulation type.
C. DLCI has nothing to do with keepalives.
D. The physical address is represented by the MAC address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 412 – 414.

QUESTION NO: 158
Exhibit:

```
RouterTK#show ip route
Codes: C-connected,s-static,I-IGRP,R-RIP,M-Mobile,B-BGP
       D-EIGRP,EIGRP external, O-OSPF,IA-OSPF inter area,
       EI-OSPF external type 1,E2-OSPF external type 2, E-EGP,
       i-IS-IS,L1-IS-IS level-1,L2-IS-IS level-2,*-candidate default,
       U-per-user static route

Gateway of last resort is not set

R  192.168.8.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
C  192.168.9.0/24 is directly connected, Serial 1
R  192.168.10.0/24 [120/7] via 192.168.9.1, 00:00:02, Serial1
R  192.168.11.0/24 [120/7] via 192.168.9.1, 00:00:03, Serial1
C  192.168.1.0/24 is directly connected, Ethernet0
C  192.168.2.0/24 is directly connected, Serial0
R  192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
R  192.168.4.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R  192.168.5.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R  192.168.6.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0
R  192.168.7.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
```

Based on the output of the show ip route command which route will not be entered into a neighbor RIP router?

A. R 192.168.3.0/24 [120/1] via 192.168.2.2, 00:00:10, Serial0
B. R 192.168.11.0/24 [120/7] via 192.168.9.1, 00:00:03, Serial1
C. C 192.168.1.0/24 is directly connected, Ethernet0
D. R 192.168.5.0/24 [120/15] via 192.168.2.2, 00:00:10, Serial0

Answer: D
Explanation: This route has the lowest metric of those listed and as such will not be shared with the neighbor.

Incorrect Answers:
A: This has the best metric thus it will be shared.
B: This route has a better metric therefore it will be shared.
C: This is a directly connected network thus it will be shared.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 258-260.

QUESTION NO: 159
Which one of the following commands will allow you to configure a login password of "Cisco" that will be used when you connect to the routers console port using the roll-over from your notebook?

A. Line vty 0
   Log in
   Password Cisco
B. Line console
   Login
   Password Cisco
C. Line login terminal
   Password Cisco
D. Line console 0
   Login
   Password CISCO
E. Line console 0
   Login
   Password Cisco

Answer: E
Explanation: This is the proper procedure.

Incorrect Answers:
A: This set of commands are used to establish a login password for incoming Telnet sessions.
B: The first command is incomplete. The command should be line console 0.
C: There is no such command.
D: Whenever you are entry a password great care must be taken, as passwords are case sensitive. In this case the password is supposed to be Cisco and not CISCO.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 101-103.

QUESTION NO: 160
Which WAN technology uses two Bearer (B) channels for data plus one Delta (D) channel for signaling information?

A. ISDN
B. Frame Relay
C. ATM
D. FDDI

Answer: A
Explanation: ISDN BRI use two B channels and one D channel.

Incorrect Answers:
B, C. Frame Relay and ATM are both WAN encapsulation types.
D. FDDI is not a WAN technology.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 387 and 373.

QUESTION NO: 161
You have issued the show ip route command and looking at the routing table entry, which of the following are used by default in the calculation of the number 8675309? (Choose two.)

I 131.107.0.0 [100/8675309] via 192.168.16.3, 00:00:55, Ethernet0

A. MTU
B. Bandwidth
C. Administrative distance
D. Hop count
E. Metric

F. Delay

Answer: B, F
Explanation: By default, only bandwidth and delay are used by the IGRP metric. In this case the metric is 8675309.

Incorrect Answers:
A: MTU can be used but it is not a default.
C: Administrative distance is not used by IGRP.
D: Hop count is not used by IGRP.
E: 1200 is the metric value.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 283-284.

QUESTION NO: 162
You have typed the command clock on a Cisco router and pressed enter/return you received "% INCOMPLETE COMMAND" response from a Cisco CLI. How can you receive help on this command?

A. Type "history" to review the prompt before the error.
B. Enter a question mark to display all console commands.
C. Type "help" followed by the command to see the command parameter.
D. Re enter the command followed by question mark to view key words.

Answer: D
Explanation: Whenever you have a problem with a command on a switch the quickest way to get help with the command is to reenter the command and follow it with ?. When one gets the incomplete error there should be no space in between the reentered command and the question mark

Incorrect Answers:
A: The history command will display the commands that were most recently entered. This will not provide help with completing the command.
B: The ? will provide you with a listing of commands but not the parameters to complete the command.
C: A help command is not provided in IOS.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 76-78.

QUESTION NO: 163

Using a class C network address your company needs 5 subnets with at least 18 hosts per subnet. What would the subnet mask be for this network?

Answer: 255.255.255.224
Explanation: We need 5 bits for the hosts (2^5-2=30 > 18). A 27 bit (32-5) network mask translates the 4th octet to 224 (=11100000 binary). The network mask used should be 255.255.255.224.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 225 and 236.

QUESTION NO: 164
What does ISL trunking protocol use to identify the VLAN membership of a frame over trunked links?

A. Frame filtering with VLAN ID
B. Frame tagging with VLAN ID
C. Frame filtering with trunk ID
D. Frame tagging with trunk ID
E. Frame filtering with VTP port ID

Answer: B
Explanation: One form of frame tagging that VLANs use is ISL tagging. The ISL tag includes the VLAN ID.

Incorrect Answers:
A, C and E: Frame filtering will not achieve the desired result.
D: Frame tagging does not include the trunk ID.

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) page 175.

QUESTION NO: 165
To configure information into RAM on a router which three commands can be used? (Choose three)

A. Configure memory.
B. Configure terminal.
C. Configure overwrite.
D. Copy TFTP startup-Config.
E. Copy running-Config startup-Config.
F. Copy startup-Config running-Config.

Answer: A, B, F
Explanation: There are a number of commands that can be used to ensure information is configured into the RAM of routers. The one that is used most commonly is the copy startup-config running-config command. This command copies the configuration in the NVRAM into the RAM. The other two commands are configure

memory (an older command that can most often still be used) and configure terminal command. The configure terminal command will open the command line from which changes to the RAM can be made.

Incorrect Answers:
C: This is not a valid command.
D and E: Both of these commands will make changes to the NVRAM and not the RAM directly.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 132-136.

QUESTION NO: 166
Using the address 192.64.10.0/28 how many subnets and hosts are available?

A. 62 networks and 2 hosts
B. 6 networks and 30 hosts
C. 8 networks and 32 hosts
D. 16 networks and 16 hosts
E. 14 networks and 14 hosts

Answer: E
Explanation: The 192.64.10.0/28 address is a Class C network. Class C network use a 24 bit subnet mask. We have subnetted this network into 192.64.10.0/28. We use 4 bits for the network and 4 bits for the hosts.
We calculate the available subnets and the available hosts.
Number of networks: 2^4-2=14
Number of networks: 2^4-2=14

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 225 – 226.

QUESTION NO: 167
The network 131.107.4.0/24 was advertised by a neighbor router from RIP and IGRP. You also added a static route to 131.107.4.0/24 manually. Which route would be used to forward traffic?

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

Answer: B

Explanation: If there are several routing sources providing common routing information, an administrative distance value is used to rate the trustworthiness of each routing source. The lower the administrative distance the more trustworthy it is. Static routes have a default distance of 1, IGRP has a default distance of 100, and RIP has a default distance of 120.

Incorrect Answers:
A: IGRP does not have the lowest administrative distance.
C: RIP does not have the lowest administrative distance in fact it has the highest.
D: As the administrative distance differs there can be no load balancing.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 256-258.

QUESTION NO: 168
You just purchased a new router from Cisco and now are in the process of installing it. Upon boot up the router enters the setup mode. You are prompted to enter the enable password and the enable secret password. What is the difference between the two passwords?

A. The enable password is encrypted.
B. The enable secret password uses IPSec password authentication.
C. The enable secret password cannot be seen as clear text when viewing the configuration.
D. The enable secret password acts as a backup in case the enable password is compromised.

Answer: C
Explanation: The enable secret password is always encrypted and can't be reverse decrypted for display.

Incorrect Answers:
A: The enable secret password is Always encrypted, the enable password is optionally encrypted.
B: IPSEC is not used for the password.
D: Enable secret password would act as a backup if the secret password was lost and forgotten, or for some reason failed to be recognized.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 86

QUESTION NO: 169
What is the broadcast address for this network 192.57.78.0/27?

A. 192.57.78.33
B. 192.57.78.64
C. 192.57.78.87

D. 192.57.78.97
E. 192.57.78.159
F. 192.57.78.254

Answer: E
Explanation: We must decide which of the IP address is a valid broadcast address for any of the 192.57.78.0/27 subnets. We know that a broadcast address has all host bits set to 1. We simply convert the 4th octet to binary and check if all five rightmost bits are 1.
159 decimal equals 10011111. This is a broadcast address for the 192.57.78.0/27 network.

Incorrect Answers
A: 33 decimal equals 00100001 binary. This is not a broadcast address in the 192.57.78.0/27 network.
B: 64 decimal equals 01000000 binary. This is not a broadcast address in the 192.57.78.0/27 network.
C: 87 decimal equals 01010111 binary. This is not a broadcast address in the 192.57.78.0/27 network.
D: 97 decimal equals 01100001 binary. This is not a broadcast address in the 192.57.78.0/27 network.
F: 254 decimal equals 11111110 binary. This is not a broadcast address in the 192.57.78.0/27 network.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233 – 234.

QUESTION NO: 170
When installing the IGRP routing protocol which of the following is also required?

A. Connected network numbers.
B. IP address mask.
C. Metric weights.
D. Autonomous system number.
E. Registered administrative id.

Answer: D
Explanation: IGRP requires an autonomous system number. The autonomous system number must be entered directly after the router igrp command and before the network command.

Incorrect Answers:
A: The network command is used to identify the directly connected networks but this is done after the autonomous system number.
B: The IP address mask is not required.
C: Metric weights are not required.
E: Registered administrative id is not required.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 285.

QUESTION NO: 171
Cisco has just released a new version of Cisco IOS and you would like to use this new version. You have downloaded this IOS from Cisco's web site and stored it on your TFTP server. Which of the following commands should you use to copy this IOS to your router?

A. Copy flash ftp.
B. Copy ftp flash.
C. Copy flash tftp.
D. Copy tftp flash.

Answer: D
Explanation: Whenever you need to load a new copy of the IOS onto the router (because the old one is damaged or you are upgrading you can download a copy of the new image from the tftp server. The proper command is copy tftp flash.

Incorrect Answers:
A: IOS images are stored on a tftp server and not a ftp server. This is not a valid command.
B: IOS images are stored on a tftp server and not a ftp server. This is not a valid command.
C: The copy flash tftp command actually copies the IOS from the router to the tftp server. This is the exact opposite of what the question asked.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 138-140.

QUESTION NO: 172
What is the decimal and hexadecimal equivalent of the binary number 01010101?

Answer: Decimal : 85
Hexadecimal : 55

Explanation:
01010101 binary equals 85 (64+16+4+1) decimal.
0101 (leftmost 4 bits) equals 5 hexadecimal.
0101 (rightmost 4 bits) equals 5 hexadecimal.
01010101 binary equals 55 hexadecimal.

Note:
Other examples:
10101010 binary, equals 170 decimal and AA hexadecimal

10100101 binary, equals 165 decimal and A5 hexadecimal

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 227 – 231.

QUESTION NO: 173
Exhibit

```
#debug ppp authentication

ppp serial1: send CHAP challenge id-47 t remote
ppp serial1: CHAP challenge from TestK
ppp serial1: CHAP response received from TestK
ppp serial1: CHAP response id=47 received from TestK
ppp serial1: Send CHAP success id=47 to remote
ppp serial1: Remote passed CHAP authentication
ppp serial1: Passed CHAP authentication
ppp serial1: Passed CHAP authentication with remote
```

You issued the command debug ppp authentication what type of handshaking was used for this PPP session?

A. One-way
B. Two-way
C. Three-way
D. No handshake required during authentication.

Answer: C
Explanation: We see that CHAP authentication is used. CHAP use three-way handshaking. We can also see the three-way handshake if we examine the exhibit carefully (challenge, challenge, response, response, success).

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 378 – 383.

QUESTION NO: 174
Which of the following protocols is referred to as a hybrid routing protocol because it has features of both distance-vector and link-state?

A. RIP
B. OSPF

C. EIGRP
D. IGRP

Answer: C
Explanation: EIGRP is an example of a balanced hybrid routing protocol. It uses distance vectors with more accurate metrics to determine the best paths to destination networks. However, it differs from most distance vector protocols as it also has some features of link-state protocols.

Incorrect Answers:
A and D: These are examples of distance vector routing protocol.
B: OSPF is an example of a link-state routing protocol.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 275-276 and 259.

QUESTION NO: 175
You would like to be able to make a backup copy of your IOS that is stored on your router. Which of the following commands can you use so that the router will become a TFTP host so that it can save the IOS to a TFTP server?

A. Copy flash tftp
B. Config tftp server
C. Write network <router name>
D. Tftp-server system <filename>
E. Setup server tftp <systemname>

Answer: A
Explanation:. To copy a system image to a TFTP network server you use **copy flash tftp** command.

Note: Syntax
copy *flash-url*
tftp:[[[//*location*]/*directory*]/*filename*]

Copies the system image from Flash memory to a TFTP server. Specify the file location and filename as the **flash-url** argument.

Reference: Cisco, Loading and Maintaining System Images

B: This is not a valid command.
C: This is not a valid command.
D: This is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 138 – 139.

QUESTION NO: 176
Your access list has one statement;

access-list 131 permit ip any 131.107.7.0 0.0.0.255 eq tcp

What does the word "any" mean in the following extended access list statement?

A. Check any of the bits in the source address.
B. Permit any wildcard mask for the address.
C. Accept any source address.
D. Check any bit in the destination address.
E. Permit 255.255.255 0.0.0.0.
F. Accept any destination address.

Answer: C
Explanation: The **permit** keyword permits traffic. The **any** keyword implies that any address is allowed. Here any is used as the *source* and *source-wildcard* parameter (see note below). Therefore the access-list permits any source address.

Note: Syntax for an extended access list
access-list *access-list-number* {**deny** | **permit**} *protocol source source-wildcard destination destination-wildcard* [**precedence** *precedence*] [**tos** *tos*]
The access-list-number must be in the 100 to 199 or the 2000 to 2699 range.

Reference: Cisco, Command Reference

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 308 – 309.

QUESTION NO: 177
Routing Protocols use which OSI layer to determine the best path to a network?

A. Data Link
B. Network
C. Physical
D. Presentation
E. Session

F. Transport

Answer: B
Explanation: Routing protocol work at the network layer (layer 3) in the OSI model.

Incorrect Answers:
A. Data Link layer is concern with a number of things (error detection for example) but not for route determination.
C. Physical layer has nothing to do with route determination. It puts the bits onto the physical wire.
D. Presentation layer deals with how the data is presented and not how it is routed.
E. Session layer is responsible for establishing, managing, and ending communication.
F. Transport layer is responsible for the connection type and error correction.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 11 – 12.

QUESTION NO: 178
If we are using IPX as our routed protocol and our network has an existing Novell Server with an IPX network address of 4ad1 and we are connecting a Cisco routers Ethernet port to the same segment. The MAC address of the Ethernet port is 021f.2cfe.8322. What will the complete IPX address be for the Ethernet port.

Enter the IPX address for the port.

0 . 0 . 0 . 0

Answer:

4ad1 . 021f . 2cfe . 8322

Explanation:
An IPX address is composed of two parts: the network number and the node number. For IPX the node number is usually obtain from MAC address of the network interface. In this case the network number is 4ad1 and the node number/MAC address is 021f.2cfe.8322. Thus the ipx address is 4ad1.021f.2cfe.8322.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 332-333.

QUESTION NO: 179
Which two of the following were created to avoid routing loops with distance vector routing protocols? (Choose two)

A. Split horizon.
B. Route Poison.
C. Area Hierarchies.
D. Link State Algorithms.

Answer: A, B
Explanation: There are a number of ways of reducing the chance of routing loops. One way is split horizon. The split horizon rule is that it is not useful to send information about a route back in the direction from which the original update came. Another way is route poisoning. Route poisoning attempts to eliminate routing loops caused by inconsistent updates. With this technique, the router sets a table entry that keeps the network state consistent while other routers gradually converge correctly on the topology change.

Incorrect Answers:
C: Hierarchical areas make for a more efficient use of address but will not prevent loops.
D: Link State is a different method than Vector Routing, they are not combined for loop elimination.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 266-270.

QUESTION NO: 180
The Defense Advanced Research Projects Agency (DAPRA) developed the TCP/IP suite of protocols. Which layer in that TCP/IP model corresponds to the OSI model's network layer?

A. Application
B. Transport
C. Internet
D. Network
E. Physical

Answer: C
Explanation: The ARPA model Internet layer corresponds to the network layer of the OSI model.
Reference: http://www.cisco.com/univercd/cc/td/doc/product/iaabu/centri4/user/scf4ap1.htm

QUESTION NO: 181
Exhibit

```
RouterTK1(config)#router igrp 200
RouterTK1(config-router)#network
192.168.3.0
RouterTK1(config-router)#network
192.168.4.0
RouterTK1(config-router)#network
192.168.5.0
RouterTK1(config-router)#network
172.16.0.0
```

```
RouterTK2(config)#router igrp 300
RouterTK2(config-router)#network
192.168.3.0
RouterTK2(config-router)#network
192.168.6.0
RouterTK2(config-router)#network
192.168.7.0
```

Examine the Routing tables of RouterTK1 and RouterTK2 above after the next IGRP update is sent from RouterTK1 to RouterTK2 what networks will show up in RouterTK2's route table.

A. 192.168.3.0
   192.168.4.0
   192.168.5.0
   192.168.6.0
   192.168.7.0
   172.16.0.0
B. 192.168.3.0
   192.168.6.0
   192.168.7.0
C. 192.168.3.0
   192.168.4.0
   192.168.5.0
   192.168.6.0
   192.168.7.0
D. 172.16.0.0
E. 192.168.3.0
   192.168.4.0
   192.168.5.0

Answer: B
Explanation: Routers must have same AS number. Only the networks defined at RouterTK2 will be shown. No networks will be copied from RouterTK1.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 282 – 286.

QUESTION NO: 182
Your router stores routing tables, ARP cache, and packet buffers where are these stored?

A. ROM
B. RAM
C. NVRAM
D. Flash memory

Answer: B
Explanation: RAM (random access memory) is used by all computers to store information. Cisco routers use RAM to store packet buffers, routing tables and ARP cache.

Incorrect Answers:
A: ROM are chips that are used to help boot a system, and are changed only be replacing the chips themselves.
B: NVRAM is used to save long-term items that don't change much, such as the startup configuration.
D: Flash is used to save copies of the IOS code.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 125-126.

QUESTION NO: 183
You are the network administrator of the Sonic Water Company. One of your users is unable to reach the company's web site that is hosted at a remote site. Looking at the personal computer you discover the following information:

Local PC – 10.0.3.35/24
Default gateway – 10.0.3.1
Remote server – 10.0.5.250/240

You then conduct the following tests from the offending local PC:

ping 127.0.0.1 – successful
ping 10.0.3.35 – successful
ping 10.0.3.1 – unsuccessful
ping 10.0.5.250 – unsuccessful

Which of the following problems would create the test results listed above?

A. TCP/IP not correctly installed.
B. Local physical layer problem.

C. Local NIC not functioning.
D. Remote physical layer problem.

Answer: B
Explanation: The client was only able to ping itself, not the default gateway or the remote server. A local physical layer problem, for example a faulty patch cable, could explain the results above.

Incorrect Answers:
A: You would not be able to ping anything if TCP/IP was not correctly installed.
C: You would not be able to ping anything of the local NIC was not functioning.
D: A remote physical layer problem would not prevent the local PC from pinging the gateway.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 124 – 125.

QUESTION NO: 184
Which are the following are considered ISDN benefits? (Choose four)

A. Full time connectivity across the ISDN supported by Cisco IOS routing using dial on demand routing DDR.
B. Small office and home office sites can be economically supported with ISDN basic rate interface BRI services.
C. ISDN replaces signaling system ss7 in the public switch telephone network PSTN backbone.
D. ISDN can be used as a backup service for a lease line connection between the remote and central offices.
E. Modem racking and cabling can be eliminated by integration with digital modem cards on Cisco IOS network access servers NAS.

Answer: A, B, D, E
Explanation: When ISDN is implemented there are great deals of benefits. Among these benefits are higher speeds, ability to use DDR, reduce need for equipment, economic to deploy in medium size companies, and the ability to use other mediums as backup

Incorrect Answers:
C: ISDN can be used on the existing telephone network without the need of signaling changes.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 387-400.

QUESTION NO: 185
You are the network administrator of the ABC Tire Company. You receive a call from a user who is unable to reach a server at a remote server 10.0.5.250/240. Using VNC (Virtual Network Computing) you connect to the user's computer and discover the following information:

Local PC – 10.0.3.35/24
Default gateway – 10.0.3.1
Remote server – 10.0.5.250/24

You then conduct the following tests from the user's PC:

ping 127.0.0.1 – successful
ping 10.0.3.35 – successful
ping 10.0.3.1 – successful
ping 10.0.5.250 – unsuccessful

Which of the following problems would create the test results listed above?

A. TCP/IP not correctly installed.
B. Local physical layer problem.
C. Local NIC not functioning.
D. Remote physical layer problem.

Answer: D
Explanation: As the ping of the remote server was unsuccessful there is a problem with the remote physical layer problem.

Incorrect Answers:
A: You would not be able to ping anything if TCP/IP was not correctly installed.
B: You would not be able to ping the local IPs if there was a problem with the local physical layer.
C: You would not be able to ping anything of the local NIC was not functioning.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 124.

QUESTION NO: 186
Gail was working on your Cisco router while you were at lunch. Which command will display the last commands Gail entered?

A. Control header.
B. Show buffer.
C. Show history.

D. Show history buffer.

Answer: C
Explanation: The show history command will show of the commands that are stored in the buffer.

Incorrect Answers:
A, B, D: Are not valid IOS commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 94.

QUESTION NO: 187
What is the bit pattern for the first octet of a class B network address 129.107.0.0?

A. 0xxxxxxx
B. 10xxxxxx
C. 110xxxxx
D. 1110xxxx
E. 11110xxx

Answer: B
Explanation: Class B networks use a default subnet mask of 255.255.0.0 and have 128-191 as their first octet. 129 binary is 10000001 and 191 binary is 10111111.

Incorrect Answers:
A. Require a 1 in the first space of the octet to be a Class B address.
B, C, D, E. Are to large to be a Class B addresses.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 221 – 223.

QUESTION NO: 188
Which command will provide you with information regarding the Layer 3 IP address of a directly connected neighbor?

A. Show ip interface
B. Show cdb neighbors
C. Show cdp neighbors detail

D. Show ip route
E. Show ip link status
F. Telnet

Answer: C
Explanation: The show cdp neighbors detail command displays information about neighboring devices. The information displayed includes Layer 3 protocol information and Neighbor Device ID. The show cdp entry command also results in the same information as the show cdp neighbors detail command.

Incorrect Answers:
A: The show ip interface command display IP interface information and indicates whether any access list are set for a specific interface.
B: The show cdp neighbors command displays such information as Neighbor Device ID and Local Interface but nothing on Layer 3 protocols.
D: The show ip route command displays the contents of the ip routing table.
E: This is not a valid command.
F: The telnet command is used to establish a telnet command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 116-119, 324-324, 280, and 120.

QUESTION NO: 189
How many bits are used for a MAC address and how is number expressed?

A. 24 bits expression as a decimal number.
B. 24 bits expression as a hexadecimal number.
C. 36 bits expression as a binary number.
D. 48 bits expression as a decimal number.
E. 48 bits expression as a hexadecimal number.

Answer: E
Explanation:
The MAC address is a 48 bit address expressed as 12 hexadecimal digits. The first 24 bits or 6 hexadecimal digits of the MAC address contain a manufactures identification or vendor code (also known as the Organizationally Unique Identifier – OUI). To ensure uniqueness, the IEEE administers OUIs. The last 24 bits or 6 hexadecimal digits are administered by each vendor and often represent the interface serial number.

Incorrect Answers:
A, B, and C: MAC addresses are 48 bits that are expressed as a hexadecimal number.
D: MAC addresses are expressed as hexadecimal, not decimal.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 19-20.

QUESTION NO: 190

User Datagram Protocol is a Connectionless transport layer protocol in the TCP/IP protocol stack. UDP is defined in RFC 768. Which of the following are generally considered to be characteristics of UDP? (Choose two.)

A. Non-reliable.
B. Reliable.
C. Less bandwidth-intensive.
D. Handshaking.

Answer: A, C:
Explanation: Connectionless protocols, for example UDP, do not establish a connection between the communicating partners and do not use acknowledgements. This makes connectionless protocols non-reliable. However, this also makes them less bandwidth intensive since they carry very little overhead data.

Incorrect Answers
B: Connection-oriented protocols are reliable.
D: Connectionless protocols do not establish a connection so they have no use of handshaking.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 206 – 208.

QUESTION NO: 191
You have been called in to fix a router that is having security issues. The router has an access list configured on it but the list does not seem to be working. What command can you use to see if the access list has been applied to an interface?

A. Show access-list.
B. Show ip route.
C. Show ip interface.
D. Show interface.
E. Show interface list.

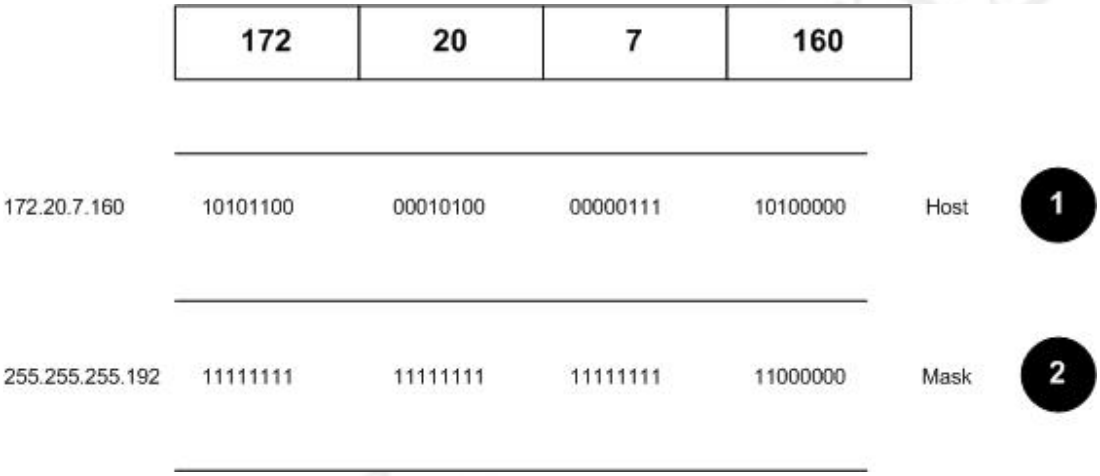
Answer: C

Explanation: The show ip interface command display IP interface information and indicates whether any access list are set for a specific interface and it also indicates if the access list is inbound or outbound.

Incorrect Answers:
A: This is not a valid command.
B: The show ip route command displays the contents of the ip routing table.
D: The show interface command displays the serial interface configuration.
F: This is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-325, 280, and 106

QUESTION NO: 192
Exhibit:



You are configuring an IP printer that is connected to your network. You would like to use the last IP address that is on your subnet for this printer. You run ipconfig on your personal computer and the exhibit shows your IP address and its subnet mask. Based on your IP address and subnet mask what would the last possible address be on your subnet?

A. 172.20.7.255
B. 172.20.7.197
C. 172.20.7.190
D. 172.20.7.129
E. 172.20.255.255

Answer: C
Explanation: In order to determine the last available host you will need to draw a vertical line just after the last contiguous subnet mask 1 bit. On the next line write the address that it to the left of the line and then to the

right of the line place all 1s in the remaining spaces until the last free space. Place a 0 in this place. Convert the binary to dotted-decimal and this will be the last available host.

In this case the binary would be:
10101100 00010100 00000111 10 111110
This converts to
172.20.7.190
Incorrect Answers:
A: This is the IP that would be used to send a broadcast to all host of the 172.20.7 subnet.
B: With the facts of this question this is not a valid IP.
D: This is the IP address used to send a message to all hosts on the 172.20 network.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 232-234.

QUESTION NO: 193
Which of the following devices operate at Data Link layer of the OSI model? (Choose two)

A. Router
B. SMTP server
C. Transceiver
D. Switch
E. Bridge
F. Hub

Answer: D, E
Explanation: Switches and bridges operate the Data Link layer, layer 2, of the OSI model.

Incorrect Answers
A: A router operates at the network layer, layer 3.
B: An SMTP server operates at the upper layers of the OSI model.
C: A transceiver works at the physical layer, layer 1.
F: A hub operates at the physical layer, layer 1.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 14 – 25.

QUESTION NO: 194
You have just created an IP extended access list and now wish to apply this to an interface. Which command will allow you to apply the list to an interface?

A. Permit access-list 101 out
B. Ip access-group 101 out
C. Apply access-list 101 out
D. Access-class 101 out
E. Ip access-list e0 out

Answer: B
Explanation: In order for an access list to be activated the ip-access group command must be used. This command activates the ip access list on an interface. Before you use the ip-access group command you must take care to ensure that you have configured an access list. If you do not the result will be permit any.

Incorrect Answers:
A, C-E: Are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 305.

QUESTION NO: 195
A publishing company has three routers in their network. Marshal, Sherman, and Patton. The Marshal and Sherman routers are fully configured. The Patton router is also fully configured, but need to have a password for the first 5 virtual lines, password for console, and an encrypted password for privileged mode.

Configure the passwords on the Patton router according to the table below.

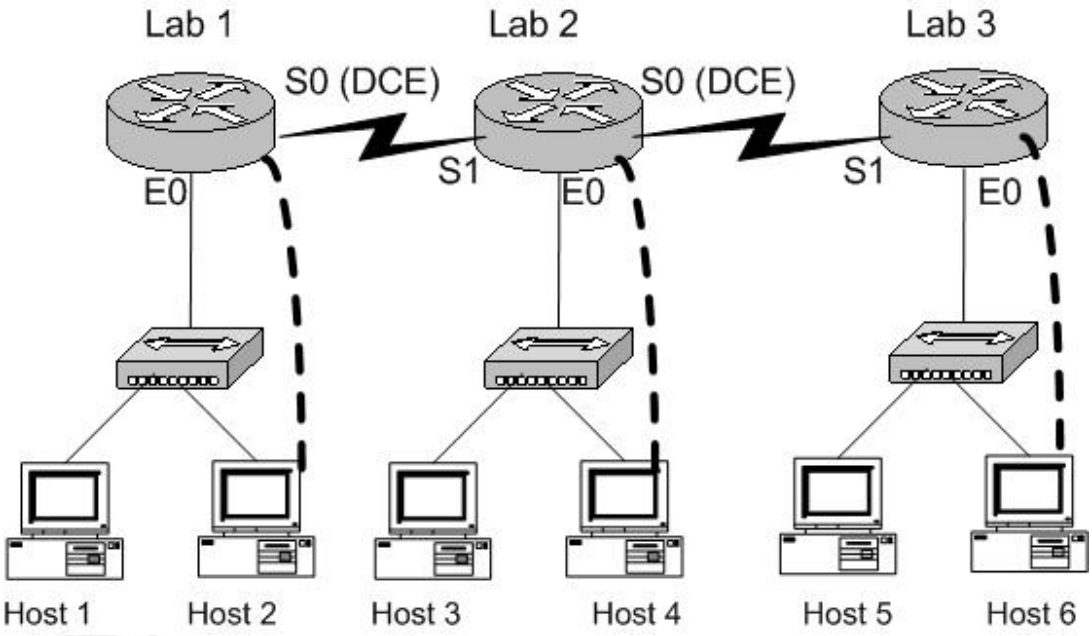
Type	**Password**
Telnet	apple
Console	pear
Privileged	peach

- **The routers are named Marshal, Sherman, and Patton.**
- **The network is subnetted with a mask 255.255.255.224**
- **The routing protocol is RIP**
- **The serial 0 interface is provided with clocking.**
- **The chart below includes the IP addresses.**

Lab 1
Name : Marshal
E0 : 192.168.12.33
S0 : 192.168.12.65

Lab 2
Name : Patton
E0 : 192.168.12.97
S0 : 192.168.12.129
S1 : 192.168.12.68

Lab 3
Name : Sherman
E0 : 192.168.12.97
S0 : 192.168.12.129
S1 : 192.168.12.68



Start by clicking on host that is connected to the router you want to configure.

Answer Lab 2:
<Click Host4, which is connected to Router Lab 2>

enable
config terminal
hostname Patton
enable secret peach
line con 0
login
password pear
line vty 0 4
login
password apple
^Z
copy running-config startup-config

Explanation:
We should configure the passwords, not any IP configuration on the interfaces.

First we click on the Lab2 router.

```
Router Con0 is now available

Press RETURN to get started.                    ! We press enter.



Router>enable                                   ! We enter enable mode
Router#config terminal                          ! We enter terminal configuration mode
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname Patton                  ! We change the host name. This is however not required.
Patton(config)#enable secret peach              ! Set the secret password.
Patton(config)#line con 0                       ! Configure the terminal connection
Patton(config-line)#login                       ! Specify the terminal connection password
Patton(config-line)#password pear
Patton(config-line)#line vty 0 4                ! Configure the telnet connections. Numbered 0, 1, 2, 3, 4.
Patton(config-line)#login                       ! Specify password
Patton(config-line)#password apple
Patton(config)#^Z                               ! Exit from configuration mode.
%SYS-5-CONFIG_I: Configured from console by console
Patton#copy running-config startup-config       ! Save the running config to NVRAM.
Destination filename [startup-config]?          ! Confirm default selections
Warning: Attempting to overwrite an NVRAM configuration
previously written by a different version of the system image.
Overwrite the previous NVRAM configuration?[confirm]
```

```
Building configuration...

[OK]
Patton#
```

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 102 – 103.

QUESTION NO: 196
Which one of the following characteristics about Ethernet Switches is true?

A. Symmetric switching allows connection between ports of unlike bandwidth and does not require memory buffering.
B. Memory buffering is used to prevent a bottleneck when ports of different bandwidth are connected on a symmetric switch.
C. The latency can be reduced if the switch utilizes the store and forward method of switching. Store and forward is better for error detection.
D. The cut-trough method of switching is faster because the switch forwards the packet to the destination as soon as it reads the destination address.

Answer: D
Explanation: In cut-through mode, the switch checks the destination address (DA) as soon as the header is received and immediately begins forwarding the frame. Depending on the network transport protocol being used (connection or connectionless orientate), there is a significant decrease in latency from input port to output port. The delay in cut-through switching remains constant regardless of the size of the frame , because this switching mode starts to forward the frame as soon as the switch reads the DA.

Incorrect Answers:
A: Symmetric switching provides evenly distributed bandwidth to each port, while asymmetric switching provides unlike, or unequal, bandwidth between some ports.
B: This is not a true statement.
C: Store-and-forward switching increases latency.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.
http://www.cisco.com/univercd/cc/td/doc/cisintwk/ito_doc/lanswtch.htm

QUESTION NO: 197
To configure RouterTK for operation in a Frame Relay environment, one of the recommended items to configure is the IGRP metric for the speed of the link. What command should you use?

A. RouterTK(config)# IGRP metric 36k

B. RouterTK(config)# bandwidth 36
C. RouterTK(config-if)# metric 36k
D. RouterTK(config-if)# bandwidth 36

Answer: D

Explanation: The **bandwidth** command overrides the default bandwidth. The bandwidth has no effect on the actual speed of the line. Instead, it is used to compute routing metrics ad the load of the link. Bandwidth is expressed in Kilobits. It is specified during interface configuration.

Reference: Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 104-106.

Incorrect Answers

A: You cannot use **36k** in this statement. You have to supply a numerical value. Furthermore, you have to be in interface configuration mode.
B: You must be in interface configuration mode to define the bandwidth. The prompt must be *RouterTK(config-if)#.*
C: You cannot use **36k** in this statement. You have to supply a numerical value.

QUESTION NO: 198
Exhibit

```
TestK#show access-list
Extended IP access list 135
        deny   tcp any 131.107.0.0 0.0.255.255
eq 53
        deny   tcp any any eq telnet

TestK#show ip interface e0
Ethernet0 is up, line protocol is up
  Internet address is 172.17.9.60/24
  Broad address is 255.255.255.255
  Address determined by setup command
  MTU is 1500 bytes
  Helper address is not set
  Directed broadcast forwarding is enabled
  Outgoing access list is 135
  Inbound access list is not set
  Proxy ARP is enabled
  Security level is default
  Split horizon is enabled

Rest of configuration omitted.
```

You have created an Extended IP access list. Now you apply the access list to Ethernet 0.

What is the result of this action?

A. Only e-mail and telnet access will be permitted out of Ethernet 0.
B. All hosts on the 172.30.24.64 network will be permitted e-mail and telnet access.
C. All TCP protocols will be permitted out of Ethernet 0 except e-mail and telnet.
D. All IP traffic out of Ethernet 0 will be denied.
E. The access-list is numbered incorrectly and will fail.

Answer: D
Explanation: The exhibit is showing an extended IP access-list configuration**.** For this access list to have the desired effect it will require a permit statement at the end as there is an implicit deny statement otherwise. The statement should be: access-list 105 permit ip any any.

Incorrect Answers:
A, B and C: All traffic out will be denied without a permit statement.
E: The access-list is correctly numbered.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 310-320.

QUESTION NO: 199
Which of the following ranges are used for IPX standard access lists?

A. 100 - 199
B. 600 - 699
C. 800 - 899
D. 1000 - 1099

Answer: C

Explanation:
Access list exist for IPX traffic, just like they do with IP traffic. Like IP there are ranges for IPX access list. The IPX access list ranges are: 800 to 899 – standard access lists, 900 to 999 – extended access lists, and 1000 to 1099 – SAP filter access lists.

Incorrect Answers:
A: 100-199 is the range for an extended ip access address.

C: This is not a defined access list range.
D: The range 1000-1099 is for SAP filter access list.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 350-351 and 305.

QUESTION NO: 200
There are three major groups of routing protocols: distance-vector protocols, link-state protocols, and hybrid protocols. Select two valid statements regarding routing protocols? (Choose two)

A. Distance vector protocols send the entire routing table to directly connected neighbors.
B. Link state protocols send the entire routing table to all routers in the network.
C. Distance vector protocols send updates about directory connected neighbors to all networks listed in the routing table.
D. Link state protocols send updates containing the state of their own links to all other routers on the network.

Answer: A, D
Explanation: Distance vector protocols send their entire routing table to adjacent routers.
Link-state protocols only send link-state updates to all routers on their network (or autonomous system).

Incorrect Answers:
B. Link state protocols do not send their entire routing table rather only updates on their own links.
C. Distance vector protocols in fact send their entire routing tables.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 259 – 260 and 274 – 275.

QUESTION NO: 201
Consider a standard half- duplex Ethernet circuitry. What is true concerning this circuitry?

A. It is alternate one-way communication.
B. The receive (RX) is wired directly to the transmit (TX) of the remote station.
C. The receive (TX) is wired directly to the receive (RX) of the remote station.
D. Collisions are not possible.
E. Both stations can transmit simultaneously.

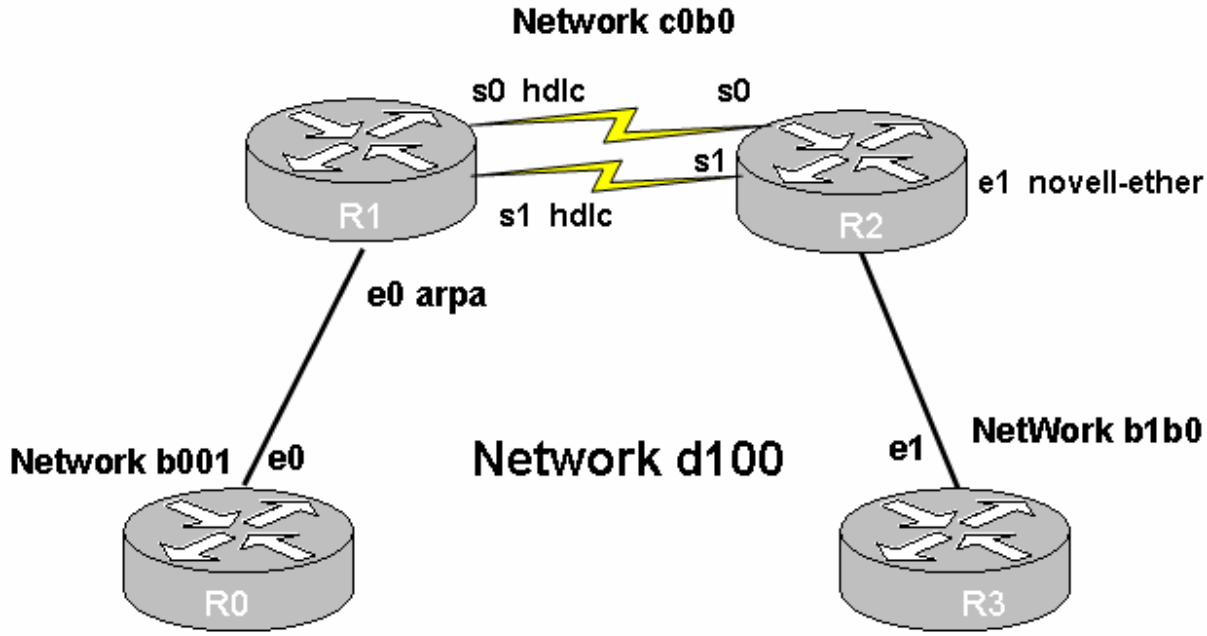
Answer: A

Explanation: Half-duplex is a form of one-way communication. Traffic can flow in both directions, but only alteringing, not simultaneously in both directions..

Incorrect Answers:
B, C: This describes a possibly wiring of full-duplex circuitry.
D: Collisions are possible on Half-duplex circuitry. CSMA/CD must be used to detect collisions. Collisions are not possibly on Full-duplex circuitry.
E: Full-duplex stations are required for simultaneous transmission.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 163-165.

QUESTION NO: 202



You are configuring R3 so that it can communicate with R2 on Ethernet port e1. What encapsulation should you use on e1 to setup this IPX network?

A. SAP
B. HDLC
C. ARPA
D. Novell-Ether

Answer: D

Explanation: In order for both routers to communicate they must be using the same type of encapsulation. Therefore e1 of router R3 must have novell-ether encapsulation.

Incorrect Answers:
A, B, and C: The two routers must have the same encapsulation type to communicate properly thus these encapsulation types could not be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 334-337.

QUESTION NO: 203

A Web consulting business has three routers in their systems. These router, Venus, Afrodite, and Zeus, are placed in separate local area networks. The Venus and Afrodite routers need no further configuration. The configuration of Zeus is also complete, except the password for the first 5 virtual lines, the password for the console, and the password for the privileged mode. The CIO has told you that the privileged password must be encrypted to achieve highest possible security.

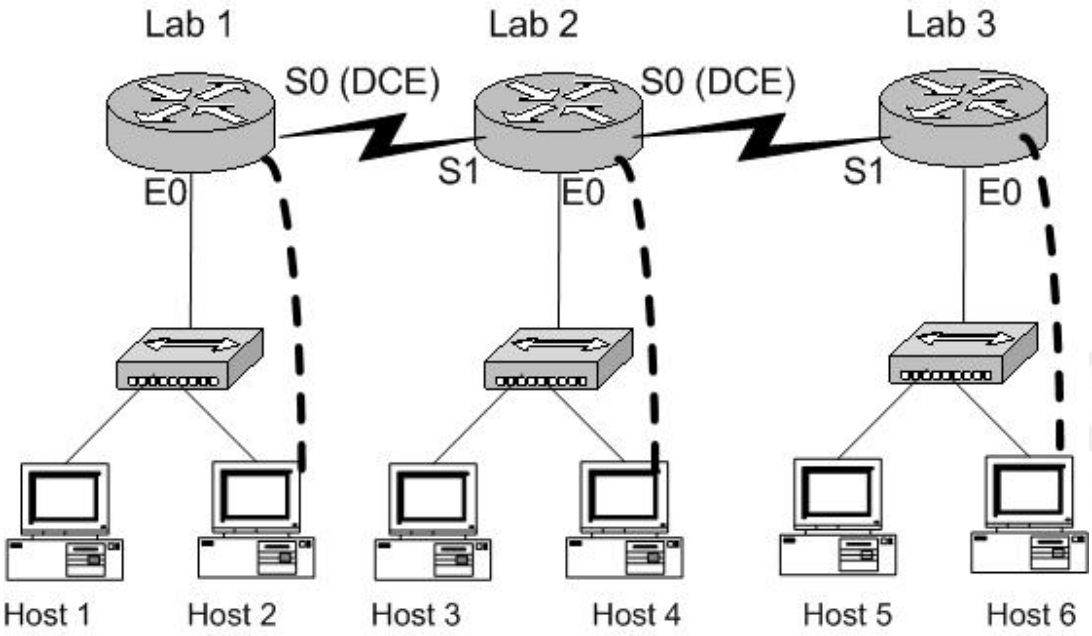
Your task is to configure the passwords on the Zeus router. The passwords to configured are:

Type	Password
Telnet	Testking
Console	andorra

Lab 1
Name: Zeus
E0 : 213.197.14.189
SO : 213.197.14.211

Lab 2
Name: Venus
E0 : 213.197.14.23
SO : 213.197.14.37

Lab 3
Name: Afrodite
E0 : 213.197.14.73
SO : 213.197.14.113
S1 : 213.197.14.120



Start by clicking on host that is connected to the router you want to configure.

Simulation answer:

Lab 1
<Click on Host2, which is connected to the Lab 1 router>
enable
config terminal
enable secret whatsoever
line vty 0 4
login
password Testking
line console 0
login
password andorra
^z
copy running-config startup-config

Explanation:
For the task you don't need to change anything but passwords and we only have to perform Lab 1.

```
Router Con0 is now available

Press RETURN to get started.                    ! We press enter.

Zeus>enable                                     ! Enter enable mode for configuration.
```

```
Zeus#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Zeus(config)#enable secret whatsoever          ! Define an enable password (choose something).
                                               ! Make sure that you use the secret keyword.
Zeus(config)#line vty 0 4                      ! We configure the telnet keyword on all 5 telnet
                                               ! connections: 0, 1, 2, 3, 4
Zeus(config-line)#login
Zeus(config-line)#password Testking            ! Specify the telnet password.
Zeus(config-line)#line console 0               ! We configure the console password
Zeus(config-line)#login
Zeus(config-line)#password Andorra             ! We specify the console password.
Zeus(config-line)#^Z                           ! We exit configuration mode with Ctrl-Z.
%SYS-5-CONFIG_I: Configured from console by console
Zeus#copy running-config startup-config        ! We copy the running configuration to NVRAM.
Destination filename [startup-config]?         ! We accept the default target location (press enter)
Warning: Attempting to overwrite an NVRAM configuration
previously written by a different version of the system image.
Overwrite the previous NVRAM configuration?[confirm]        ! We confirm the overwrite (press enter)
Building configuration...

[OK]
Zeus#
```

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) pages 28-30.

QUESTION NO: 204
You just purchased a brand new Cisco 2621 Router and now would like to configure password protection on this router. Which of the following are true regarding passwords on this router?

A. All passwords can be encrypted.
B. All passwords can be entered using the set-up dialogue.
C. A password can be set before a user can enter the privileged mode.
D. A password can be set for individual lines.
E. TACACS or Radius password authentication can be used.

Answer: A, C, D, E
Explanation: In general enabled passwords are not encrypted but with the service password-encryption command all passwords are encrypted. Passwords are entered in the privileged mode and they can be set for individual lines. In addition TACAS or Radius password authentication can also be used.

Incorrect Answers:
B: The set-up dialogue box can only be used to enter some passwords.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 102-103.

QUESTION NO: 205
You want to make sure that access-list you just created does not conflict with an existing access-list. Which router command allows you to view all of the access-lists created and the contents of all access lists?

A. Router# show interface.
B. Router> show IP interface.
C. Router# show access-lists.
D. Router> show all access list.

Answer: C
Explanation: The show access-lists command will display the contents of all access lists. C is the closest to this command.

Incorrect Answers:
A: Only access lists bound to that interface would be displayed
B: Show ip interface command must be given in the privilege EXEC mode.
D: This is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-325.

QUESTION NO: 206
Which one of the following statements about an Ethernet LAN is true?

A. The advantage of a full duplex is the ability to transmit data over Mbase2 cable.
B. Full duplex Ethernet requires a point-to-point connection when only two nodes are present.
C. Ethernet switches can use full duplex mode to connect multiple nodes to a single port of a switch.
D. Half duplex is a cut through packet processing method that is very fast with little error correction, full duplex is store and forward method that is slower but has better error correction.

Answer: B
Explanation: Full duplex always requires there to be a point to point connection.

Incorrect Answers:
A: Full duplex is done over CAT 5 cable.
C: Full duplex can only be done if one node is attached to a particular port.
D: Half/Full duplex is independent of cut-through and/or store and forward.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 165.

QUESTION NO: 207
Assuming that our network is using an older version of UNIX what is the maximum number of subnets that can be assigned to networks when using the address 131.107.0.0 with a subnet mask of 255.255.240.0?

A. 16
B. 32
C. 30
D. 14
E. It is an invalid subnet mask for the Network

Answer: D
Explanation: 131.107.0.0 is a Class B IP address. With a subnet mask of 255.255.240.0 they maximum number of subnets are 14 and 4094 hosts.

Incorrect Answers:
A: 16 is not a valid maximum number of subnets for a Class B IP address.
B: 32 is not a valid maximum number of subnets for a Class B IP address.
D: For a maximum number of subnets to be 30 the subnet mask would need to be 255.255.248.0.
E: 255.255.240.0 is a valid subnet mask.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233 – 235.

QUESTION NO: 208
AJ has just created an IP access-list and you will like to see if he has applied this access-list to an interface. Which one of following commands will allow you to see if an access-list has been applied to an interface?

A. Router# show ip interface
B. Router> show access-list
C. Router# show ip access-list
D. Router> show interface ip access-list

Answer: A
Explanation: The show ip interface command displays IP interface information and indicates whether any access lists are set for a specific interface.

Incorrect Answers:
B: The show access-lists command must be given in the privileged EXEC mode.
C: Even if the proper command was used the end result would the displaying of all IP access lists running in the router, not for a particular interface.
D: This is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324-325.

QUESTION NO: 209
You have just been hired to setup a new company network. This company will be using an accounting package that requires multiple hosts. These hosts are the accountants and they must be able to support data transfer between each other at a rate of 10 Mbps. The company will also have a file server that is used for the other employees of the company who just use word processing applications that use less than 3 Mbps to transfer files to server.

What is your economical recommendation?

A. That the existing 10BaseT hub be replaced with 100BaseT hub to improve overall performance.
B. That a router can separate the testing application from the rest of the network thus allowing the testing application more bandwidth.
C. That the switch be installed so that enterprise server can be provided a 100 Mbps port and each of the testing application hosts can be given dedicated 10 Mbps ports.
D. That a bridge be placed between the enterprise server and all other users with the exception of the testing application.

Answer: C
Explanation: With buffering in the switch, the enterprise server can serve multiple hosts at almost full capacity, since the 100Mbps port will be faster than the rest of the users totaled as a whole.

Incorrect Answers:
A: This would require all NICs to be upgraded, and result in a large collision domain with possible poor performance.
B: A router would become a bottleneck, and not allow efficient performance.
D: A bridge would be a bottleneck, and not be able to provide the necessary performance and throughput.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 31-38.

QUESTION NO: 210
You would like to use Ethernet 100BaseTx in your network. What is the maximum cable length?

A. 10 m
B. 50 m
C. 100 m
D. 1000 m

Answer: C
Explanation: The 100BaseTx maximum cable length is 100 m.

Incorrect Answers:
A and B: Neither 10 m nor 50 m are maximum cable lengths.
F: This is the maximum length of fiber optic.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 45-46.

QUESTION NO: 211
One of the security mechanisms used in securing a router is access-lists. You have decided to use Standard IP access lists in your company which of the following is an example of a Standard IP access lists?

A. Access-list standard 172.16.4.13
B. Access-list 2 deny 172.16.4.13 0.0.0.0
C. Access-list 101 deny 172.16.4.13 0.0.0.0
D. Access-list 199 deny 172.16.4.13 255.255.255.255

Answer: B
Explanation: A standard access list is in the range of 1-99 and the proper command syntax is access-list {access-list number} {permit or deny} {test conditions}. In this case the test condition is an ip address.

Incorrect Answers:
A: The access command must contain a number and whether the action is to be permitted or denied.
C: Is an extended access-list number and not a standard number.
D: 199 is also an extended access-list number and not a standard number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 304-305.

QUESTION NO: 212
Using your protocol analyzer you have determined your network is very congested. Currently all the devices are connected through a hub. Which solution would best decrease congestion on the network?

A. Add a second hub.
B. Replace the hub with a router.
C. Replace the hub with a switch.
D. Replace the hub with a repeater.

Answer: C
Explanation: A switch would eliminate the collision domains and thus increasing speed.

A router would break each segment into their own collision domains and broadcast domains. This would reduce network congestion the most.

Incorrect Answers:
A: There will still be one collision domain which would mean that the network would still be congested.
B: A router can be used to segment the network into subnets. However, this would require further adjustments: the subnets must be created. Furthermore, a switch is faster than a router and a single hub needs to be replaced.
D: A repeater does not affect congestion.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 20-27.

QUESTION NO: 213
What is the maximum cable distance for 100BaseT?

A. 607 ft
B. 25 meters
C. 1000 ft
D. 100 meters
E. 185 meters

Answer: D
Explanation: A 100BaseT cable cannot be any longer than 100 meters.

Incorrect Answers:
A, B, C, & E: Are wrong.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 45.

QUESTION NO: 214
Which of the following are true about debug output?

A. The default is to send debug output to the console screen.
B. To view debug output from a telnet session, the "terminal monitor" command must be used.
C. If the "logging buffered" command is used, the debug output would be sent to RAM and can be viewed with the "show log" command.
D. If the "no logging console" command were configured, output would not be sent to the console.
E. All of the above.

Answer: E

Explanation: Debug is one of the most powerful diagnostics tools to troubleshoot a router. By default the output goes to the console screen. User might or might not be interested in seeing the messages as they occur. The console port always receives syslog messages. When a user telnets to the router, however, no syslog messages are seen unless the user issues the terminal monitor command. Another alternative for viewing syslog messages is to have the IOS record the syslog messages in a buffer in RAM, and then use the show logging command to display the messages. For telnet users, having the messages buffered using the global config command logging buffered is particularly useful. The no console logging command were configured, output would be sent to a telnet session.

Incorrect Answers:
A, B, C and D: Are partially correct individually.

Wendell Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) pages 33.

QUESTION NO: 215
Your company has decided to pay for one ISDN B channel to your to house so that you can do some technical support from home. What is the bandwidth capacity of a single ISDN B channel?

A. 16 Kbps
B. 64 Kbps
C. 128 Kbps
D. 512 Kbps
E. 1.54 Mbps

Answer: B
Explanation:
The Bearer (B) channel transfer rate is 64 kbps.

Incorrect Answers:
A: Is the Delta (D) channel that has a transfer rate of 16 kbps.
C, D and E: The ISDN B channel only operates at a maximum of 64 kbps.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 387-388.

QUESTION NO: 216
You are using two back-to-back serial cables in your test lab between two Cisco routers. You have determined that one of these routers is the DCE by using the show controllers command. You now need to configure the clock rate to 64 Kbps on serial0 which one of the following commands will allow you to do this?

A. Clockrate 64
B. Clock rate 64
C. Clockrate 64000
D. Clock rate 64000
E. Set clockrate 64
F. Serial 10 clockrate 64
G. Clock rate 64000 serial 10

Answer: D
Explanation: The proper syntax to set the clock rate is **clock rate {*speed*}**. Please remember the speed cannot be abbreviated.

Incorrect Answers:
A and C: Clock rate must be separated.
B: The speed cannot be abbreviated and must be 64000.
E, F and G: This are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 105-106.

QUESTION NO: 217
You have just purchase a brand new router and need to configure this router after the router boots up you exit the setup mode by pressing Ctrl-C and you are now in user mode which command do you use to enter the privileged mode so that you can configure the router?

A. Set
B. Enable
C. Configure
D. Privileges

Answer: B
Explanation: To change from the user EXEC mode to the privileged EXEC mode the command is enable.

Incorrect Answers:
A: The command set must be followed by another parameter such as user and the set command cannot be used to get into the privileged mode
C: Configure is used in privileged mode, but does not ENTER that mode.
D: This in not valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 69-70.

QUESTION NO: 218
Which of the following are considered VLAN benefits?

A. It increases the number of broadcast domains.
B. It decreases the number of broadcast domains.
C. It increases the number of collision domains.
D. It decreases the number of collision domains.
E. Since it is a virtual interface, it never shuts down.

Answer: A
Explanation: A VLAN is a logical broadcast domain that can span multiple physical LAN segments. A VLAN can be designed to provide independent broadcast domains for stations logically segmented by function, project teams, or application without regard to the physical location of the users. Due to this the number of broadcast domains increase.

Incorrect Answers:
B: The broadcast domains actually increase not decrease.
C: There is no direct effect on collision domains.
D: There is no direct effect on collision domains.
E: Virtual interfaces can be shut down.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 179-184.

QUESTION NO: 219
Gail is having trouble configuring Frame Relay subinterfaces. You decide to send Gail an email explaining some of the installation procedures. Which of the following should you include in your email? (Choose three)

A. Each subinterface is configured either multi point or point to point.
B. Any network address must be removed from the physical interface.

C. The configuration of subinterfaces is done in router Config-(if)# mode.
D. Frame relay encapsulation must be configured on each sub interface.

Answer: A, B, C
Explanation: When configuring Frame Relay at the sub interface there are a number of points that you be kept in mind. To configure subinterfaces on a physical interface, do the following:

1. Select the interface you want to create subinterfaces on, enter interface configuration mode, (config-if)#.
2. It is recommended that you remove any network layer address assigned to the physical interface and assign the network layer address to the subinterface.
3. Configure Frame Relay encapsulation on the physical interface.
4. Identify the subinterface as either multipoint or point-to-point.

Incorrect Answers:
D: The encapsulation type must be done on the physical interface.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

QUESTION NO: 220
You are using setup mode to configure your router for the first time. What does the square bracket indicate in setup mode?

A. Current or default settings.
B. Hard coded values that cannot be modified.
C. Values entered by the administrator but not saved.
D. Values that must be returned to NVRAM before becoming enabled.

Answer: A
Explanation: When in the setup dialog box the default/current settings are in the square brackets.

Incorrect Answers:
B, C, and D: The square brackets represent current or default settings.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 85.

QUESTION NO: 221
You have just purchased a router from an online auction and this router had an existing IOS installed on it. You would like to make a backup copy of this IOS. Which one of the following commands will allow you to do this?

A. Copy Flash TFTP
B. Save Copy TFTP
C. Write Backup TFTP
D. Write Backup (server-name)
E. Copy backup 2 (server-name)

Answer: A
Explanation: The proper command to save the IOS image is copy flash tftp. This will copy the IOS onto a tftp server.

Incorrect Answers:
B: There is no save command. With Cisco to save something you most often copy it.
C and D: There is no Write command.
E: This is not a valid command combination.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 138-139.

QUESTION NO: 222
You are concerned about security on your network. You have a router that is connected to the Internet and do not want your RIP updates being sent out this interface that is connected to the Internet. Which command will prevent these updates from going out the interface without using access-lists?

A. Passive route.
B. Default routes.
C. Passive interface.
D. Route update filtering.

Answer: C
Explanation: The passive interface command will prevent the sending of RIP updates.

Incorrect Answers:
A: Passive routes as used with IGRP and not RIP.
B: Default/static routes will not prevent RIP updates.
D: Filtering is most often achieved on a router with an access list.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 254-282.

QUESTION NO: 223
Which of the following correctly describe IP addressing? (Choose Two)

A. IP multicast addresses start with 240.
B. A host portion of all 1's indicates a network broadcast.
C. The value of zero (0) in the host portion means "all hosts" on the network.
D. IP addresses are four octets long and contain a network portion and a host portion.

Answer: B, D
Explanation: IP addresses contain 4 octets. IP addresses contain two parts: one to identify the network and the other to determine the host. Which octet identifies what is dependant on the class of the IP address. When a message is to be flooded the IP address contains all 1s.

Incorrect Answers:
A: Multicast broadcasts of range of IPs is 224-239t. 240 begins the range of reserved (Class E) addresses.
C: To flood a message to all host of a network, the IP address would contain the network identification and then all 1s (represented by 255) in the host portion of an IP.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 222-232.

QUESTION NO: 224
You are performing password recovery on a router and you have already adjusted the configuration register and are now in the router that appears to have no configuration. You notice the old configuration is still saved in NVRAM and you now want to copy the old configuration that is in NVRAM to the current configuration that is in RAM. Which command retrieves the configuration file from NVRAM?

A. Config NVRAM.
B. Copy NVRAM running-config.
C. Copy startup-config running-config.
D. Copy running-config startup-config.

Answer: C
Explanation: To copy the IOS image in the NVRAM to the RAM the copy startup-config running-config command is used.

Incorrect Answers:
A: This is not a valid command combination.
B: This is not a valid command combination.
D: This actually copies the IOS image from the RAM to the NVRAM which is the exact opposite of what the question asked.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 133.

QUESTION NO: 225
Which of the following are facts about Reverse Address Resolution Protocol? (Choose two.)

A. It generates parameter problem messages.
B. It maps IP addresses to Ethernet addresses.
C. It maps Ethernet addresses to IP addresses.
D. It is implemented directly on top of the data link layer.

Answer: C, D
Explanation: Reverse Address Resolution Protocol (RARP) is another protocol defined at the IP layer. RARP is used by workstations that do not know their own IP address when they come up. RARP allows workstations to send out a request for its own IP by sending its own Layer 2 MAC address to a waiting RARP server. ARP and RARP are implemented directly on top of the data link layer.

Incorrect Answers:
A: RARP determine IPs based on MAC addresses.
B: ARP maps IP addresses to MAC addresses.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 218-220.

QUESTION NO: 226
Your company has decided to use a (BRI) connection between the Florida office and the Georgia office. You would like to configure dial on demand routing (DDR) on this connection. Which of the following commands are required to setup DDR? (Choose three)

A. Define static routes.
B. Configure the dialer information.
C. Specify interesting traffic that can enable the link.
D. Define DDR password to exchange when the link comes up.

Answer: A, B, C
Explanation:
To configure standard DDR, the following steps are required:

1. Define static routes – What route do I take to get to the destination?
2. Specify interesting traffic – What traffic type should enable the link?

3. Configure the dialer information – What number do I call to get to the next hop router, and what service parameters do I use to call?

Incorrect Answers:
D: Defining a DDR password is not required.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 400-403.

QUESTION NO: 227
For security reasons you would like a system message displayed when logging into a router. Which of the following allows you to create this message?

A. Banner MOTD
B. Message MOTD
C. Banner Message
D. Message Banner

Answer: A
Explanation: In order for a user to see a message when the log into a router a message of the day will need to be employed. The command to do this is banner motd.

Incorrect Answers:
B: The command is banner not message.
C: The proper parameter is motd not message.
D: This is an invalid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 101-102.

QUESTION NO: 228
You have just configured DDR (Dial on Demand Routing) and would like to test the link. What can you use to bring up the connection?

A. Increase the idle timeout parameter.
B. Send interesting traffic across the link.
C. Reboot one of the Integrated Services Digital Network (ISDN) routers.
D. Reset the DDR Integrated Services Digital Network (ISDN) router statistics to zero.

Answer: B
Explanation:

Of the options provided above the best way to determine if there is connectivity on a dial-on-demand routing link is to send interesting across the link. If there is connectivity a link will be initiated and established to send the interesting traffic. If there is no connectivity then the link will not be established.

Incorrect Answers:
A: Increasing the idle time parameter will only result in increasing the idle time.
C: Rebooting the router will only result in the router going through its post.
D: This action will not confirm whether a DDR has connectivity or not.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 397-407.

QUESTION NO: 229
You need to create a subinterface so that you can support different Frame-Relay encapsulations. Which command specifies a second subinterface on serial interface zero?

A. Interface s 0.2 point - to point.
B. Interface 2 s 0 point to point.
C. Sub interface 2 s 0 point to point.
D. Interface 0 sub 2 point to point.
E. Interface s 0.1 point to point sub 2.

Answer: A
Explanation: The proper syntax for configuring a second subinterface is interface 0.2 point-to-point. Option A is the closest to this command. The syntax after the command interface is serial interface number (0 in this case).subinterface number (2 in this case) and this followed by the either multipoint or point-to-point.

Incorrect Answers:
B: Remember that the syntax is suppose to be number.subinterface number and that there is suppose to be two hyphens in point -to-point.
C: The command is interface not subinterface.
D: The two numbers are broken by a period and not the word sub.
E: This is not the proper syntax. Remember the interface and subinterface are identified by number.subintreface number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

QUESTION NO: 230
You issued the show spantree e0/1 command which part of the output indicates that virtual LAN1 (VLAN1) is functioning properly?

A. Root port is fast Ethernet 0/26.
B. Port Ethernet 0/1 of VLAN is forwarding.
C. Designated port is Ethernet 0/1, path cost 10.
D. Designated root has priority 0 address 00D0.588F.B600.
E. VLAN is executing the IEEE compatible spanning tree protocol.

Answer: E
Explanation: To determine if the VLAN is functioning properly on will need to examine the first line of the output. That is, VLAN is executing the IEEE compatible spanning tree protocol.

Incorrect Answers:
A: This line indicates what the switch thinks is the root port.
B: This line indicates which port is forwarding.
C: This line indicates the designated port and its associated cost.
D: This line indicated the MAC address of the designated root.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 199-200.

Q.231
Frame Relay uses _____ to define the rate, in bits per second , that the Frame Relay switch agrees to transfer data?

A. Clock rate (CR).
B. Committed Information Rate (CIR)
C. Local management interface (LMI)
D. Data-link connection identifier (DLCI)
E. Committed Rate Measurement Interval (CRMI)

Answer: B
Explanation: CIR is the rate, in bits per second, at which the service provider states that data will be transferred.

Incorrect Answers:
A: Clock rate is the transmission medium speed, which is determined by modem clocking.
C: LMI is a signaling standard between the router device and the Frame Rekay switch that is responsible for managing the connection and maintaining the status between the devices.
D: DLCI is addressing used to identify virtual circuits.
E: This is the sampling period used in controlling CIR, but is not the rate itself.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 413-414.

QUESTION NO: 232
You are trying to determine if the connection between your Router and the Frame-Relay switch is good. Which show command should you use to view Frame Relay local management interface (LMI) traffic statistics?

A. Show lmi.
B. Show ip route.
C. Show interface.
D. Show statistics.
E. Show frame-relay lmi.

Answer: E
Explanation: The show frame-relay lmi command displays lmi statistics. An example of one of these statistics is the number of status messages sent between the local router and the Frame Relay switch.

Incorrect Answers:
A: Show lmi is not a valid command.
B: Show ip route command displays the contents of the IP routing table.
C: Show interface command displays a serial interface configuration
D: Show statistics is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 422-423, 280, and 106.

QUESTION NO: 233
Which of the following is a Layer 2 device?

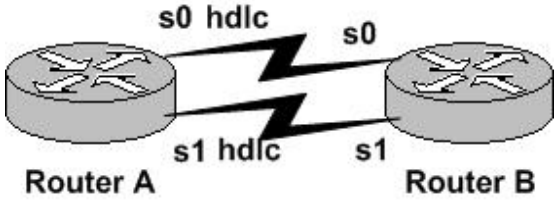
A. Hub
B. Router
C. Switch
D. Repeater

Answer: C
Explanation: Switches and Bridges run on Layer 2.

Incorrect Answers:
A and D: They are Layer 1 – Physical Layer devices
B: Routers are layer 3 device.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 14-24.

QUESTION NO: 234



You are configuring the IPX encapsulation between RouterA and RouterB. This connection will be using the S0/0 port on RouterA to S0/0 on RouterB. Which encapsulation type should be used for the S0/0 port of RouterB?

A. SAP
B. HDLC
C. ARP
D. NOVELLETHER

Answer: B
Explanation: RouterA S0/0 connects to RouterB S0/0. RouterA S0/0 uses HDLC, and BOTH sides must run the same protocol in order to communicate (it is like talking the same language; you can't have one side English and the other Side French).

So the correct answer is HDLC.

Incorrect answers:
A, B and C: The two routers must have the same encapsulation type to communicate properly thus these encapsulation types could not be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 368-373.

QUESTION NO: 235
Our network uses both IPX and IP addressing and we have a direct connection to the Internet using IP. We would like to allow our IPX traffic to also be able to go across this internet to a remote router on the other side. Which term below will allow us to encapsulation IPX inside of IP so that we can send it across the Internet?

A. Bridging.
B. Tunneling.
C. Data-link control.

D. Generic routing.
E. Packet switching.

Answer: B
Explanation: Tunneling is the process whereby a router encapsulates one Layer 3 protocol inside another protocol (typically IP) for transport across a network to another router. The receiving router de-encapsulates the packet, leaving the original packet.

Incorrect Answers:
A: Bridging occurs within the same collision domain.
C: Data link control has nothing to do within communication between networks.
D: Generic routing is not the Cisco term used for communication between networks.
E: Packet switching refers to WAN communication.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 12-14.

QUESTION NO: 236
You have decided to remove RIP routing on your router and install IGRP. You have issued the command no router rip on all of your routers. You now need to install IGRP on your routers. Which commands should you use to enable IGRP routing?

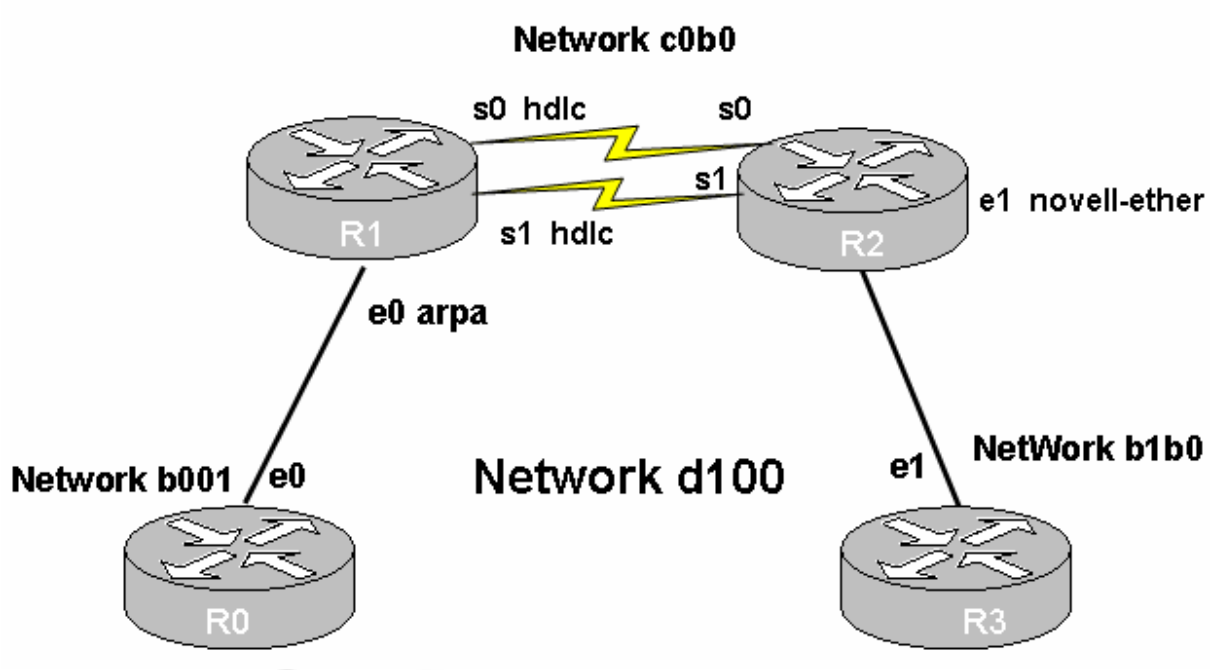
A. router igrp 100
network 192.168.1.0
network 10.0.0.0
B. router igrp 100
network 192.168.1.0
network 10.2.0.0
C. router igrp 100
network 192.168.1.0 192.168.1.1
network 10.2.0.0 10.2.1.1
D. router igrp 100
network 192.168.1.0 255.255.255.0
network 10.2.0.0 255.255.0.0

Answer: A
Explanation: To enable IGRP you use the router igrp and network commands. Please note an autonomous system number must follow the router igrp command and a valid network number must follow the network command. For RIP and IGRP network numbers must be a major class network number and does include neither subnet numbers nor individual addresses.

Incorrect Answers:
B: The number 10.2.0.0 is the problem for this option
C: Each network identified must have its own network command.
D: This is not correct, as there is no need to use the subnet mask for the networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 277, 285-286.

QUESTION NO: 237
Exhibit



You want to create a sub interface on serial 0 on Router R2. Which of the following is the correct syntax to create this sub interface 2?

A. Interface s0.2 point-to-point.
B. Interface 2s0 point-to-point.
C. Subinterface 2s 0 point-to-point.
D. Interface s0 sub2 point-to-point.
E. Interface s0.1 point-to-point sub2.

Answer: A
Explanation: The proper syntax for configuring a second subinterface is interface 0.2 point-to-point. Option A is the closest to this command. The syntax after the command interface is serial interface number (0 in this case).subinterface number (2 in this case) and this followed by the either multipoint or point-to-point.

Incorrect Answers:
B: Remember that the syntax is suppose to be number.subinterface number and that there is suppose to be two hyphens in point -to-point.
C: The command is interface not subinterface.
D: The two numbers are broken by a period and not the word sub.
E: This is not the proper syntax. Remember the interface and subinterface are identified by number.subintreface number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

QUESTION NO: 238
Using a Packet analyzer you discover the following address 238.255.255.255. What is the protocol and what is the purpose of the address?

A. IPX; a SAP broadcast.
B. IP; a multicast address.
C. IP; a reserved address.
D. IP; a directed broadcast.
E. IPX; a flooded broadcast.

Answer: B
Explanation: Class D addresses (multicast addresses) include the following range of network numbers: 224.0.0.0 to 239.255.255.255. 238.255.255.255 is within this range.

Incorrect Answers:
A: This is not an IPX address.
C: Class E addresses (research addresses and sometimes called reserved) include the following range of network numbers: 240.0.0.0 to 247.255.255.255.
D: An IP directed broadcast would include the first 3 octets of the IP address and 255 would replace the fourth octet.
F: This is not an IPX address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 222 – 224.

QUESTION NO: 239
Your company is using Novell v4.1. You need to display the Novel IPX address on a router. Which one of the following commands will allow you to display this address?

A. Show IPX addresses.
B. Show IPX interface.
C. IPX network <number>
D. Display IPX addresses
E. Show IPX routing details

Answer: B
Explanation:
The show ipx interface command shows the status of the IPS interface and IPS parameters configured on each interface. This includes the IPX address.

Incorrect Answers:
A: There is no such command as show ipx addresses.
C: The ipx network command is used to enable IPX routing on a particular interface. The <number> parameter is used to identify the network that IPX is enabled on.
D: Whenever you want to display something on a Cisco interface you use a show command. There is no such command as display ipx addresses.
E: There is no such command as show ipx routing details. To show the contents of a routing table you would use the show ipx route command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 345-347.

QUESTION NO: 240
Which statement should you use to deny telnet access only from Network 210.93.105.0 to Network 223.8.151.0?

A. Access-list one deny 210.93.105.0.0.0.0.0 any eq 23 access-list one permit any.
B. Access-list 100 deny tcp 210.93.105.0 0.0.0.255 223.8.151.0 0.0.0.255 eq 23
C. Access-list 100 deny ip 223.8.151.0 0.0.0.255 any eq 23
Access-list 100 permit ip any any
D. Access-list 100 deny tcp 210.93.105.0 0.0.0.255 223.8.151.0 0.0.0.255 eq telnet
Access-list 100 permit ip any any

Answer: D
Explanation: Great care must be taken whenever an access list is configure as there is an assumption of deny all when they do not match the access list. The proper command for configuring an extended access to deny telnet traffic is: access-list 100 deny tcp source address destination address eq telnet. When configured this way the access list will deny ftp traffic and permit all other.

Incorrect Answers:

A: The entire statement has syntax problems. You use a number, not a word (one) for the access list, and the access list for this problem needs to be an extended address list in the range of 100-199.
B: This access list will deny access, but then any non-match falls through and will be denied.
C: This access list denies access from 223.8.151.0 to anywhere else – this is not what the problem asked. 223.8.151.0 is supposed to be the destination, not the source.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 318-320.

QUESTION NO: 241
Given the configuration example:

interface ethernet0
ipx network 100
ipx access-group 800 out
interface ethernet1
ipx network 200
interface ethernet2
ipx network 300
access-list 800 permit 200 100

Which two actions result from implementing this configuration? (Choose two.)

A. IPX network 400 will not receive any traffic.
B. Traffic from network 200 for network 100 will be forwarded out e0.
C. Traffic from network 200 for network 200 will be forwarded out e0.
D. Traffic from network 200, destined for network 100, will be forwarded out e2.
E. The access list is applied to an outgoing interface and filters outbound traffic.

Answer: B, E
Explanation:
The key commands for this question are "ipx access-group 800 out" and "access-list 800 permit 200 100". The first command identifies the access list as an outbound access list. In the command "access-list 800 permit 200 100" the first network, 200, is source network number and the second network, 100, is the destination network.

Incorrect Answers:
A: There is no reference to network 400 in this question.
C: Network 200 would not need the access list to send traffic within itself.
D: This traffic will be forwarded to interface e0, not enterface e2..

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 353-354.

QUESTION NO: 242
You are trying to convince your boss to switch from a hub to a Cisco switch. You have explained to your boss that you will have fewer collisions with the Cisco switch because you will be using full-duplex. Your boss responds with how many collisions are caused by transmitting and receiving frames simultaneously in full-duplex mode. What should your response be?

A. One
B. Two
C. None
D. Several

Answer: C
Explanation: Full Duplex requires one and only one device to be hooked up to a switch port, and each switch port is a separate collision domain. Since there is no contention (the node has exclusive control of the segment) there are no collisions.

A, B and D: It is impossible for collision to occur within a full duplex network.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 163-165.

QUESTION NO: 243
Using a class C address 192.168.10.X what would the subnet mask be if we needed two subnets with a maximum of 35 hosts on each subnet?

A. 255.255.255.192
B. 255.255.255.224
C. 255.255.255.240
D. 255.255.255.248

Answer: A
Explanation: For the networks, we need 2 bits. We must really accommodate for networks, because when we subnet the formula is 2**n –2. For 35 hosts, we need a minimum of 37 hosts for the same reason, 2**n –2. We round 37 up to the next power of 2, which is 64, and we need 6 bits for the host. We use 2+6=8 bits.

When we look at the bit locations, the first two bits of the fourth octet will be 128+64=192. Thus the subnet mask will be 255.255.255.192. Since there is no room to adjust the allocation, everything fits fully into 8 bits, none of the other subnet masks will provide this combination.

Incorrect Answers:
B, C and D: These subnet masks provide too many networks and not enough host addresses.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 225-228 and 236.

QUESTION NO: 244
You as the administrator issue the shutdown command on Serial 1. You later view this interface using the show interface Serial 1 command. How will this interface be displayed?

A. Serial 1 is up, line protocol is up.
B. Serial 1 is up, line protocol is down.
C. Serial 1 is down, line protocol is down.
D. Serial 1 is administratively down, the line protocol is down.

Answer: D
Explanation: The shutdown command administratively disables an interface. The result is the interface will be down as will the line protocol. It will end calls in progress.

Incorrect Answers:
A: The statement shows that the interface and the protocols are both up. This would not be the case if the shutdown command were used.
B: This statement shows that the line is up but the line protocol is down.
C: The line would be administratively down if the shutdown command had been used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 107, 406-407.

QUESTION NO: 245
Company ABC was supplied the following Class C IP address 195.20.10.0. You have been hired as the network administrator of Company ABC. Your first task is two split of the address for the different buildings that Company ABC owns and operates. Which of the following are the most important factors when subnetting the addresses? (Choose two)

A. Determine the number of separate networks required.
B. Determine how many devices will require DHCP addressing.
C. Determine the maximum number of host that will be on each subnet.
D. Determine the minimum number of host that will be on each subnet.
E. Determine which router will be the IP default gateway for each subnet.

Answer: A, C
Explanation: Whenever a network is going to be divided by a router a number of factors needs to be considered when selecting a subnet mask. Two factors that need to be considered is the number of networks that you require and the maximum number of host each subnet will require.

Incorrect Answers:
B: DHCP addressing is not relevant in the subnet mask design.
D: Since the number of hosts has to satisfy ALL of the subnets, we must accommodate the subnet with the highest number of hosts, so we need the maximums of each, and then take the largest of all the maximums.
E: This task may need to be done but this task has nothing to do with designing the new subnet mask.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 235-237.

QUESTION NO: 246
What are two benefits of segmenting a network with a later 2 bridge? (Choose two)

A. To reduce collisions.
B. To increase collisions.
C. To add collision domains.
D. To reduce collision domains.
E. To have more broadcast domains.

Answer: A, C
Explanation: When you segment a network with a bridge you are reducing the number of collisions by creating another collision domain.

Incorrect Answers:
B: A bridge decreases collisions, not increases collisions.
D: Collision domains are increased, not decreased.
E: There is still one and only one broadcast domain.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 21-24.

QUESTION NO: 247
Which of the following can reset a hold-down timer? (Choose three.)

A. When the hold-down timer expires.
B. When infinity is finally defined as some maximum number.
C. When the router exchanges update summaries at area borders.
D. When the router detect faulty LSPs propagating through the internetwork.

E. When another update is received indicating a new route with a better metric.
F. When another update is received indicating the original route to the network has been restored.
G. When the router receives a processing task proportional to the number of links in the internetwork.

Answer: A, E, F
Explanation: Holddown timers work as follows:

1. When a router receives an update from a neighbor indicating that a previously accessible network is now in accessible, the router marks the route as inaccessible and starts the holddown timer.
2. If an update arrives from the neighboring router with a better metric than originally recorded for the network, the router marks the network as accessible and removes the holddown timer.
3. If at any time before the holddown timer expires an update is received from a different neighboring router with a poorer metric, the update is ignored. Ignoring an update with a poorer metric when the holddown is in effect allows more time for the knowledge to change to propagate through the network.
4. During the holddown period, routes appear in the routing table as "possible down".

Routers remain in holddown until one of the following events occurs: the holddown expires; another update is received indicating a new route with a better metric; and a flush timer, which is the time a route would be held before being removed, removes the route from the routing table.

I**ncorrect answers:**
B, C, D and G: None of these situations will remove a holddown timer.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 269-273.

QUESTION NO: 248
You are troubleshooting a problem between RouterA and RouterB from RouterA. Which command will successfully ping the ip address of RouterB?

A. RouterA>ping 131.5.5.0
B. RouterA# ping 131.5.5.30
C. RouterA> ping 131.5.5.256
D. RouterA# ping 131.5.5.255

Answer: B
Explanation: In order to ping an individual IP address you must be in the privileged EXEC mode.

Incorrect Answers:
A: To ping you must be in the privileged EXEC mode not the user EXEC mode.
C: To ping you must be in the privileged EXEC mode not the user EXEC mode.
D: This is not a valid host IP individual IP address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 69 and 123-124.

QUESTION NO: 249
In comparing TCP with UDP what is an advantage of using a connectionless protocol such as UDP?

A. Packet acknowledgement may reduce overhead traffic.
B. Loss or duplication of data packets is less likely to occur.
C. Packets are not acknowledged which reduces overhead traffic.
D. The application relies on the transport layer for sequencing of the data packets.

Answer: C
Explanation: Connectionless protocols have many advantages. One of the main advantages is that there is a reduction in overhead traffic, as acknowledgments are not sent. This does, though, increase the likelihood of a lost packet.

Incorrect Answers:
A: There is no packet acknowledgement in UDP.
B: This is the opposite, UDP does not guarantee against packet loss.
D: UDP does not expect packet ordering.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 29-30.

QUESTION NO: 250
You are suggesting that your company uses IP RIP as its routing protocol. Your boss would like you to list some facts about IP RIP before he approves your request. Which of the following statements about IP RIP are true? (Choose two.)

A. It limits hop counts to 31.
B. It is a link-state routing protocol.
C. It uses autonomous system numbers.
D. It is capable of load sharing over multiple paths.
E. It uses bandwidth as the metric for path selection.
F. It broadcasts updates every 30 seconds by defaults

Answer: D, F
Explanation: Key characteristics of RIP include the following: it is a distance vector protocol, hop count is used as the metric for path selection, maximum allowable hop count is 15, broadcast routing updates every 30 seconds, RIP can be load balanced over as many as 6 equal cost paths, RIP 1 requires a major classful network number to advertise and RIP 2 use VLSMs.

Incorrect answers:
A: RIP's maximum allowable hop count is 15.
B: RIP is a distance vector protocol.
C: It uses network numbers/VLSMs.
E: Hop count is used as the metric for path selection.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 278.

QUESTION NO: 251
Which of the following troubleshooting tools use the protocol ICMP? (Choose two)

A. Ping
B. Telnet
C. Configure
D. Trace route
E. Show commands
F. Standard access list

Answer: A, D
Explanation: The two protocol tools that use ICMP messaged to perform their function are ping and trace route.

Incorrect Answers:
B: Telnet uses TCP.
C: Configure is not a protocol tool.
E: They are not part of ICMP, nor do they use ICMP.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 217-218.

QUESTION NO: 252
Which one of the following is a layer two broadcast?

A. The IP subnet used is 255.255.255.0
B. The IP address used is 255.255.255.255
C. The MAC address used is 00-00-00-00-00-00
D. The MAC address used is FF-FF-FF-FF-FF-FF.

Answer: D
Explanation: The MAC address for a broadcast is FF-FF-FF-FF-FF-FF.

Incorrect Answers:
A and B: These are IP addresses and 802.3 uses MAC addresses.
C: This is the address used for a multicast.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 149-152.

QUESTION NO: 253
If I have VLAN 3, and VLAN 4 configured on a Cisco Switch, and I would like to have pc's on VLAN 3 communicate with pc's on VLAN 4. Which of the following will allow this inter-VLAN communication to take place?

A. It takes place through any Cisco router.
B. It takes place through a Cisco router than can run ISL.
C. It takes place through a router, but this disables all the router's Security and filtering functionality for the VLANs.
D. For nonroutable protocols, (e.g., NetBEUI) the router provides communications between VLAN domains.
E. Inter-VLAN communications is not possible because each VLAN is a separate broadcast domain.

Answer: B
Explanation: In a switched environment, packets are switched only between ports designated to be within the same "broadcast domain". VLANs perform network portioning and traffic separation at Layer 2. So, inter-VLAN communication cannot occur without a Layer 3 device such as a router, because network layer (Layer 3) devices are responsible for communicating between multiple broadcast domains. Note that, at Layer 2, an interface uses ISL to communicate with a switch.

Incorrect Answers:
A: The router requires ISL.
C: The router does not change the security settings.
D: The router will not route a nonroutable protocol into the VLAN.
E: Without a router inter-VLAN communication is impossible.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 241-244.

QUESTION NO: 254
John was having problems connecting to the company's game server by the FQDN. John then used the ping command and was successful in pinging the game server. If a packet analyzer were used while John was using the ping command what would the two most common request/reply pair with ICMP messages be? (Choose two)

A. Echo reply
B. Echo request
C. Source quench
D. Fragment offset
E. Information redirect
F. Destination reachable
G. Echo control message

Answer: A and B.
Explanation: The most common form of these messages are pings, ICMP echo request, and ICMP echo replies.

Incorrect Answers:
C, D, E, F, and G: These are not types of ICMP messages.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 217-219.

QUESTION NO: 255
An IPX address consists of which of the following?

A. Network number; IP address.
B. MAC address; node number.
C. Network number; MAC address.
D. Network number; subnet number.

Answer: C
Explanation:
An IPX address is composed of two parts: the network number and the node number. For IPX the node number is usually obtain from MAC address of the network interface.

Incorrect Answers:
A: An ipx address does contain the network number but it does not contain an IP address.
B: The MAC address and node number are most often the same thing.
D: The ipx address does not contain the subnet number.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 332-333.

QUESTION NO: 256
Which of the following correctly compares Fast Ethernet to Ethernet? (Choose four.)

A. Fast Ethernet uses the Same Maximum Transmission Unit (MTU).
B. Fast Ethernet is based on an extension to the IEEE 802.3 specification.
C. Fast Ethernet uses the same Media Access control (MAC mechanisms).
D. Fast Ethernet preserves the frame format that is used by Ethernet.
E. Fast Ethernet offers a speed increase one hundred times that of the Ethernet.

Answer: A, B, C, and D.
Explanation: Fast Ethernet shares a great deal of similarities with Ethernet. These similarities are the same MTU, same MAC mechanism and frame format. Fast Ethernet is based on IEEE 802.3u, which is an extension to IEEE 802.3.

Incorrect Answers:
E: Its speed is10 times faster, not 100 times.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 44-45.

QUESTION NO: 257
Which two are facts about integrated services digital network (ISDN)?
(Choose two)

A. ISDN provides only data only capability.
B. ISDN provides an integrated voice/data capability.
C. The ISDN standards define the hardware and call setup schemes for end-to-end digital connectivity.
D. Users receive more bandwidth on WANs with a leased line of 56kbps than with multiple b channels.

Answer: B, C
Explanation:
ISDN stands for Integrated Services Digital Network. ISDN refers to a collection of standards that define a digital architecture that provides an intergraded voice/data capability to customers' premises facility. The ISDN standards define the hardware and call setup schemes for end-to-end digital connectivity.

Incorrect Answers:
A: ISDN provides for voice and data capability.

D: BRI offers a total of 144 kbps and ISDN PRI offers even more.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 390.

QUESTION NO: 258
You need to install RIP as the routing protocol of your network. Which of the following shows the correct prompt and command to install RIP as the routing protocol? (Choose one)

A. Router# rip.
B. Router rip.
C. Router (Config)# rip.
D. Router (Config)# router rip.

Answer: D
Explanation: In order to configure RIP as the routing protocol you need to ensure that you are in the route configuration mode and that you use the command router rip.

A: This is both the wrong mode and command.
B: This is both the wrong mode and command.
C: This is the proper mode but the wrong command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 277-279.

QUESTION NO: 259
The TCP/IP model was created to provide standards used in internetworking. Which of the following statements are true about this model? (Choose three)

A. IP provides connection less service and routing capabilities.
B. ARP enables devices to locate the IP address of local devices.
C. UDP provides simple connection less service without windowing or acknowledgements.
D. ICMP provides connection oriented management data to routers and layer three switches.
E. TCP enables devices to send large quantities of data using switching in a connection-oriented manner.

Answer: A, C, E
Explanation: The TCP/IP protocol stack is very similar to the OSI model protocol stack. With TCP/IP connection orientated and connection less communication is possible. Both IP and UDP are both connectionless. TCP is a connection-orientated protocol.

Incorrect Answers:

B: RARP and not ARP provide this functionality.
D: ICMP is connection less.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 215-218.

QUESTION NO: 260
Which command is used to set the bandwidth metric of a Frame Relay connection?

A. Router(Config)# clock rate 56
B. Router(Config-if)# bandwidth 56
C. Router(Config)# bandwidth 56000
D. Router(Config-if)# clock rate 56000

Answer: B
Explanation: The bandwidth command overrides the default bandwidth. The bandwidth has no effect on the actual speed of the line. Instead, it is used to compute routing metrics ad the load of the link. Bandwidth is expressed in Kilobits. It is specified during interface configuration.

Incorrect Answers:
A: The clock rate command is used to set the bandwidth on DCE cable not a Frame Relay connection that must not be abbreviated plus it must be used in the interface configuration mode.
C: To change bandwidth of an interface you must be in the interface configuration mode and the rate must be expressed kilobits per second.
D: The clock rate command is used to set the bandwidth on DCE cable not a Frame Relay connection.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 104-106.

QUESTION NO: 261
Computer A is trying to ping Computer B on the same Ethernet LAN using the IP address. A request is sent out of Computer A as a broadcast looking for the MAC address of Computer B. What is the protocol that sent out this broadcast to find Computer B's MAC address?

A. It uses a Proxy ARP.
B. It uses ARP requests.
C. It uses RARP requests.
D. It uses router look up table.

Answer: B
Explanation: Address Resolution Protocol is used to resolve or map a known destination IP address to a MAC sublayer address to allow communication.

Incorrect Answers:
A: Proxy ARP is most often used with hosts on separate subnets.
C: Reverse ARP is used to resolve an IP address on a given MAC address.
D: A router's table is not used for this.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 218-220.

QUESTION NO: 262
Which of the following can be used as methods that can be used to simplified network management by implementing (VLANs)? (Choose four)

A. VLANs allow you to implement multiple layers switching easily.
B. VLAN can group several broadcasts domains into multiple logical subnets.
C. It is no longer necessary to install cables to move a user from a new network to another.
D. Network adds, moves and changes are achieved by configuring a port into a VLAN.
E. A group of users needing high security can be put into a VLAN so that no users outside the VLANs can communicate with them.
F. As a logical grouping of users, VLANs can be considered independent from their physical or geographic locations.

Answer: B, D, E, F
Explanation: The introduction of VLANs into a network has a number of benefits. The benefits include: security, segmentation and flexibility. VLANs allow you to group users into a common broadcast domain regardless or their physical location in the internetwork. VLANs greater flexibility allows user to moved easily, changes to the network can be as simple as configuring a port and security can be increased.
B: VLAN can group several broadcast domains into multiple logical subnets is a correct choice.

Incorrect Answers:
A: VLANs add complexity to the switch configurations.
C: You still need to run cables to connect users to network.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 179-184.
Cisco Guide by Todd Lammle:

QUESTION NO: 263
Which of the following are modes used for frame switching on Cisco switches? (Choose two)

A. Full duplex
B. Half duplex
C. CSMA/CD

D. Cut through
E. Fragmentation
F. Store and forward

Answer: D, F
Explanation: There are 3 primary operating modes that are used for frame switching. These modes are sore-and-forward, cut-through and fragment free. When store-and-forward is used the switch must receive the whole frame before it can be forwarded. During a cut-through operation, the switch forwards the frame once it receives the Destination Address. Finally, the fragment-free mode reads the first 64 bytes before forwarding the frame.

Incorrect Answers:
A and B: These are transmission modes of whether the transmission is done one way at at time (half Duplex) or simultaneous two-way (Full Duplex).
C: This is a physical transmission medium, typically used in Ethernet LANs.
E: There is a fragment-free mode not a fragment mode.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.

QUESTION NO: 264
When troubleshooting Frame Relay peer problems between two routers which two commands should you use to show the routers that are reachable? (Choose two)

A. Show IP map.
B. Show IP route.
C. Show frame-relay map.
D. Debug frame-relay map.

Answer: B, C
Explanation: The show ip route command displays the contents of the IP routing table. The routing table includes entries for all known networks and subnetworks plus it displays how the information was **learned**. The show frame-relay map command show the Frame Relay DLCI-to-IP address mappings. When the results of these two commands are considered together will provide the data needed to determine routing information.

Incorrect Answers:
A and D: Neither are valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 280-281, 431-432.

QUESTION NO: 265
ISDN is sometimes used in locations that do not offer support for DSL or Cable Modems connections. Your choices may be Analog modems or an ISDN connection in those remote locations. ISDN has benefits over regular dial up modem connections. Which of the following are examples of these benefits? (Choose three)

A. PVCs are faster and more reliable.
B. No specialized equipment is required.
C. Data transfer is faster than typical modems.
D. Call setup is faster than with standard telephone service.
E. It carries many types of data traffic such as voice, video, and data.

Answer: C, D, E
Explanation:
Brining digital connectivity via ISDN to a site has many benefits. These benefits include:

- The capability to carry a variety of user-traffic feeds. ISDN provides access to all-digital facilities for videos, voice, packet-switched data, and enriched telephone network services.
- Much faster call setup than modem connections. ISDN can be set up in less than a second.
- Much faster data transfer for ISDN (64 kbps) than modems (28.8 to 56 kbps).

Incorrect Answers:
A: PVCs are used in Frame Relay connections and not in ISDN.
B: ISDN does need specialized equipment such as TE1, NT2, NT1, TE2, and TAs.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 387-393.

QUESTION NO: 266
You would like to configure IP RIP on your Cisco Router. Which of the following steps below are required to install IP RIP? (Choose two)

A. Specify the routing protocol.
B. Configure static Rip routes.
C. Specify directly connected subnets.
D. Specify directly connected networks.

Answer: A, D
Explanation: In enable a router with RIP it takes two basic steps: select the routing protocol and identify the networks that the router is directly connected to. These steps are achieved with the commands router rip and network.

Incorrect Answers:
B: There is no such thing as a static RIP route.
C: With RIP you specify the directly connected networks, not the directly subnets.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 278-279.

QUESTION NO: 267
Billy was hired to setup Frame Relay subinterfaces on a point-point connection between two routers. Which of the following should Billy take into consideration when setting up this connection? (Choose Two)

A. Configure the router to forward all broadcast packets.
B. Remove any network address assigned to the physical interface.
C. Configure the local data-link connection identifier for the subinterfaces.
D. Partition the total committed information rate available among the subinterfaces.

Answer: B, C
Explanation: There are a number of things that must be done to configure a subinterface. Two of these steps are: the removal of the network address from the physical interface and assign that address to the subinterface and configure the DLCI for the subinterface.

Incorrect Answers:
A: This is not a frame-relay task and in fact if it was done loops would most likely occur.
D: This is not done during frame-relay subinterface creation.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 428-429.

QUESTION NO: 268
The Internet Control Message Protocol (ICMP) is implemented by all TCP/IP hosts. Which of the following demonstrate the functions of the ICMP Protocol? (Choose Two)

A. To map IP addresses to Ethernet addresses.
B. To map common names to network addresses.
C. To forward SNMP alerts to management consoles.
D. To generate an echo reply in response to a ping test.
E. To send a host or post unreachable message from a router to the source of an undeliverable packet.

Answer: D, E
Explanation: ICMP has a great many functions that it can perform. Two of these functions are: destination unreachable messages and echo reply messages.

Incorrect Answers:
A: This is done by ARP & RARP protocols.
B: This is done by Domain Name Services (DNS).
C: A SNMP agent does this.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 217-218.

QUESTION NO: 269
In today's networks which encapsulation methods are most commonly used (ISDN)?

A. IP and IPX
B. IP and PPP
C. PPP and SDLC
D. PPP and HDLC

Answer: D
Explanation: There are a number of WAN encapsulation types available. The two most commonly used are Point-to-Point Protocol (PPP) and Cisco High-Level Data Link Control (HDLC). The reason HDLC is employed so much is that it is the default encapsulation type on point-to-point dedicated links and circuit switched connections. PPP is a non-proprietary encapsulation and this is while it is used to communicate between devices from different vendors.

Incorrect Answers:
A: IP and IPX are not encapsulation types. They are routing protocols.
B: Only PPP is an encapsulation type.
C: SDLC is a protocol used in IBM SNA systems.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 372-376.

QUESTION NO: 270
You are configuring a PPP CHAP connection between two routers. The hostnames are SNOWBALL1 and SNOWBALL2. The SNOWBALL1 router has already been configured. You are responsible for configuring SNOWBALL2. The password configured on SNOWBALL1 is cisco. Which of the following is the correct username syntax that you will need to configure on SNOWBALL2?

A. Username SNOWBALL2 password cisco
B. Username SNOWBALL1 password cisco
C. Username SNOWBALL2 password SNOWBALL1

D. Username SNOWBALL1 password SNOWBALL2

Answer: B
Explanation: We must allow SNOWBALL2 access to SNOWBALL1. We should therefore specify the username and the password of the hosting router: the peer router. The username of the peer router is SNOWBALL1) and the password is cisco.

Incorrect Answers:
A: We should use the peer username, not the local username
C, D: We must use the password of the peer, not the local password..

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 380-382.

QUESTION NO: 271
Point-to-Point protocol (PPP) is used as a WAN encapsulation between two routers. Which one of the following is true regarding PPP?

A. PPP supports TCP/IP, but not Novell IPX.
B. PPP is being phased out of existence by the Serial Line Internet protocol.
C. PPP provides router-to-router and host-to-network connections over both synchronous and asynchronous circuits.
D. PPP is an ITU-T and ANSI standard that defines the process for sending data over a packet-switched data network.

Answer: C
Explanation: PPP provide router-to-router and host-to-network connections over **synchronous** and asynchronous circuits.

Incorrect Answers:
A: PPP supports both IP and IPX.
B: PPP is causing SLIP to be phased out.
D: PPP was not designed as a standard for packet-switched data networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 373.

QUESTION NO: 272
A Novell IPX address has 80 bits. 32 bits for the network number and 48 bits for the node number. How is the node number determined?

A. It is the serial number of the given device.
B. It is assigned as a lease by Novell DHCP.
C. It is also set by the network administrator.
D. It is usually the MAC address of one interface.
E. It is downloaded by NetWare Core Protocol (NCP).

Answer: D
Explanation: It is determined by the MAC address, so all other options are wrong.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 335-336.

QUESTION NO: 273
Which two statements about a Layer 2 bridge are true? (Choose two)

A. A bridge floods multicasts.
B. A bridge floods broadcasts.
C. A bridge does not flood multicasts.
D. A bridge does not flood broadcasts.

Answer: A, B
Explanation: A bridge must send all multicasts and broadcast to all ports, since there is only one broadcast domain.

Incorrect Answers:
C and D: Because a bridge DOES flood broadcasts and multicasts.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 22.

QUESTION NO: 274
What are two commands that you can use to view your access lists? (Choose two)

A. Show filters.
B. Show access-lists.
C. Show IP access-list.
D. Show running-Config.

Answer: B, D
Explanation:

B. The show access-list command is used to display all access lists' contents. Furthermore, if you only want to display IP access lists then you would issue the show ip access-lists command.
D. The 'show running-config' command will show you which access lists are configured on each port.
Incorrect Answers:
A. There is no show filters command.
C. The show IP access-list command only shows the IP access lists.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 324 – 325 and 98 – 99.

QUESTION NO: 275
Which IP address range is allowable given an IP address of 131.107.2.56 and 28-bits of subnetting?

A. 131.107.2.48 to 131.107.2.63
B. 131.107.2.48 to 131.107.2.6.2
C. 131.107.2.49 to 131.107.2.62
D. 131.107.2.49 to 131.107.2.63
E. 131.107.2.55 to 131.107.2.126

Answer: C
Explanation: When we say 28 bits of subnetting, this is similar to a CIDR question. We have a subnet mask of 28 bits of ones followed by 4 bits of zeros, or 255.255.255.240, and gives subnets with a stride of 16, or 14 hosts per subnet (16-2 because we subtract out the two broadcast ranges of all zeros and all ones)

This will yield subnets, some networks are as follows:
131.107.2.0.
131.107.2.16
131.107.2.32
131.107.2.48
131.107.2.64
etc…

So, we can fit a network of 131.107.2.48-131.107.2.63
131.107.2.48 is the network, and the all zeros broadcast range.
131.107.2.63 is the broadcast, and is the all ones broadcast range.

So, we can't user 48 or 63, and the valid host address range would be 49-62.

C is correct; this is the only range that fits.

Incorrect Answers:
A, B, D, and E: These are not the proper ranges with the information provided in the question.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233-237.

QUESTION NO: 276
Which of the following are true about 172.16.0.254/16?

A. IPX:MAC addresses.
B. IP:classC directed broadcast.
C. Private IP address:node number
D. Public IP addresses:directed broadcast.
E. Private IP addresses directed broadcast.

Answer: C
Explanation: The Class B network of 172.16 is a Class B Private Address Range, and the second part (0.254) is the host address, or node number/address.

Incorrect Answers:
A: The address is an IP address format.
B: The question is a Class B address, if it were Class C, the mask would be 255.255.255.0
D: 172.16 is not a public IP address.
E: 0.254 is not a broadcast address.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 234-236.

QUESTION NO: 277
If you issued the command show access-list 101 list what would be displayed?

A. All extended access lists.
B. All access lists within the router.
C. The contents of standard access list 101
D. The contents of extended access list 101

Answer: D
Explanation: As the command is directing that the contents of access list 101 be displayed and as 101 is a number for an extended IP access list D is correct.

Incorrect Answers:
A and B: Only access list 101 will be displayed.
C: Standard IP address lists are in the range of 1-99, IP extended address lists are in the range of 100-199.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 303, 324-325.

QUESTION NO: 278
You are troubleshooting a router that you believe it configured with an incorrect IP address. You issue the show configuration command from privileged mode. Which part of the output shows the specific configured IP addresses and subnet masks?

A. The IP host table.
B. The interfaces output.
C. Each section of the output.
D. Each section of the output.
E. The global configuration statements.
F. The section under the autonomous system number.

Answer: B
Explanation: Each interface that has the IP protocol, will show all IP addresses that were configured on that interface, with subnet masks.

Incorrect Answers:
A: This only shows the IP to host mappings, like the mapping of a HOSTS table.
C, D, E, and F: These options do not provide this information.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 106-110.

QUESTION NO: 279
Which one of the following protocols used in the TCP/IP protocol stack is considered a reliable connection-oriented protocol?

A. IP
B. UDP
C. TCP
D. DNS
E. OSPF

Answer: C
Explanation: TCP is a connection-oriented, reliable protocol. In connection-orientated environment, a connection is established between both ends before transfer of information can begin.

Incorrect Answers:

A: IP is a connectionless protocol.
B: UDP is a connectionless protocol.
D: DNS is a service, not a protocol.
E: OSPF is a routing protocol.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 206-215.

QUESTION NO: 280
Most modern IP networks today use a variety of different equipment. Which statements are true about IP networks?

A. A broadcast source MAC contains all zeros.
B. A MAC address is part of the physical layer of the OSI model.
C. Bridges to make forwarding decisions use MAC addresses: routers use IP addresses.
D. IP addresses are now a flat addressing scheme: MAC addresses use a hierarchical addressing scheme.

Answer: C
Explanation: A bridge uses MAC addresses to make routing decisions whereas a routers uses IP addresses to makes its routing decisions.

Incorrect Answers:
A: For Broadcasts MAC uses the address is all ones, or X'FF' for each octet.
B: The MAC address is part of the Data Link Layer.
D: It is reversed. MAC is Flat Addressing, and IP is hierarchical.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 170-173.

QUESTION NO: 281
Which of the following WAN encapsulations support multiple upper layer protocols? (Choose Two)

A. PPP
B. LAPD
C. ISDN
D. HDLC

Answer: A, D
Explanation: Cisco has a proprietary HDLC. This Cisco HDLC frame uses a proprietary type field that acts as protocol field, which makes it possible for multiple network later protocols to share the same serial link.

PPP is not a proprietary protocol. As result, it is most often used to connect devices of different vendors. In addition, it encapsulates network layer protocol information that makes it possible to support multiple upper layer protocols.

Incorrect Answers:
B: LAPB is a layer 2 protocol but LAPD is not
C: ISDN is a Layer 1 (Physical) layer protocol, not Layer 2(data link).

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 373-376.

QUESTION NO: 282
You need to install RIP on your router. Which command enables directly connected network 131.107.10.0 to be used by RIP?

A. Router(Config)# rip 131.107.10.0
B. Router(Config-router)# rip 131.107.10.0
C. Router(Config-router)# network 131.107.10.0
D. Router(Config-router)# network 131.107.0.0

Answer: D
Explanation: The network command allows the routing process to identify the interfaces will participate in the sending and receiving of messages.

Incorrect Answers:
A and B: These are not valid commands. In addition, A is in the wrong mode.
C: This is the wrong network number. The 131.107.10.0 is a Class B subnet, using a default mask of 255.255.0.0.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 276-277.

QUESTION NO: 283
In 100BaseT Ethernet cabling 100 is the speed in Mbps, and T is the Type of Media in this case Twisted-Pair. What does the term 'Base' refer to?

A. Cabling type.
B. Signaling type.
C. 100 mode type.
D. Spectrum used.
E. Speed category.

Answer: B
Explanation: There are two main signaling types: Baseband and Broadband.

Incorrect Answers:
B: T is the cabling type, in this case Twisted Pair.
C: 100 is the speed, in this case 100mbps.
D: Spectrum, such as fiber, would be part of the cabling type.
E: is the speed category, in this case 100mbps.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 44-45.

QUESTION NO: 284
When using Frame Relay which statement about the Committed Information Rate (CIR) is true?

A. It is the rate, in bits per second, at which the Frame Relay switch agrees to transfer data
B. It is the clock speed (port speed) of the connection (local loop) to the Frame Relay cloud
C. It is the maximum number of bits that the switch can transfer during any Committed Rate Measurement Interval
D. It is a signaling standard between the CPE device and the FR switch. It is responsible for managing the connection and maintaining status between the devices.

Answer: A
Explanation: CIR is the rate in bits per second at which the service provided guarantees that data will be transferred.

Incorrect Answers:
B: Clock rate defines the clock speed.
C: CIR can be exceeded.
D: CIR is not a signaling standard.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 414.

QUESTION NO: 285
Which key do I press to have the IOS finish typing a known command for me?

A. <Tab>
B. <Ctrl R>
C. <Spacebar>
D. <Right Arrow>

Answer: A
Explanation: Tab completes a partially entered command if enough characters have been entered to make it unambiguous.

Incorrect Answers:
B: The key combination will refresh the command line and everything typed up to this point.
C: This just produces a space.
D: This will not produce the desired result.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 97-98.

QUESTION NO: 286
Ten personal computers are connected to separate 10Mbps ports on a switch. How much bandwidth will be available for each pc?

A. 1.25
B. 4
C. 16
D. 10
E. 60

Answer: D
Explanation: Using switching technology, each port can provide full bandwidth, in this case 10mbps, so each station can get a full 10mbps.

Incorrect Answers:
A, B, C and E: Due to the fact that each workstation is connected to it's own 10 Mbps port, each port can provided it full 10 mbps.

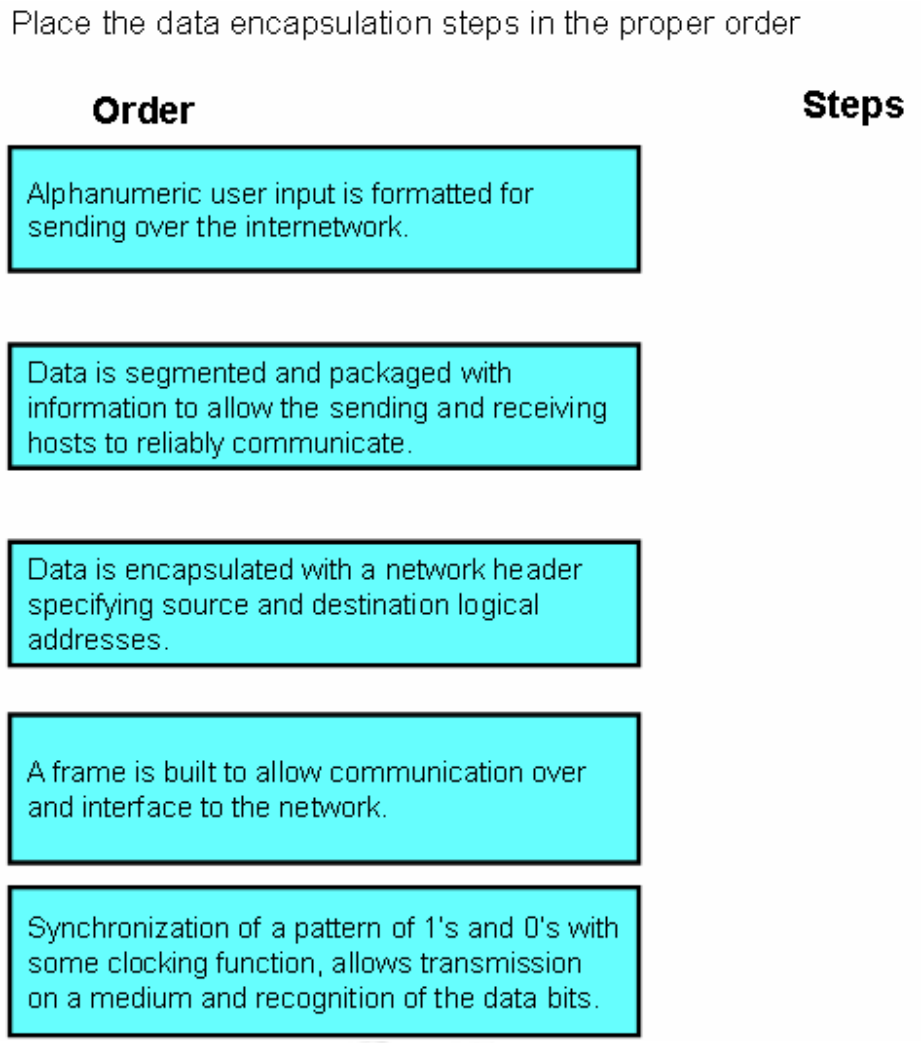
Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 170-175.

QUESTION NO: 287
In which order takes the data encapsulation place.
Click the task button & Place the encapsulation.

Place the data encapsulation steps in the proper order

Order	Steps
place step one here	Synchronization of a pattern of 1's and 0's with some clocking function, allows transmission on a medium and recognition of the data bits.
place step two here	Data is segmented and packaged with information to allow the sending and receiving hosts to reliably communicate.
place step three here	Alphanumeric user input is formatted for sending over the internetwork.
place step four here	A frame is built to allow communication over and interface to the network.
place step five here	Data is encapsulated with a network header specifying source and destination logical addresses.

Answer:



Explanation:
We can also look at this as layer functions, then sort:

Step One: Physical Layer
Step Two: Transport Layer
Step Three: Application Layer
Step Four: Data Link Layer
Step Five: Network Layer

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 10-14.

QUESTION NO: 288
You are configuring NAT (Network Address Translation) on a Cisco Router. The instructions that you found on Cisco's web site recommend that on your inside network the following IP addresses shown in the EXHIBIT are used. Why are these addresses recommended?

EXHIBIT:
10.0.0.0 to 10.255.255.255
172.16.0.0 to 172.31.255.255
192.168.0.0 to 192.168.255.255

A. They are private IP addresses.
B. They cannot be leased with DHCP.
C. They are allocated for VOIP.
D. They represent IP classless addresses.
E. They are used by the inter NIC for administration.

Answer: A
Explanation: RFC 1918 defines networks and addresses 10.0.0.0 through 10.255.255.255, 172.16.0.0 through 172.31.255.255, and 192.168.0.0 through 192.168.25.255 as reserved addresses to be used as internal private addresses and not to connect directly to the public Internet.

Incorrect Answers:
B: They can be leased by DHCP.
C: They are not allocated for VOIP.
D: These range of addresses still retain their implied class.
E: Inter NIC does not use these IPs for administration.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 224.

QUESTION NO: 289
Which of the following can be using to determine the best path to reach a remote destination on a Cisco router? (Choose two)

A. Static route entry.
B. Default route entry.
C. Dynamic route entry.
D. Temporary route entry.
E. Permanent route entry.

Answer: A, C

Explanation: When a router must send packets that are not directly connected it must have either a static route or a dynamic router entry.

Incorrect Answers:
B: A default gateway does not always determine the appropriate path.
D and E: Routes can be temporary or permanent, but this is an attribute of the route entry itself. This does not determine path information.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 250-252.

QUESTION NO: 290
IGRP is Cisco propriety routing protocols that as all routing protocols use metrics to determine the best path to a destination. Which are the default metrics for this routing protocol?

A. Maximum Transmission Unit
B. cumulative interface delay
C. path bandwidth value
D. reliability from source to destination
E. link loading in bits-per-second
F. hold-down timers for updates

Answer: B, C
Explanation: By default the IGRP metric is a function of bandwidth and delay.

Note: IGRP uses a composite metric that is calculated by factoring weighted mathematical values for internetwork delay, bandwidth, reliability, and load. Reliability and load, can take on any value between 1 and 255; bandwidth can take on values reflecting speeds from 1200 bps to 10 Gbps, while delay can take on any value from 1 to 2^{24}.

Incorrect Answers
A: Maximum Transmission Unit (MTU) can be included in the IGRP metric, but it isn't included by default.
D: Reliable of the path can be used as a metric, however it is not included in the metric by default.
E: Bandwidth, not link loading, is including the metric. Furthermore, the bandwidth is scaled by 10,000,000 in kilobits per second.
F: Hold down timers cannot be used to calculate the metrics for IGRP.

Cisco CCNA exam #640-801 Certification Guide, Cisco Press, RIP and IGRP Feature Comparison, page 429

QUESTION NO: 291
Which of the following are true about layer 3 of the OSI model? (Choose four)

A. It uses a two-part address.
B. It maintains routing tables.
C. It uses broadcast addresses.
D. It establishes network addresses.
E. It provides access to the LAN media.
F. It provides media independence for upper layers.
G. It provides path selection for Internet work communication.

Answer: A, B, C, G
Explanation:
The network layer defined how to transport traffic between devices that are not locally attached in the same broadcast domain. For the communication the device will require two pieces of information: a logical address associated with the source and destination stations and a path through the network to reach the desired destination. Both of the required information is stored in the devices routing table. The addresses within the routing table are considered to be a logical network address that contains two parts: one part that identifies the network and another part that uniquely identifies the host on each of those networks. If the address of the destination device is unknown to the device it will broadcast the packet to the remaining interfaces.

Incorrect Answers:
D: The network layer does not establish addresses rather it uses the addresses to route information.
E: The physical layer provides access to media.
F: The data link layer provides media independence for upper layers.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 24-6.

QUESTION NO: 292
The data link layer of the OSI model was broken down into two sublayers. What are the names of these sublayers? (Choose two)

A. MAC
B. LLC
C. SAP
D. LCP
E. NetWare Core Protocol (NCP)

Answer: A, B
Explanation: The data link layer has two sublayers. These sublayers are: MAC and LLC.

Incorrect Answers:
C: The Service Access Point is used by Netware to advertise servers, and runs at a higher layer.

D: This protocol is used in PPP, but is not part of the data link layer itself.
E: NCP is used by Netware, and runs at a higher layer.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages18-19.

QUESTION NO: 293
In troubleshooting a Frame Relay Link on serial 0/2 which command displays the LMI, DLCI, and bandwidth for that link?

A. Show interface serial 0/2
B. Show frame-relay serial 0/2.
C. Show protocol frame-relay serial 0/2
D. Show serial 0/2 encapsulation frame-relay.

Answer: A
Explanation: The show interfaces command displays statistics for all interfaces configured on the switch.

Incorrect Answers:
B, C and D: These are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 81-81.

QUESTION NO: 294
What is the benefit of segmenting a network with a router into two different segments called segment one and segment two?

A. It increases the number of collisions.
B. It decreases the number of broadcast domains.
C. It connects segment one's broadcast to segment two.
D. It prevents segment one's broadcast from getting to segment two.

Answer: D
Explanation: The broadcast domains are broken up and separated.

Incorrect Answers:
A: The number of collisions is decreased.
B: The number of broadcast domains is increased.
C: The broadcast domains are broken up and separated.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 26-27.

QUESTION NO: 295
Which one of the following is true about User Datagram Protocol?

A. It is reliable and acknowledged.
B. It is unreliable and acknowledged.
C. It is reliable and unacknowledged.
D. It is unreliable and unacknowledged.

Answer: D
Explanation: UDP is connectionless and unacknowledged protocol. Although UDP is responsible for transmitting messages, no checking for segment delivery is provided at this layer. UDP depends on upper-layer protocols for reliability.

Incorrect Answers:
A: UDP is neither reliable nor acknowledged.
B: UDP is not acknowledged.
C: UDP is not reliable.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 207.

QUESTION NO: 296
Which one of the following commands will start the IP processing on interface e0?

A. IP-Space enable.
B. Network IP-Address.
C. IP address *IP-address subnet mask*.
D. The exit command from the enable configuration.
E. Copy running-configuration to startup-configuration.

Answer: C
Explanation: The ip address command is used to start IP processing on a router (in fact the same command is also used to do the same on a switch.

Incorrect Answers:
A: This is not a valid command.
B: The network command is most often used to identify directly connected networks.
D: This is not a valid command.

E: This command will copy the running config to the NVRAM.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 245, 133, 277.

QUESTION NO: 297
Ethernet switches operate at the Data Link layer of the OSI model. These Layer 2 devices have three major functions which of the following describe these functions? (Choose three)

A. Loop avoidance.
B. Address learning
C. Hop count limiting
D. Broadcast filtering
E. Packet forward/filtering.

Answer: A, B, E
Explanation: A switch has three basic functions, which increase the available bandwidth on a network. These functions are address learning, forward/filter decision, and loop avoidance,

Incorrect Answers:
C: Although a switch functions a lot like a multi-port bridge, a switch does not affect – nor is affected by – the hop count.
D: By their very design Broadcasts are meant to be seen by everyone.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 146-152.

QUESTION NO: 298
The network administrator has just make changes to a router. You have been hired to make sure those changes are correct and that they have been saved in NVRAM. In Cisco IOS software, which command displays the backup configuration to see if the changes have been saved to NVRAM?

A. Show flash.
B. Show version.
C. Show tftp-config.
D. Show backup-config.
E. Show startup-config .

Answer: E
Explanation: This shows the startup configuration in NVRAM, which is the backup for the running configuration that runs in RAM.

Incorrect Answers:
A: Show flash command lists the contents of the flash showing the IOS images that are stored. Remember, the backup configuration is in the NVRAM, not Flash nor RAM.
B: This command shows information on the running configuration.
C: This is not a valid command.
C: This is not a valid command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 98-99, 131.

QUESTION NO: 299
When you issue the command *show version*, your router returns:

Cisco Internetwork Operating System Software
IOS (tm) C2600 Software (C2600-IS-M), Version 12.2(4)T, RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2001 by cisco Systems, Inc.
Compiled Fri 28-Sep-01 06:59 by ccai
Image text-base: 0x80008088, data-base: 0x812E7ADC

ROM: System Bootstrap, Version 11.3(2)XA4, RELEASE SOFTWARE (fc1)

DSL uptime is 2 days, 17 hours, 30 minutes
System returned to ROM by power-on
System image file is "flash:c2600-is-mz.122-4.T.bin"

cisco 2621 (MPC860) processor (revision 0x102) with 60416K/5120K bytes of memory.
Processor board ID JAB041306DU (1285222064)
M860 processor: part number 0, mask 49
Bridging software.
X.25 software, Version 3.0.0.
2 FastEthernet/IEEE 802.3 interface(s)
2 Serial(sync/async) network interface(s)
1 ATM network interface(s)
32K bytes of non-volatile configuration memory.
16384K bytes of processor board System flash (Read/Write)

Configuration register is 0x0101

From where does the router boot?

A. ROM
B. NVRAM

C. FLASH
D. A TFTP server

Answer: A
Explanation: If you want your router to boot automatically from ROM you need to set the boot field to 1 (0x1).

Incorrect Answers:
B: To boot from the NVRAM the boot field must be set from the range of 2 to F (0x2 to 0xF).
C: To boot from FLASH the boot system flash command would need to be used.
D: To boot from a TFTP server the boot system tftp command would need to be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 127-130.

QUESTION NO: 300
Which statement is true about Layer 2 bridges?

A. While bridges are used to segment networks they will not isolate broadcast or multicast packets.
B. A bridge looks at every packet with in its network segment and works like a hub, re-broadcasting the packet if the destination is with in its network segment.
C. A bridge maintains a table of the IP addresses of the hosts with in its network segment and forwards the packet directly to the destination based upon the IP address.
D. Bridge resets the hop count by keeping all packets within the network segment only packets addressed to its specific destination host outside the network segment are allowed to pass through the bridge.

Answer: A
Explanation: Bridges (and switches) maintain only one broadcast domain.

Incorrect Answers:
B: If the data does not need to be transferred by the bridge, then it does not need to be rebroadcasted.
C: A bridge operates on layer 2 using MAC addresses, and IP addresses are Layer 3.
D: The hop count is not reset.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 21-24.

QUESTION NO: 301
Given the following IP address from the Class B address range:

131.107.21.12

Your network plan requires no more than 126 hosts on a subnet that includes this address. When you configure the IP address in Cisco IOS software, which value should you use as the subnet mask?

A. 255.255.0.0
B. 255.255.128.0
C. 255.255.255.128
D. 255.255.255.252

Answer: C
Explanation:
Since we have to reserve the all ones and all zeros broadcast addresses, we take 126, add 2, and round up to the next power of 2. We get 126+2=128, and 128 is a power of 2, and takes 7 bits of the subnet mask to represent the host address.

In the fourth octet of the subnet mask, we have 1 bit for the network, and 7 bits for the host. This high order NETWORK bit is the 128 bit. Based on the definition of the subnet mask, all network bits before this bit MUST BE one, so we get:

255.255.255.128

Incorrect Answers:
A, B, and D: They do not provide a maximum of 126 hosts.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233-236.

QUESTION NO: 302
You want to configure the IP address on the interface of your router.
Which of the following commands achieves this goal?

A. router(config-if)**#ip address 163.63.56.5 subnet mask 255.255.240.0**
B. router(config-if)**# 163.63.56.5 255.255.240.0**
C. router(config-if)**#ip address 163.63.56.5 255.255.240.0**
D. router(config-if)**# 163.63.56.5 subnet mask 255.255.240.00**
E. router(config-if)**#ip address 163.63.56.5 /29**
F. router(config-if)**#ip address 163.63.56.5 subnet mask /20**

Answer: C
Explanation: The syntax of command is:
ip address ***ip-address*** *mask* [**secondary**]
The command must be issued in Interface mode.

Incorrect Answers

A, B, D, E; F: Incorrect syntax.

Cisco CCNA exam #640-801 Certification Guide, Cisco Press, page 343

QUESTION NO: 303
Which one of the following is not a characteristic of a network segment on a transparent switch?

A. The segment has its own collision domain.
B. The segment can translate from one media to a different media.
C. All devices in the segment are part of the same broadcast domain.
D. One device per segment can currently send frames to the switch.

Answer: B
Explanation: A switch is usually only handle one media type at a time.

Incorrect Answers:
A, C and D: The statements are characteristics of a network segment on a switch.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 78-80.

QUESTION NO: 304
Which of the following are two ways Cisco supports multiple IPX logical networks on an individual interface? (Choose two)

A. Network number.
B. Routing protocol.
C. Encapsulation type.
D. Autonomous system number.

Answer: A, C
Explanation:
Multiple encapsulations can be specified on an interface, but only if multiple network numbers have also been assigned, where each network number belongs to only one encapsulation type and each encapsulation type has only one network number. Although several encapsulation types can share the same interface, clients and servers with different encapsulation types cannot communicate directly with each other.

Incorrect Answers:
B: Routing protocol does not enable multiple logical networks.

D: Autonomous System Number is used with certain routing protocols, and do not provide support of logical networks.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) page 335.

QUESTION NO: 305
When configuring a Frame Relay network your provider assigns you a DLCI number between 16 and 1007 which one of the following statements about this data-link connection identifier (DLCI) is true?

A. It is a number that identifies a local virtual circuit in Frame Relay network.
B. It is a signaling standard between the CPE device and the Frame Relay switch.
C. It is check speed port speed of the connection (local loop) to the Frame Relay cloud.
D. It is maximum number of uncommitted bits that the Frame Relay switch will attempt to transfer beyond the committed information rate (CIR).

Answer: A
Explanation: The DLCI (Data-Link Connection Identifier) is a number that identifies the logical circuit between the router and the Frame Relay switch. The Frame Relay switch maps the DLCIs between each pair of routers to create a PVC. DLCIs have local significance in that the identifier references the point between the local router and the Frame Relay switch, which it is connected.

Incorrect Answers:
B: DLCI is not a signaling standard.
C: This is the local access rate.
D: This is not a function of DLCI.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 413-414.

QUESTION NO: 306
Which of the following describes the basic steps a connection oriented uses for communication? (Choose three)

A. Call setup
B. Data transfer
C. Load Balancing
D. Call termination
E. Call prioritization
F. Data segmentation
G. Data link identification

Answer: A, B, D
Explanation:
In connection oriented services, the three steps are: Call Setup, Data Transfer, Call Termination.

Incorrect Options
C, E, F and G: These options may occur but are not required.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 29-30.

QUESTION NO: 307
Given an IP address of 131.107.2.160 and a subnet mask of 255.255.255.192, to which subnet does the host belong?

A. 131.107.2.32
B. 131.107.2.64
C. 131.107.2.96
D. 131.107.2.128
E. 131.107.2.192

Answer: D
Explanation: When we look at the last octet of the subnet mask, we have 192=128+64, which is the two high order mask bits, leaving 6 bits for host addressing. Each subnet strides 64 addresses, including broadcast, leaving the following networks:

131.107.2.0
131.107.2.64
131.107.2.128
131.107.2.192

We now look at the host address, which is 160, and find that it fits between 128 and 192, so the network is 131.107.2.128.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 227-234.

QUESTION NO: 308
The OSI model has 7 layers. The physical layer is numbered as the first.
Which devices operate at the level above the physical layer? (Choose two.)

A. router

B. SMTP server
C. transceiver
D. switch
E. bridge
F. hub

Answer: D, E
Explanation:
Switches and bridges work at layer 2, the Data Link layer, of the OSI model.

Incorrect Answers
A: A router works at layer 3, the Network layer, of the OSI model.
B: A SMTP server works at layer 7, the Appliation layer, of the OSI model.
C: A transceiver works at layer 1, the Physical layer, of the OSI model.
F: A hub works at layer 1, the Physical layer, of the OSI model.

QUESTION NO: 309
You telnet into Router B from Router A and now would like to be able to telnet to Router C but keep the connection open to Router B. What key sequence is used to suspend your telnet session and return you to Router A so that you can telnet to Router C?

A. Suspend.
B. The command exit.
C. CTRL – ESC followed by x.
D. CTRL – ALT – DEL followed b ESC.
E. CTRL- Shift-6 followed by x.

Answer: E
Explanation: To suspend a Telnet session and escape from the remote target system back to your local switch or router, press the keys Ctrl-Shift-6 at the same time, release the key sequence, and then press the character x.

Incorrect Answers:
A, B, C, and D: These are not the proper key combinations to suspend a Telnet session.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 122-123.

QUESTION NO: 310
TCP is considered a reliable protocol. Which one of the following is used to insure reliability?

A. Route selection
B. Acknowledgement
C. Session checkpoints
D. System authentication

Answer: B
Explanation: Acknowledgement is required to insure packets were not loss and this is how a reliable transport layer connection is maintained.

Incorrect Answers:
A: Route selection is performed by the network layer.
C: These are not transport layer functions.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 28-30.

QUESTION NO: 311
Which layer of the 7 layer OSI model does the ping command operate?

A. Session
B. Network
C. Transport
D. Maintenance

Answer: B
Explanation:
As the ping command is used to test network connectivity it resides on the network layer of the OSI model.

Incorrect Answers:
A: The session layer is responsible for establishing, managing, and terminating communications sessions between presentation layer entities. This layer is not responsible for the ping command.
C: The transport layer of the OSI model is responsible for the delivery of information in either a reliable or unreliable manner. Ping does not reside at this layer of the OSI model.
D: There is no maintenance layer in the OSI model.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 124, 10-13.

QUESTION NO: 312
You have opened up a TAC case for one of your routers that is not working correctly. One of the fields of the TAC case is what is your software version? Which show command can be issue to display system

configuration information, software version and the names and sources of configuration files and boot images on a router?

A. Show boot.
B. Show flash.
C. Show Config.
D. Show version.

Answer: D
Explanation: The show version command displays information about the system hardware, the software version the names and sources of the configuration files and the boot images.

Incorrect Answers:
A: Is not a valid command.
B: The show flash command displays the contents of the Flash memory, which includes the image filenames and sizes.
C: The show config command displays the configuration profile from which the command is entered.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 78, 131 and 466.

QUESTION NO: 313
You would like to see if a host table has been created on a router. Which command displays the IP addresses assigned to specific host names?

A. Show hosts.
B. Show interface.
C. Ping host name.
D. Config host name.
E. Show host mapping.
F. Show host name IP address.
G. Trace IP addresses host name.

Answer: A
Explanation: The show hosts command displays a cached list of host names and addresses.

Incorrect Answers:
B: The show interface command is used to display the configuration of an interface.
C – G: These are not valid commands.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 106, 240-241.

QUESTION NO: 314
At startup the Cisco routers show startup messages. The startup messages can be grouped into different groups. Which of these of these groups of messages identifies the router components that you can configure during setup of the initial system configuration?

A) System Bootstrap, Version 11.3(1)XA, PLATFORM SPECIFIC RELEASE SOFTWARE (fc1)
Copyright (c) 1998 by cisco Systems, Inc,
CS2600 platform with 32768 Kbytes of main memory

B) Rp,,pm 1 b f
program load complete, entry point: 0x800008000, size: 0xef4e0
Self decompressing the image :################################[OK]

C) Notice: NVRAM invalid, possible due to write erase,
program load complete, entry point:0x80008000, size 0x415b20
Self decompressing the image: ###################################
##[OK]
Restricted Rights Legend….(abridged)

D) Cisco Internetwork Operating System Software
IOC (tm) C2600 Software (C2600-JS-M), Version 11.3(2)XA,
PLATFORM SPECIFIC RELEASE SOFTWARE (fc1)
Copyright 1996-1998 by Cisco Systems Inc.
Compiled 10-Mar-98 14:25 by gneale
Image text-bas: 0x80008084, database: 0x809CD49C

E) Cisco 2611 (MP C860) processor (revision 0x100) with 24576K/8192K bytes of memory,
Processor board ID 04614954
M860 processor, part number 0 mask 32,
Bridging software,
X.25 software, Version 3.0.0,
2 Ethernet/IEEE 802.3 interface(s)

Answer: E
Explanation: The router components that you can configure during the initial setup are the interfaces. Answer E gives us information about the interfaces (2 Ethernet/IEEE 802.3 interface(s) tells us we have two Ethernet interfaces).

QUESTION NO: 315
How many valid host IP addresses are available on the following network/subnetwork?

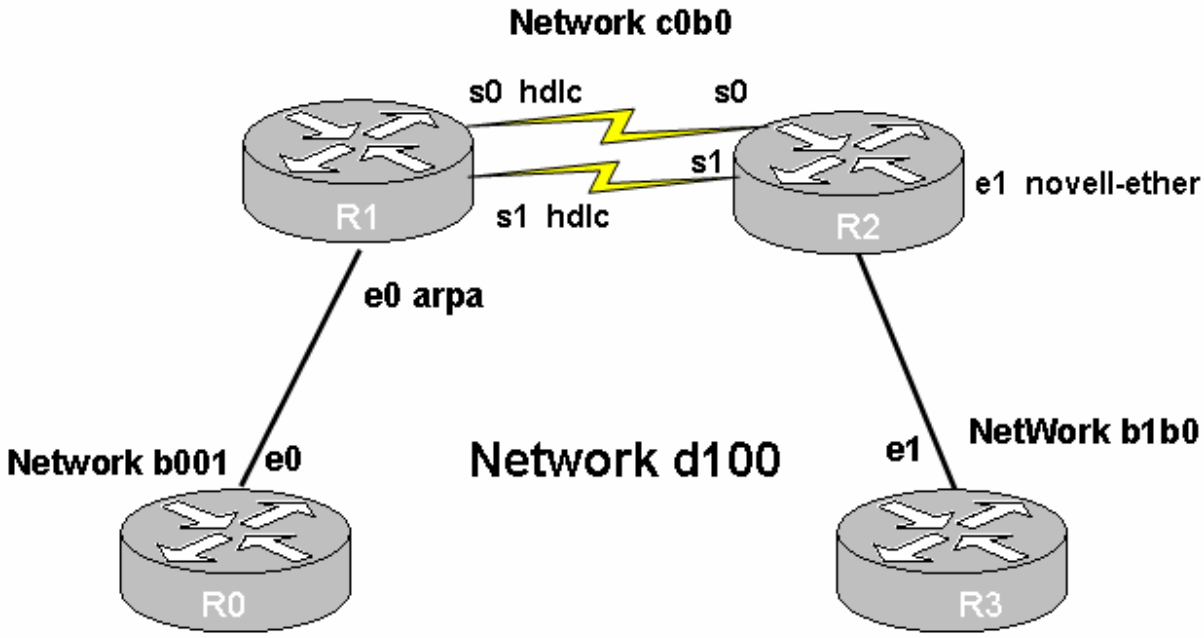
131.107.10.16/30

A. 2
B. 30
C. 254
D. 16,382
E. 65,534

Answer: A
Explanation: This is a CIDR problem, also called supernetting. When you see the /xx notation, the xx is the consecutive number of one bits in the subnet mask. In this case, /30 = 30, and is also a subnet mask of 255.255.255.252. This leaves 2 bits (4 hosts) for host addressing, however since we reserve 2 addresses, that leaves a net of 2 Host Addresses, max.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 227-234.

QUESTION NO: 316



You are configuring R2 so that it can communicate with R1 on serial port s0. What encapsulation should you use on s0 to setup this IPX network?

A. SAP
B. HDLC
C. ARPA
D. Novel Ether

Answer: B

Explanation: Router R2 S0 connects to Router R1 S0. Router R1 S0 uses HDLC, and BOTH sides must run the same protocol in order to communicate (it is like talking the same language; you can't have one side English and the other Side French).

So the correct answer is B – HDLC.

Incorrect answers:
A, B and C: The two routers must have the same encapsulation type to communicate properly thus these encapsulation types could not be used.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 368-373.

QUESTION NO: 317
Which one of the following is a reason to use a hardware address?

A. To obtain a vendor code/serial number from the user.
B. To transmit a frame from one interface to another interface.
C. To transmit a packet from one local device to another local device.
D. To transmit data from one local device to remote device across Internet.
E. To contain logical information about a device to use an end-to-end transmission.

Answer: B
Explanation: A hardware address is used to transmit frames on the hardware level.

Incorrect Answers:
A: A vendor code/serial number is a form of hardware address, and the user does not provide it.
C: Packets and devices are at a higher level in the layers.
D: Devices are handled at a higher layer, and use different addressing.
E: A logical device with end-to-end may span more than two hardware interfaces; device addresses are used from interface to interface, or hop-to-hop.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 172-175.

QUESTION NO: 318
Which command verifies encapsulation as well as IP address and MAC address on a router configured for Frame Relay?

A. Show IP
B. Show interface
C. Show statistics
D. Show frame-relay

Answer: B
Explanation: The show interface command will show information regarding the encapsulation and Layer 1 and Layer 2 status. It also displays information about the DLCIs used on the Frame Relay configured serial interface.

Incorrect Answers:
A: The show ip command displays the switches current IP configuration.
C: This is not a valid command.
D: Frame-relay will require another parameter after the show frame-relay IOS command.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 421-424 and 82.

QUESTION NO: 319
You purchased a router from an online auction. You issued the erase startup-config command on this router to return the router to factory defaults. When you power cycle the router what mode will the router boot up in?

A. Setup.
B. Startup.
C. User EXEC.
D. User privileged.
E. Global configuration.

Answer: A
Explanation: When a router is booted, it will copy the startup-config from NVRAM to the RAM and begin execution. Since the erase wiped out the startup configuration, the router can't start. This forces the router into setup mode, where a configuration has to be built from by scratch.

Incorrect Answers:
B: Because there is no configuration to startup.
C, D, and E: Because there is no longer a configuration to run, these modes do not exist.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 84-90 and 134.

QUESTION NO: 320
The _____ is the rate in bits per second which a Frame Relay switch agrees to transfer data?

A. Clock rate.
B. Committed information rate.
C. Local management interface.
D. Data-link connection identifier.
E. Committed rate measurement interval.

Answer: B
Explanation: CIR is the rate, in bits per second, at which the service provider states that data will be transfered.

Incorrect Answers:
A is incorrect; clock rate is the transmission medium speed, which is determined by modem clocking.
Odom. Cisco CCNA Exam #640-507 Certification Guide. (Cisco Press: 2000) pages 28-30

C: LMI is a signaling standard between the router device and the Frame Rekay switch that is responsible for managing the connection and maintaining the status between the devices.
D: DLCI is addressing used to identify virtual circuits.
E: This is the sampling period used in controlling CIR, but is not the rate itself.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 413-414.

QUESTION NO: 321
Which two statements are true about half duplex and full duplex? (Choose two)

A. Ethernet 802.3 utilizes a half duplex method for data transfer.
B. In a 100mbps point to point connect, a full duplex connection can provide 400mbs of data transfer.
C. Ethernet switches can use the full duplex mode to connect multiple nodes on a single port office switch.
D. Full duplex Ethernet takes advantage of UTP using one pair of transmission and other pair for reception.

Answer: A and D
Explanation: Half duplex Ethernet is most often found in a 802.3 network and full duplex achieves data transmission by using one pair to receive data and another to send data.

Incorrect Answers:
B: In full duplex you can maximize up to double – by transmitting and receiving at the same time, for a nominal maximum throughput of 200mbps.
C: When running full duplex, only one device can be attached to the port.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 163-165.

QUESTION NO: 322
CSMA/CD was created to help detect collisions. In regards to CSMA/CD what is the backoff algorithm used for on an 802.3 network?

A. It is latency in store and forward switching.
B. It is the time used for token passing for machine to machine.
C. It is the retransmission delay that is reinforced when a collision occurs.
D. It is the result of two nodes transmitting at a same time the frames from each transmitting device collide and are damaged.

Answer: C
Explanation: Backoff is done when a collision occurs. Those trying to transmit at the same time "back-off" and attempt to retransmit at a later time. A 802.3 network uses collision detection, so that the transmitters are notified of the collision. Then using a random calculated wait time, re-transmission occurs. By using a random wait time, hopefully both transmitter wait a different amount of time and do not attempt simultaneous transmission again.

Incorrect Answers:

A: Back off occurs after a collision has occurred and is not latency stored and forward switching.
B: Has nothing to do with the passing of the token.
D: Back off is used to prevent another collision.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 16-17.

QUESTION NO: 323
Which switching mode reads the entire frame including the CRC before the frame is forwarded?

A. CSMA/CD

B. Full duplex.
C. Cut through.
D. Half duplex.
E. Fragmentation.
F. Store and forward

Answer: F
Explanation: In store and forward mode, the switch must receive the complete frame before forwarding takes place. The destination and source addresses are read, the cyclic redundancy check (CRC) is performed, relevant filters are applied, and the frame is forwarded. If the CRC is bad, the frame is discarded. The latency (or delay) through the switch varies with frame length.

Incorrect Answers:
A: CSMA/CD is the physical method used on a 802.3 LAN
B: Full duplex is when you can transmit and receive at the same time.
C: In cut-through mode the frame is forwarded after the Destination Address has been read.
D: Half Duplex means EITHER transmit or receive, but not both at the same time,
E: This is not a switch mode. Fragment-free mode is a switch mode.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.

QUESTION NO: 324
When Layer 2 devices were first created there was no way of detecting bridging loops. A protocol was created by DEC to stop these loops. What protocol did DEC create?

A. Virtual LANs.
B. Frame filtering.
C. Cut through switching.
D. Spanning tree protocol.

Answer: D
Explanation: Spanning Tree protocol builds ONE path through all the nodes, and eliminates any loops. Anything sent along the tree will not encounter any loops because the protocol will eliminate any loops.

Incorrect Answers:
A: VLANs is not a loop resolution technology.
B: Frame Filtering is not a loop resolution technology.
C: Cut through switching is not a loop resolution technology. Rather it is a form of forwarding.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 155-160.

QUESTION NO: 325
Cisco's switching modes include cut-through, store and forwarded and a modified version of the first two methods. Which statement about switching methods is true?

A. The stored and forward method has low latency.
B. The cut through method and switching has high latency.
C. The modified version holds the packet in memory until 50% of the packet reaches the switch.
D. The modified version holds the packet in memory until the data portion of the packet reaches the switch.

Answer: D
Explanation: The modified cut-through (also known as fragment-free) the switch reads into the first 64 bytes before forwarding the frame.

Incorrect Answers:
A: Store and Forward has HIGH latency.
B: Cut-Through has LOW latency.
C: It is not 50%. In the modified version, the frame transmission does not start until the first 64 bytes are read.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 162-163.

QUESTION NO: 326

```
RouterTK#show ip route
Codes:    C-connected, s-static, l -IGRP, R -RIP, M -mobile, B -BGP, D -EIGRP, EX - EIGRP external,
      O - OSPF, IA -OSPF inter area, EI -OSPF external type 1, E2 -OSPF external type 2, E -EGP,
      i -IS-IS, L1 -IS-IS level-1, L2 -IS-IS level-2, * -candidate default, U - per-user static
route

Gateway of last resort is not set

R   202.30.8.0 /24[120/1] via 202.30.2.2, 00:00:16, Serial 0
C   202.30.9.0 /24 is directly connected, Serial 1
R   202.30.10.0 /24 is possibly down, routing via 202.30.9.1, Serial 1
R   202.30.11.0 /24 is possibly down, routing via 202.30.9.1, Serial 1
C   202.30.1.0 /24 is directly connected, Ethernet 0
C   202.30.2.0 /24 is directly connected, Serial 0
R   202.30.3.0 /24 [120/1] via 202.30.2.2, 00:00:17. Serial 0
R   202.30.4.0 /24 [120/15/ via 202.30.2.2, 00:00:17, Serial 0
R   202.30.5.0 /24 [120/15] via 202.30.2.2, 00:00:17, Serial 0
R   192.158.6.0 /24 [120/15] via 202.30.2.2, 00:00:17, Serial 0
R   202.30.7.0 /24 [120/1] via 202.30.2.2, 00:00:17, Serial 0
```

You are troubleshooting a router with default settings. You are concerned about the 202.30.10.0 and 202.30.11.0 routes. In particular you are interested how long they will be kept in the routing table. What would be the maximum time these routes would be kept in the routing table?

A. 30 seconds
B. 60 seconds
C. 240 seconds
D. 360 seconds
E. 630 seconds

Answer: C
Explanation: The Rs on the 202.30.10.0 and 202.30.11.0 lines (see below) indicates that the routes were learned from the RIP protocol. :

```
R   202.30.10.0 /24 is possibly down, routing via 202.30.9.1, Serial 1
R   202.30.11.0 /24 is possibly down, routing via 202.30.9.1, Serial 1
```

Note: The hold down timer for RIP is 180 sec. The flush timer for RIP is 240 sec.

QUESTION NO: 327

```
RouterTK#show ip route
Codes:    C-connected, s-static, l -IGRP, R -RIP, M -mobile, B -BGP, D -EIGRP, EX - EIGRP external,
      O - OSPF, IA -OSPF inter area, EI -OSPF external type 1, E2 -OSPF external type 2, E -EGP,
      i -IS-IS, L1 -IS-IS level-1, L2 -IS-IS level-2, * -candidate default, U - per-user static
route

Gateway of last resort is not set

R   202.30.8.0 /24[120/1] via 202.30.2.2, 00:00:10, Serial 0
C   202.30.9.0 /24 is directly connected, Serial 1
R   202.30.10.0 /24 [120/7] via 202.30.9.1, 00:00:02, Serial 1
R   202.30.11.0 /24 [120/7] via 202.30.9.1, 00:00:03, Serial 1
C   202.30.1.0 /24 is directly connected, Ethernet 0
C   202.30.2.0 /24 is directly connected, Serial 0
R   202.30.3.0 /24 [120/1] via 202.30.2.2, 00:00:10. Serial 0
R   202.30.4.0 /24 [120/15/ via 202.30.2.2, 00:00:10, Serial 0
R   202.30.5.0 /24 [120/15] via 202.30.2.2, 00:00:10, Serial 0
R   202.30.6.0 /24 [120/15] via 202.30.2.2, 00:00:10, Serial 0
R   202.30.7.0 /24 [120/1] via 202.30.2.2, 00:00:10, Serial 0
```

You examine the routing table of your router named RouterTK. This routing table will be send to neighboring routers via broadcasts. Some routes might be discarded and not entered in to the routing tables of the neighboring RIP routers. Which of the following routes would be discarded in this way?

A. R 202.30.8.0/24 [120/1] via 202.30.2.2, 00:00:10, Serial0
B. R 202.30.11.0/24 [120/7] via 202.30.9.1, 00:00:03, Serial1
C. C 202.30.1.0/24 is directly connected, Ethernet0
D. R 202.30.5.0/24 [120/15] via 202.30.2.2, 00:00:10, Serial0

Answer: D
Explanation: RIP has the maximum hop count of 15. This route already has a hop count of 15 and adding one would make it unreachable (see below). This route will be discarded.

R 202.30.5.0/24 [120/15] via 202.30.2.2, 00:00:10, Serial0

QUESTION NO: 328
At Layer 2 of the OSI model, which component connects a host to the network media?

A. Hub
B. Switch
C. Bridge
D. NIC
E. Transceiver

Answer: D
Explanation: The data link layer is layer 2 of the OSI model. The data link layer involves frames and uses the burned in MAC addresses that NIC cards and router interfaces have.

Incorrect Answers
A: A hub operates at the physical layer, layer 1.
C: Bridges operate the Data Link layer, layer 2, of the OSI model. However, they are used to connect network segments, not to connect hosts to the network media.
B: Bridges operate the Data Link layer, layer 2, of the OSI model. However, they are not used to connect hosts to the network media.
E: A transceiver works at the physical layer, layer 1.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 21 – 24.

QUESTION NO: 329
You are upgrading your Cisco router IOS from a TFTP server over the network. The upgrade procedure is stopped and you are prompted to erase the current flash contents before continuing.
What is most plausible reason for this?

A. There is insufficient room for more than one image.
B. The router has detected a copy of the current software image on the TFTP server.
C. The file **can be relocated and** not compressed.
D. The image to load is a binary executable file.

Answer: A
Explanation: There might not be enough free Flash memory to store the new image.

Incorrect Answers:
B. Detecting a copy of the image will not stop the procedure nor prompt you to erase the current version.
C. This would not stop the copying of the file.
D. The image is a binary executable file but this will not result in the prompt above.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 137 – 140.

QUESTION NO: 330
Identify three valid host addresses in the 192.168.27.0 network with a subnet mask of 255.255.255.240. (Choose three)

A. 192.168.27.33
B. 192.168.27.112
C. 192.168.27.119
D. 192.168.27.126
E. 192.168.27.175
F. 192.168.27.208

Answer: A, C, D
Explanation: A subnet mask of 255.255.255.240 divides the 4th octet into a subnet parts: the highest four bits, and a host port: the lowest four bits. We simply check the 4th octet to check that all subnet and host parts are ok. i.e that cannot be: 0000 or 1111
A: 33 decimal is 00100001. Both the subnet and the host part are ok.
C: 119 decimal is 01110111. Both the subnet and the host part are ok.
D: 126 decimal is 1111110. Both the subnet and the host part are ok.

Incorrect Answers
B: 112 decimal is 1110000 binary. This is not a valid host address in this network. It has all host bits 0.
E: 175 decimal is 10101111. All host bits are 1's. This is the local broadcast address and cannot be used as a host address.
F: 208 decimal is 11010000 binary. This is not a valid host address in this network. It has all host bits 0.

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 233 – 234.

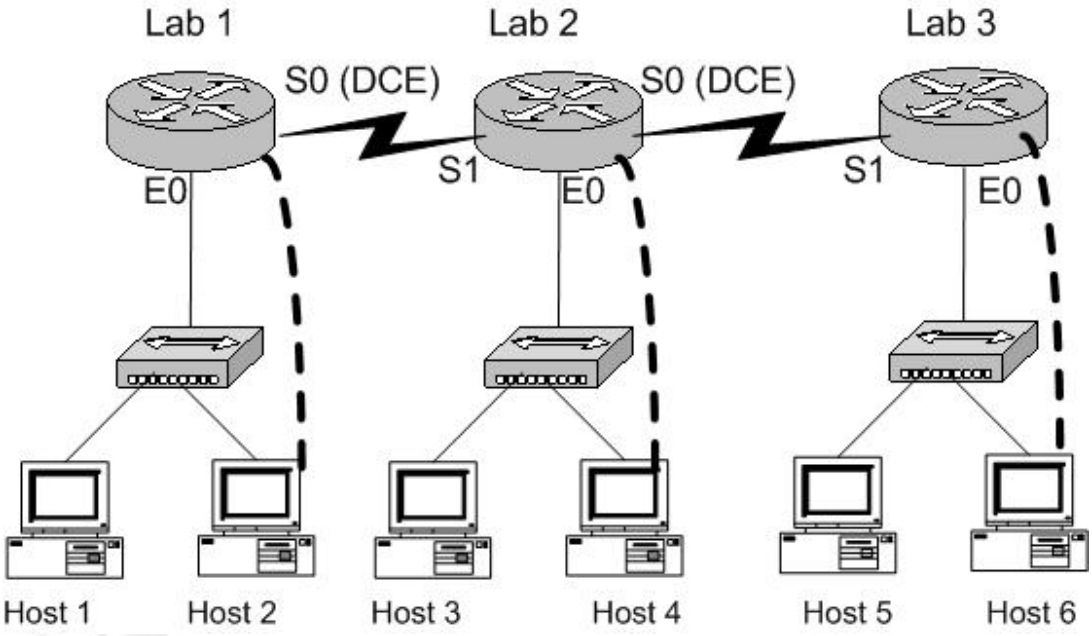
QUESTION NO: 331
You are a network administrator for an Insurance company TestK. The company has three routers named Tokyo, Kobe and Yokohama. You have already configured the Tokyo and the Kobe routers, but Yokohama still need some further configuration. The Yokohama router need:

- **a password for the for the first 5 virtual lines**
- **a password for the console**
- **a password for the privileged mode. These password must be encrypted.**

The following passwords should be used:

Type	**Password**
Telnet	Test
Console	King
Privileged	TestKing

The network use a 255.255.255.0 subnet mask, RIP is the only routing protocol used, and clocking is provided on the serial 0 interface.



Lab 1
Name: Tokyo
E0: 30.15.7.1
S0: 30.15.8.1

Lab 2
Name: Kobe
E0: 30.15.9.1
S0: 30.15.10.1
S1: 30.15.8.2

Lab 3
Name: Yokohama
E0: 30.15.11.1
S1: 30.15.10.2

Start by clicking on host that is connected to the router you want to configure.

Answer:
Answer Lab 3:
<Click on Host6, which is connected to the Lab 3 Router>

enable
config terminal
hostname Yokohama
enable secret TestKing
line con 0
login
password King
line vty 0 4
login
password Test
^Z
copy running-config startup-config

Explanation:
We should configure the passwords, not any IP configuration on the interfaces.

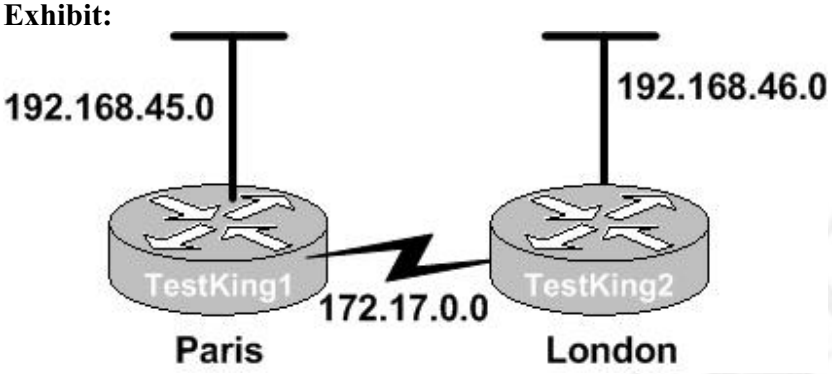
First we click on the Lab3 router.

```
Router Con0 is now available

Press RETURN to get started.                    ! We press enter.


Router>enable                                   ! We enter enable mode
Router#config terminal                          ! We enter terminal configuration mode
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname Yokohama                ! We change the host name. This is however not required.
Yokohama(config)#enable secret TestKing         ! Set the secret password.
Yokohama(config)#line con 0                     ! Configure the terminal connection
Yokohama(config-line)#login                     ! Specify the terminal connection password
Yokohama(config-line)#password King
Yokohama(config-line)#line vty 0 4              ! Configure the telnet connections. Numbered 0, 1, 2, 3, 4.
Yokohama(config-line)#login                     ! Specify password
Yokohama(config-line)#password Test
Yokohama(config)#^Z                             ! Exit from configuration mode.
%SYS-5-CONFIG_I: Configured from console by console
Yokohama#copy running-config startup-config     ! Save the running config to NVRAM.
Destination filename [startup-config]?          ! Confirm default selections
Warning: Attempting to overwrite an NVRAM configuration
```

```
previously written by a different version of the system image.
Overwrite the previous NVRAM configuration?[confirm]
Building configuration...

[OK]
Yokohama#
```

Steve McQuerry. Interconnecting Cisco Network Devices. (Cisco Press: 2000) pages 102 –103.

QUESTION NO: 332
Exhibit:



A network administrator in London has been instructed to prevent all traffic originating on the Paris LAN from entering the TestKing2 router.
Which statement would accomplish this filtering?

A. `access-list 101 deny ip 192.168.45.0 0.0.0.255 any`
B. `access-list 101 deny ip 192.168.45.0 0.0.0.0 any`
C. `access list 101 deny ip 192.168.46.0 0.0.0.0.255 198.168.45.0 0.0.0.255`
D. `access-list 101 deny ip 192.168.46.0 0.0.0.255 any`

Answer: A
Explanation: The access-list is configured to deny all the traffic from Paris router network 192.168.45.0 to any network in london. The wild card mask also correctly defined for Class C network.

Incorrect Answers
B: Wild card mask for 192.168.45.0 network is wrong. Wild card mask should be 0.0.0.255 instead of 0.0.0.0
C: This access list deny all traffic from 192.168.46.0 network to 192.168.45.0 network(There is type in this answer 192 as printed as 198.This can be defined at Testking 1 router if we want to deny traffic from London network (192.168.46.0) to Paris Network(192.168.45.0)
D: This access-list deny traffic from network 192.168.46.0 to any network.

Section B – extra practice questions

QUESTION NO: 1
You are a technician at TestKing. Your newly appointed TestKing trainee wants to know which command will show the LMI traffic statistics.

What would your reply be?

A. Show interface lmi
B. Show frame-relay lmi
C. Show interface frame-relay
D. Debug frame-relay interface.

Answer: B
Explanation:
To view Frame-Relay LMI statistics, enter the command Show frame-relay lmi
Chapter: 6

QUESTION NO: 2
You are a technician at TestKing. Your newly appointed TestKing trainee wants to know which command will set the bandwidth of serial 0 to 56kbps.

What would your reply be?

A. Bandwidth 56000
B. Bandwidth 56000000
C. Bandwidth 56
D. Bandwidth 56kbps

Answer: C
Explanation:
Use bandwidth 56 to set the bandwidth to 56kbps. Chapter: 6

QUESTION NO: 3
You are a technician at TestKing. Your newly appointed TestKing trainee wants to know which LAN switch method holds the packet in memory until the data portion of the packet reaches the switch.

What would your reply be?

A. Cut-through
B. Store and forward
C. Frag-free
D. None of the above

Answer: C
Explanation:
The method for switching that reads into the data portion is frag-free. This prevents the switch from forwarding runt packets (collisions.) Chapter: 6

QUESTION NO: 4
What is the most common layer 2 device?

A. Hub
B. Bridge
C. Switch
D. Router

Answer: C
Explanation:
A switch segments the network and uses an ASIC for fast switching. It has become the most common layer two device. Chapter: 6

QUESTION NO: 5
What is used to find the hardware address of a device on a LAN?

A. Inverse-ARP
B. Reverse-ARP
C. Interior-ARP
D. ARP

Answer: D
Explanation:
When a device needs to resolve a logical address to the physical Ethernet address (MAC), it uses the Address Resolution Protocol (ARP.) Chapter: 6

QUESTION NO: 6
What are the two most common request/reply pair with ICMP messages when using the ping command?

A. Echo request and Echo reply
B. ICMP hold and ICMP send
C. ICMP request and ICMP reply
D. Echo off and Echo on

Answer: A
Explanation:
The ICMP protocol uses Echo request and Echo reply with the Ping command
Chapter: 6

QUESTION NO: 7
What do you call it when a frame is placed into another type of frame?

A. Framing
B. De-encapsulation
C. Encapsulation
D. De-framing

Answer: C
Explanation:
When a frame is placed inside another frame it is know as encapsulation. To restore the frame to its original state is De-Encapsulation. Chapter: 6

QUESTION NO: 8
Which technology is used by Catalyst switches to resolve topology loops and ensure data flows properly though a single network path?

A. VTP
B. ISL
C. 802.1Q
D. STP

Answer: D

Explanation:
Catalyst switches use the STP (spanning tree protocol) to prevent loops and to ensure data flows through a single network path. Chapter: 6

QUESTION NO: 9
Which command displays all the commands in the history buffer?

A. Show history
B. Show buffers
C. Show typed commands
D. Show terminal buffer

Answer: A
Explanation:
The router will buffer previously entered commands, To see the contents of the buffer you enter the show history command. Chapter: 6

QUESTION NO: 10
What does IP standard access lists filter on?

A. The source and destination addresses
B. The destination port number
C. The destination address
D. The source address

Answer: D
Explanation:
The standard IP access-list will only filter on the source address contained in the packet.
Chapter: 6

QUESTION NO: 11
When enabling EIGRP routing, what parameters must you apply?

A. broadcast address, and AS number
B. network number and AS number
C. igrp routing, network number, and passive interface
D. igrp routing, network number, and AS

Answer: D
Explanation:
To enable EIGRP on your router, you must specify EGRP routing, the network number, and the AS system number. Chapter: 6

QUESTION NO: 12
What is a connection protocol at the Host to Host layer?

A. ARP
B. RARP
C. TCP
D. UDP
E. IP
F. ICMP
G. BootP

Answer: C
Explanation:
Transport Protocol is a connection protocol that resides at the Host to Host layer of the DOD stack and handles connection oriented communication. Chapter: 6

QUESTION NO: 13
IGRP sends a complete routing table to its neighbors how often by default?

A. every 5 minutes
B. every 90 seconds
C. every 60 seconds
D. every 30 seconds

Answer: B
Explanation:
IGRP enabled routers send their complete routing table to all their neighbors every 90 seconds. Chapter: 6

QUESTION NO: 14

Which network mask should you place on a Class C network to accommodate a user requirement of ten ,subnetworks?

A. 255.255.255.192
B. 255.255.255.224
C. 255.255.255.240
D. 255.255.255.248

Answer: C
Explanation:
With a requirement of ten sub-networks how many bits of subnetting will give you at least ten subnets. Using 4 bits for subnetting gives you 14 subnets. Chapter: 6

QUESTION NO: 15
What is the maximum distance of 10BaseT?

A. 100 meters
B. 100 yards
C. 200 meters
D. 200 yards

Answer: A
Explanation:
The distance standards are in meters and 10BaseT has a distance restriction of 100 meters. Chapter: 6

QUESTION NO: 16
Which of the following is not a distance-vector routing protocol?

A. RIP
B. IPX RIP
C. IGRP
D. OSPF

Answer: D
Explanation:
Only OSPF is a true link-state protocol. The others are distance-vector protocols.
Chapter: 6

QUESTION NO: 17
Which of the following layers from the TCP/IP model corresponds to the network layer in the OSI Model?

A. Application
B. Internet
C. Transport
D. Network
E. Data Link

Answer: B
Explanation:
The DOD model consists of the Application/Process, Host to Host, Internet and Network Access layers. The only answer with a DoD model layer (also called the TCP/IP model), is the Internet layer Chapter: 7

QUESTION NO: 18
You are a technician at TestKing. You are considering the pros and cons of a connectionless service. Which of the following are characteristics of a connectionless service? (Select Two)

A. Reliable
B. Non-reliable
C. Less bandwidth-intensive
D. Handshaking

Answer: B, C
Explanation:
The Transport layer is a good example of how both a connectionless and connection oriented service works. UDP is a connectionless services and is considred unonreliable, but uses less bandwidth then a connection oriented service.
TCP is a connection oriented service and is considered reliable because it uses handshaking to create the service and acknowledgments. Chapter: 7

QUESTION NO: 19
Which of the following OSI layers is used to determine the best path to a network?

A. Data Link
B. Session

C. Physical
D. Presentation
E. Network
F. Transport

Answer: E
Explanation:
The Network layer (Internet layer in the DOD model) provides logical addressing and routing through an internetwork. Chapter: 7

QUESTION NO: 20
You are a technician at TestKing. You are working within the Cisco IOS. Which of the following functions does the up arrow key provide?

A. Recalls the previous command line
B. Moves the cursor one line up
C. Redisplays the current command line
D. Capitalizes the command line

Answer: A
Explanation:
The up arrow key is used to recall the previous command line entry.
Chapter: 7

QUESTION NO: 21
Which command must be entered when connecting two routers WITHOUT external DCE devices?

A. serial up
B. clockrate
C. clock rate
D. dce rate
E. dte rate

Answer: C
Explanation:
The clock rate command (two words), is used to provide clocking on a line where no DCE device is located.
Chapter: 7

QUESTION NO: 22
Which of the following statements regarding routed and routing protocols are true? (Select 2 choices)

A. A routed protocol is assigned to an interface and determines the method of packet delivery
B. A routing protocol determines the path of the packet through a network
C. A routed protocol determines the path of the packet through a network
D. A routing protocol operates at the transport layer of the OSI model
E. A routed protocol updates the routing table of a router

Answer: A, B
Explanation:
Routed protocols (example, IP and IPX) is used to provide logical network address and provides framing of a packet on a LAN.
Routing protocols (example RIP and OSPF) are used to determine the path of a packet through the network by updating the routing table on a router. Chapter: 7

QUESTION NO: 23
When powering up a router, which of the following types of memory normally stores the start-up configuration?

A. RAM
B. ROM
C. FLASH
D. NVRAM

Answer: D
Explanation:
The startup-config, if placed there by an administrator, is stored in the Non-Volatile RAM. Chapter: 7

QUESTION NO: 24
Based on the debug output shown, what type of handshake occurred for PPP authentication?
#debug ppp authentication
ppp serial1: Send CHAP challenge id=34 to remote
ppp serial1: CHAP challenge from P1R2
ppp serial1: CHAP response received from P1R2
ppp serial1: CHAP response id=34 received from P1R2

ppp serial1: Send CHAP success id=34 to remote
ppp serial1: Remote passed CHAP authentication
ppp serial1: Passed CHAP authentication
ppp serial1: Passed CHAP authentication with remote

A. one-way
B. two-way
C. three-way
D. no handshakes required during authentication

Answer: C
Explanation:
CHAP uses a three-way handshake. After the PPP link is established, the host sends a "challenge" message to the remote node. The remote node responds with a value calculated using a on-way hash function. The host checks the response against its own calculation of the expexted hash value. If the hash value match, the authentication is acknowledged; otherwise, the conenction is terminated. Chapter: 7

QUESTION NO: 25
Which of the following commands will send and receive ICMP echo messages to verify connectivity from host to host?

A. ping
B. tracert
C. netstat
D. show cdp neighbors detail
E. show ip route
F. traceroute

Answer: A
Explanation:
Packet Internet Groper uses ICMP echo requests and replies to verify network connectivity Chapter: 7

QUESTION NO: 26
You are the network administrator at TestKing Co. You receive a call from a TestKing user who is unable to reach a server at a remote site. After further review you discover the following information about the user's computer.

Local PC 190.0.3.35/24
Default Gateway 190.0.3.1

Remote Server 190.0.5.250/24
You then conduct the following tests from the offending local PC
Ping 127.0.0.1 - Unsuccessful
Ping 190.0.3.35 - Successful
Ping 190.0.3.1 - Unsuccessful
Ping 190.0.5.250 - Unsuccessful

Which of the following problems would create the test results listed above?

A. TCP/IP not correctly installed
B. Local physical layer problem
C. NIC not functioning
D. Remote physical layer problem

Answer: A
Explanation:
If you cannot ping the loopback address of 127.0.0.1, then something is wrong with the TCP/IP protocol stack.
Chapter: 7

QUESTION NO: 27
You are a network technician at TestKing. You have just finished configuring a router on the TestKing network. The changes have been successfully entered and everything is working properly.
You then save your changes and reboot the router. None of your changes are active after the reboot. However, when you look at the contents of the startup config, your changes are there.
Which of the following indicates the source of the problem?

A. Hardware failure in NVRAM prevents the router from loading the config
B. Startup-config in flash is corrupt and cannot be analyzed
C. Router configuration-register set to bypass startup configuration
D. Startup-config in NVRAM is corrupt and cannot be analyzed

Answer: C
Explanation:
The default configuration-register setting of 0x2102 loads the IOS from flash and the configuration from NVRAM.
However, for password recovery, you can set the register to 0x2142 and the startup-config file in NVRAM will be bypassed. Chapter: 7

QUESTION NO: 28

You are a technician at TestKing. Your newly appointed TestKing trainee wants to know what the word "any" mean in the following extended access list statement:

Access-list 101 permit tcp any 192.168.10.0 0.0.0.255 eq tcp

What would your reply be?

A. check any of the bits in the source address
B. permit any wildcard mask for the address
C. accept any source address
D. check any bit in the destination address
E. permit 255.255.255.255 0.0.0.0
F. accept any destination

Answer: C
Explanation:
The "any" in this list is the source address to filter. If it is set to any or "0.0.0.0 255.255.255.255", then any source address will be filtered. Chapter: 7

QUESTION NO: 29
By looking at the following configuration, Which additional command must be issued on the Branch router before interesting traffic will be sent to the Remote router?
Hostname: Branch Hostname: Remote
PH# 123-6000, 123-6001 PH# 123-8000, 123-8001
SPID1: 32055512360001 SPID1: 32055512380001
SPID2: 32055512360002 SPID2: 32055512380002
isdn switch-type basic ni
username Remote password cisco
interface bri0
ip address 10.1.1.1 255.255.255.0
encapsulation ppp
ppp authentication chap
isdn spid1 32055512360001
isdn spid2 32055512360002
dialer map ip 10.1.1.2 name Remote 1238001
dialer-list 1 protocol ip permit

A. (config-if)# dialer-group 1
B. (config-if)# dialer-list 1
C. (config-if)# dialer map 1
D. (config-if)# dialer-route 1

Answer: A
Explanation:
The "dialer-group #" command tells the access-list (used with the dialer-list # command), which interface to activate when it finds interesting traffic. The numbers at end of each command must match. Chapter: 7

QUESTION NO: 30
In Frame Relay, what are DLCIs used for?

A. They determine the Frame Relay encapsulation type
B. They indentify the logical circuit between a local router and a Frame Relay WAN switch
C. They represent the keepalives used to maintain the PVC in an active state
D. They represent the physical address of the router attached to a Frame Relay network

Answer: B
Explanation:
Data Link Connection Identifiers are the "hardware address" on a Frame Relay network. They identify a routers PVC to the Frame Relay switch. Chapter: 7

QUESTION NO: 31
Which of the following WAN services uses two data link layer encapsulations, one for data and one for signaling?

A. ISDN
B. Frame Relay
C. ATM
D. FDDI

Answer: A
Explanation:
ISDN uses "out-of-band" signaling, which means that the clocking is done on the "D" (data) channel and not the same channels as the actual data. Chapter: 7

QUESTION NO: 32
Which of the following statements is true in regards to Frame Relay Multipoint subinterfaces?

A. An ip address is required on the physical interface

B. All routers are required to be fully meshed
C. All routers must be in the same subnet to forward routing updates and broadcasts
D. Multipoint is the default configuration for Frame Relay subinterfaces

Answer: C
Explanation:
Unlike Frame Relay point-to-point connections, multipoint Frame Relay router interfaces must all be in the same subnet. Chapter: 7

QUESTION NO: 33
You are a technician at TestKing. You have just connected a new host to a workgroup switch on the TestKing network. The new host's Layer 3 configuration is correct. However, the host is unable to access the server resources in its network segment. Which of the following is most likely causing the problem?

A. The router lacks a routing table entry for the new host
B. The host switch port is assigned to the incorrect VLAN
C. The host MAC address is incorrectly configured
D. A VIP instance for the new host has not been initialized

Answer: B
Explanation:
Virtual LANs break up broadcast domains in a layer-two switched internetwork. If a host is in a different VLAN then the network services it needs to use, the packets must go through a router. Answer B is the best answer for this question. Chapter: 7

QUESTION NO: 34
Which of the following is the decimal and hexadecimal equivalent of this binary number 10101010?

A. Decimal=160, hexidecimal=00
B. Decimal=170, hexidecimal=AA
C. Decimal=180, hexidecimal=BB
D. Decimal=190, hexidecinal=CC

Answer: B
Explanation:
For the binary equivalent of 10101010 to Decimal, the answer is 128+32+8+2=170.

For Hexadecimal, break up the binary number into two bytes of 1010 and 1010. Each one in binary is then 10 and 10, which is A and A in hexadecimal. Chapter: 7

QUESTION NO: 35
Given the the following network diagram, assume that port 1 through 3 are assigned to VLAN 1 and ports 4 through 6 are assigned to VLAN 2 on each switch. Click on the Exhibit button to view the network.
The switches are interconnected over a trunked link. Which of the following conditions would verify VLAN and trunk operation? (choose 3)

A. Host 1-1 can ping Host 1-2
B. Host 1-1 can ping Host 4-2
C. Host 1-1 can not ping Host 1-2
D. Host 4-1 can not ping Host 1-2
E. Host 4-1 can ping Host 4-2

Answer: A, D, E
Explanation:
If you do not have a router, then only hosts in the same VLAN will be able to ping each other. Chapter: 7

QUESTION NO: 36
You are the network administrator at TestKing.com. TestKing.com has a switched network. You need to add a new VLAN, named Debits, to the network. Which of the following are true regarding configuration of this vlan? (Choose 3)

A. The VLAN must be created
B. The VLAN must named
C. An IP address must be configured for the ACCOUNTS VLAN
D. The desired ports must be added to the new VLAN
E. The VLAN must be added to the STP Domain

Answer: A, B, D
Explanation:
The best answers are A, B, D. You must create the VLAN, name it, then assign ports. An IP address is not necessary, although, it is typically performed. Chapter: 7

QUESTION NO: 37

Which of the following commands should be used to display RIP routing updates as they are sent and received by the router?

A. Show ip protocols
B. Show ip route rip
C. Debug ip rip
D. Debug ip updates
E. Debug ip transactions

Answer: C
Explanation:
The command debug ip rip will display routing updates as they as sent and received by a router. Chapter: 7

QUESTION NO: 38
You are the network administrator at TestKing.com. You have just configured a new router that you attached to the TestKing network. You ping the directly connected serial port of the directly neighboring router. The ping is unsuccessful.
The show running-config output displays the word "shutdown" for the serial interface.
Which of the following lines will be displayed in the show interface s0 output?

A. Serial 0 is up, line protocol is down
B. Serial 0 is down, line protocol is down
C. Serial 0 is down, line protocol is up
D. Serial 0 is administratively down, line protocol is down
E. Serial 0 is administratively down, line protocol is up
F. Serial 0 is administratively up, line protocol is down

Answer: D
Explanation:
If an interface is shutdown, it will show "administratively down and line protocol down"
Chapter: 7

QUESTION NO: 39
Hosts in the TestKing sales department are unable to access a new server at the Remote Office. The servers IP address is 192.168.40.96/28. Why can't the server be reached?
Click on the exhibit button to view the network configuration.
Which of the following is most likely causing the problem?

A. The default gateway of the workstations in the sales department is incorrect

B. The subnet mask of the workstations in the sales department is incorrect
C. The default gateway of the server at the Remote Office is invalid
D. The host address of the server at the Remote Office is invalid
E. The serial 0 interface on the Home Office router and the serial 1 interface are not on the same subnetwork

Answer: D
Explanation:
The IP address of the server is 192.168.40.96/28. This is an invalid host address.
Chapter: 7

QUESTION NO: 40
Which of the following bit patterns is for a Class B address?

A. 0xxxxxxx
B. 10xxxxxx
C. 110xxxxx
D. 1110xxxx
E. 11110xxx

Answer: B
Explanation:
Class A addresses start with 0, class B with 10 and class C with 110. Chapter: 7

QUESTION NO: 41
You are a technician at TestKing. You add a new workstation to the Testking network. The workstation is to be used by a new employee.
The employee is unable to connect to the server at IP address 192.168.10.98/27.
Identify the incorrectly configured network parameter.
Examine the exhibit.

A. Workstation IP address
B. Workstation subnet mask
C. Workstation default gateway
D. Router interface E0 ip address

Answer: C
Explanation:

The default gateway should be set to .65 Chapter: 7

QUESTION NO: 42
Which symbol in the router prompt indicates you are in the privileged mode?

A. >
B. #
C. ?
D. *

Answer: B
Explanation:
When you enter the privileged mode by typing enable the router prompt will change to a # character. Chapter: 6

Note:
Section A contains 332 questions.
Section B contains 42 questions.
The total number of questions is 374.
Each section starts with QUESTION NO :1. There are no missing questions.