1. What is the OSI model?
   A. A conceptual framework that specified how information travel through networks
   B. A model that describes how data makes its way from one application program to another throughout a network
   C. A conceptual framework that specifies which network occur at each layer
   D. All of above
   Answer: D

2. Which OSI layer is responsible for logical addressing?
   A. Data link
   B. Physical
   C. Transport
   D. Network
   Answer: D

3. Which of the following represents 203.128.56.10 in binary format
   A. 11001011.10000000.00111000.00001001
   B. 11001011.10000000.00111000.00001010
   C. 11001010.10000000.00111000.00001001
   D. None of these
   Answer: B

4. The TCP/IP protocol suite has specifications for which layers of the OSI model?
   A. 1 through 3
   B. 1 through 4 and 7
   C. 3 through 7
   D. 1, 3, and 4
   Answer: C

5. What is the decimal number 151 in binary?
   A. 10100111
   B. 10010111
   C. 10101011
   D. 10010011
   Answer: B
6. Which of the following is true concerning the function of a switch?

   A. Switches increase the sizes of collision domains
   B. Switch combine connectivity of a hub with the traffic regulation of a bridge
   C. Switches segment networks by separating broadcast domains
   D. Switches perform layer 4 path selection

   **Answer:** B

7. Which OSI later defines voltage levels, maximum transmission distance, and physical connectors?

   A. Application
   B. Transport
   C. Physical
   D. Data transport

   **Answer:** C

8. What service offers secure, reliable connectivity over a shared public network infrastructure?

   A. Internet
   B. Virtual private network
   C. Virtual public network
   D. Wide-area network

   **Answer:** B

9. Sequencing, acknowledgments, and flow control are characteristics of which OSI layer?

   A. Layer 4 (transport)
   B. Layer 3 (network)
   C. Layer 5 (session)
   D. Layer 2 (data link)

   **Answer:** A

10. Which OSI layer is responsible for reliable data transport?

    A. Transport
    B. Application
    C. Data Link
    D. Network

    **Answer:** A
11. Which best describes broadcasting?
   A. Sending a single frame to many stations at the same time
   B. Sending a single frame to all routers to simultaneously update their routing tables
   C. Sending a single frame to all routers at the same time
   D. Sending a single frame to all hubs and bridges at the same time
   Answer: A

12. The network area within which data packets originate and collide is called a
   A. Collision domain
   B. Network domain
   C. Broadcast domain
   D. Network segment
   Answer: A

13. Which best describes a CSMA/CD network?
   A. One node transmission traverses the entire network and is received and examined by every node.
   B. Signals are sent directly to the destination if the source knows both the max and ip addresses
   C. One node transmission goes to the nearest router, which sends it directly to the destination
   D. Signals are always sent in broadcast mode
   Answer: A

14. What is the name of the method in Ethernet that explains how Ethernet works?
   A. TCP/IP
   B. CSMA/CD
   C. CMDA/CS
   D. CSMA/CA
   Answer: B

15. You are a technician at XYZ. You tell your newly appointed XYZ trainee about public networks IP Address classes. Your trainee now wants to know if all the IP Address Classes can be assigned for public use. What would your reply be?
   A. All except Class E addresses.
   B. Only Class A and Class B addresses.
C. Only Class B and Class C addresses.
D. All except Class D and Class E addresses.
E. Only Class A, Class C and Class E addresses.

Answer: D

16. Which of the following IP addresses for the network 124.16.32.55/28 can be assigned to hosts? (Choose three)

A. 124.16.32.45
B. 124.16.32.48
C. 124.16.32.57
D. 124.16.32.60
E. 124.16.32.62
F. 124.16.32.63

Answer: C, D, E

17. Q17 XYZ has been assigned the IP address 189.66.1.0 by its Internet Service Provider. Your newly appointed XYZ trainee wants to know how many hosts will be supported on each subnet if you divide the network by using the 255.255.255.224 subnet mask. What would your reply be?

A. 14
B. 16
C. 30
D. 32
E. 62
F. 64

Answer: C The subnet mask 255.255.255.224 is a 27 bit mask

18. Which of the following IP addresses is a private IP address?

A. 12.0.0.1
B. 168.172.19.39
C. 172.20.14.36
D. 172.33.194.30
E. 192.168.42.34

Answer: C, E

19. You are the newly appointed XYZ trainee. Your supervisor tells you that the IP address for your workstation is 172.16.209.10/22. He wants to know what the subnetwork number of your workstation is. What will your reply be?
20. Which of the following addresses can be assigned to network hosts when given a subnet mask of 255.255.255.224? (Choose all that apply.)

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

21. You are a network technician at XYZ. XYZ has a class C network license. The company requires 5 usable subnets. Each subnet must accommodate at least 18 hosts. Which network mask should you use?

A. 225.225.224.0.
B. 225.225.240.0.
C. 225.225.255.0.
D. 255.255.255.224
E. 225.225.255.240

Answer: D 255.255.255.224

22. You are a technician at XYZ. XYZ plans to implement a public network. The company's ISP suggested that XYZ register a Class IP address. The XYZ CEO wants to know how many usable IP addresses are provided in a Class C address. What would your reply be?

A. 128
B. 192
C. 254
D. 256
E. 510

Answer: C

Explanation:
Class C addresses range from 192.0.0.1 through 223.225.225.225 and default subnet mask of 255.255.255.0. In Class C addresses, the first 24 bits are used as for the network ID while only
the last 8 bits is used for the host ID. Using the 2n-2 formula, we can calculate that Class C addresses can support a maximum of 16,777,214 (224-2) networks and 254 (28-2) hosts.

23. A router receives a packet on interface 172.16.45.66/26. The source IP of the packet is 172.16.45.127/26 and the destination is 172.16.46.191/26. How will the router handle the packet?

A. The destination is a host on another subnet, so the router will not forward the packet.
B. The destination is a host on the same subnet, so the router will forward the packet.
C. The destination is a broadcast address, so the router will not forward the packet.
D. The destination is a network address, so the router will forward the packet.

Answer: C
Explanation:
/26 means 2-bits of subnetting. There will be 4 subnets having 64 hosts in each subnet. Subnets will be
172.16.46.0 -------- 172.16.46.63 (0-63)
172.16.46.64 -------- 172.16.46.127 (64-127)
172.16.46.128 -------- 172.16.46.191 (128-191)
172.16.46.192 -------- 172.16.46.255 (192-255)
The destination address is 172.16.46.191 which indicates a BROADCAST address so, router will not process this broadcast.

24. Study the Exhibit below carefully:

Which of the following is the correct IP address configuration for HostA?

A. IP 192.168.100.31 255.255.255.240 default-gateway 192.168.100.18
B. IP 192.168.100.30 255.255.255.240 default-gateway 172.16.1.1
C. IP 192.168.100.20 255.255.255.240 default-gateway 192.168.100.17
D. IP 192.168.100.21 255.255.255.248 default-gateway 192.168.100.17
E. IP 192.168.100.19 255.255.255.248 default-gateway 172.16.1.1

Answer: C

Explanation:

<table>
<thead>
<tr>
<th>Subnet</th>
<th>Mask</th>
<th>Subnet Size</th>
<th>Host Range</th>
<th>Broadcast</th>
</tr>
</thead>
<tbody>
<tr>
<td>192.168.100.16</td>
<td>255.255.255.240</td>
<td>14</td>
<td>192.168.100.17-30</td>
<td>192.168.100.31</td>
</tr>
</tbody>
</table>

Incorrect Answers:
A: The IP address 192.168.100.31 is the broadcast address. It cannot be used for the host.
B: The default gateway should be the first exit point for the network that the host is on. In this case it should be the router interface address 192.168.100.17.
D: The network uses a 28 bit subnet mask (11111111.11111111.11111111.11110000). This equates to 255.255.255.240, not 255.255.255.248.
E: The network uses a 28 bit subnet mask (11111111.11111111.11111111.11110000). This equates to 255.255.255.240, not 255.255.255.248. Also, the default gateway should be the first exit point for the network that the host is on. In this case it should be the router interface address 192.168.100.17.

25. Which of the statements mentioned below will describe the network as illustrated in the exhibit? (Select two options.)

A. There are two broadcast domains in the network.
B. There are four broadcast domains in the network.
C. There are six broadcast domains in the network.
D. There are four collision domains in the network.
E. There are five collision domains in the network.
F. There are seven collision domains in the network.
26. What are the benefits of using a router to segment the network at a main office? (Select two options.)

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

Answer: A, D

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

27. You are a network technician at XYZ. You use a Cisco router to divide the XYZ network into two separate segments, XYZ 1 and XYZ 2. The XYZ CEO is concerned about the cost, and wants to know what the purpose of your action is. What should you tell him?

A. It decreases the number of broadcast domains.
B. It makes broadcasting domains more efficient between segments.
C. It increases the number of collisions.
D. It prevents segment 1's broadcasts from getting to segment 2.
E. It connects segment 1's broadcasts to segment 2.

Answer: D

Explanation:
A router does not forward broadcast traffic. It therefore breaks up a broadcast domain, reducing unnecessary network traffic.

28. You are a technician at XYZ. You tell your newly appointed XYZ trainee that Ethernet networks are broadcast domains and collision domains. Your trainee wants to know how the hosts on an Ethernet network will know when to resume transmissions after a collision has occurred. What would your reply be? (Choose all that apply.)

A. The destination host sends a request to the source for retransmission.
B. The jam signal indicates that the collision has been cleared.
C. The hosts will attempt to resume transmission after a time delay has expired.
D. An electrical pulse indicates that the collision has cleared.
E. The router on the segment will signal that the collision has cleared.

Answer: C

Explanation:
1. A device with a frame to send listens until Ethernet is not busy.
2. When the Ethernet is not busy, the sender begins sending the frame.
3. The sender listens to make sure that no collision occurred.
4. Once the senders hear the collision, they each send a jamming signal, to ensure that all stations recognize the collision.
5. After the jamming is complete, each sender randomizes a timer and waits that long.
6. When each timer expires, the process starts over with step 1.

29. You are the network administrator at XYZ. Your newly appointed XYZ trainee wants to know what router functions are. What will your reply be? (Choose three.)

   A. Packet switching
   B. Collision prevention on a LAN segment.
   C. Packet filtering
   D. Broadcast domain enlargement
   E. Broadcast forwarding
   F. Internetwork communication

   **Answer:** A, C, F

   **Explanation:**
   
   Router is a layer 3 device. Packet switching and packet filtering are based on IP information (layer 3). Internetwork communication (routing) is the major function of a router. Answers with packet must be something related to router because package contains information of IP.

30. Network topology Exhibit
If host B sends a frame to host C, how will the switch act?

A. Drop the frame
B. Send the frame out all ports except port 0/2
C. Return the frame to host B
D. Send an ARP request for host C
E. Send an ICMP Host Unreachable message to host B
F. Record the destination MAC address in the switching table and send the frame directly to Host C

Answer: B

Explanation:
An Ethernet switch appears to use the same logic as a transparent bridge. However, the internal logic of the switch is optimized for performing the basic function of choosing when to forward and when to filter a frame. Just as with a transparent bridge, the basic logic of a LAN switch is as follows:

Step 1  A frame is received.
Step 2  If the destination is a broadcast or multicast, forward on all ports.
Step 3  If the destination is a unicast and the address is not in the address table, forward on all ports.

Step 4  If the destination is a unicast and the address is in the address table, forward the frame out the associated port, unless the MAC address is associated with the incoming port.

31. Network topology exhibit
Study the network topology exhibit carefully, in particular the two switches XYZ 1, XYZ 2, and the router XYZ 3.

Which statements are true in this scenario? Select two.

A. All the devices in both networks will receive a broadcast to 255.255.255.255 sent by host A.
B. Only the devices in network 192.168.1.0 will a broadcast to 255.255.255.255 sent by host A.
C. All the devices on both networks are members of the same collision domain.
D. The hosts on the 192.168.1.0 network form one collision domain, and the hosts on the 192.168.2.0 network form a second collision domain.
E. Each host is in a separate collision domain.

Answer: B, E

32. What command must be entered on the DCE device to enable serial communication at a speed of 64 kilobits per second?

A. Router(config)#clock rate 64000
B. Router(config-if)#interface-type dce
C. Router(config-if)#bandwidth 64
D. Router(config-if)#clock rate 64000

Answer D is correct. Answer A is incorrect because it is executed at the wrong command prompt. Answer B is incorrect because it is invalid syntax, and Answer C is incorrect because it sets the bandwidth for routing metrics, not the required DCE clock speed.

33. Which of the following applies an encrypted password of cisco to the Privileged Exec prompt?

A. enable password cisco
B. enable password cisco encrypted
C. enable cisco secret
D. enable secret cisco
Answer D is correct. The enable secret cisco applies to an encrypted password cisco. Answer A is incorrect; it is a valid syntax but does not encrypt the password. Answers B and C are not valid syntax.

34. What commands apply a password of “Vienna” to the first five Telnet connections on a router?
   A. line vty 5
      login
      password Vienna
   B. line vty 0 4
      login
      password vienna
   C. interface vty 0 4
      login
      password Vienna
   D. line vty 0 4
      login
      password Vienna

Answer D is correct both in syntax and exact password match. Answer A is incorrect; we must specify a range for the vty lines, 0 through 4. Answer B is incorrect, although it is close to correct; however, the password does not match because it is not capitalized. Answer C is incorrect because it uses interface instead of line.

35. You examine the output of a show running-config command and notice two commands: enable password Cisco and enable secret CCENT. Later on, you establish a console connection to the switch and are prompted for a password to enter Privileged mode. Which password should you use?
   A. Cisco
   B. CCENT
   C. Both. The enable password is first, followed by the enable secret.
   D. Both. The enable secret is first, followed by the enable password.
   E. Neither. Access to a console connection already grants Privileged mode access.

B. In the event the enable password and enable secret are both configured on a device, the enable secret password is always used. A, C, and D. These statements are false because the enable secret will always be used. E. Access to a console connection does not automatically provide access to Privileged mode—that’s what the enable password or enable secret is for in the first place!
36. Which command can be used to verify which end of the connection is DCE?
   A. show interfaces
   B. show dce
   C. show serial dce
   D. show controllers

✓ D. Show controllers will display the DCE end of the connection.
A. This will display information about the interfaces, but won’t tell which is configured as DCE. B and C. These are not valid commands.

37. Assume you are installing a small SOHO network. Which interface on the router will be linked to the leased line connected to the Internet?
   A. Fast Ethernet 0/0
   B. Serial 0/0
   C. Console
   D. Aux

✓ B. Router serial ports are used to connect to leased-line WAN connections.
A, C, and D. The Ethernet interfaces service your client networks. The Console and Auxiliary ports are used for configuration.

38. You wish to configure a static route to network 192.168.2.0/24. The route must leave interface Serial 0 to the next hop address of 172.16.5.3. Which of the following commands will configure the route?
   A. ip route 172.16.5.3 192.168.2.0 255.255.255.0 serial 0
   B. ip route 192.168.2.0 255.255.255.0 serial 0 172.16.5.3
   C. ip route 172.16.5.3 serial 0 192.168.2.0 255.255.255.0
   D. ip route 192.168.2.0 255.255.255.0 172.16.5.3

✓ D. The correct syntax for a static route entry is ip route destination_network_id subnet_mask next_hop_address administrative_distance.
A, B, and C. These all exhibit incorrect syntax.

39. You issue a show ip route command. A sample output is provided next:
   R 172.16.2.0 [120/1] via 172.16.3.254, 00:00:17, Serial0/0
   Which of the following statements is/are true concerning the output shown?
   
   A. This is a directly connected route.
   B. This route was learned via RIP.
   C. The hop count metric on this route is 120.
   D. The hop count metric on this route is 1.
   E. The next hop address is 172.16.3.254.

A. This is a directly connected route.
C. The hop count metric on this route is 120.
✓ B, D, and E. The “R” indicates that the route was learned through RIP. The information in brackets shows the administrative distance and metric, respectively.
A and C. Both are false statements. A directly connected route would show “C” as the code. The administrative distance is displayed first in the brackets—the metric is shown second.

40. You wish to configure RIPv2 on RTR1, shown in the exhibit below. You issue the router rip command, and then the version 2 command. You now need to configure the network statements for RIP. Which network commands is correct?

A. network 192.168.1.0
B. network 192.168.1.0 255.255.255.0
C. network 172.16.2.0
D. network 172.16.2.0 255.255.255.0
E. network 172.16.3.0
F. network 172.16.3.0 255.255.255.0
G. network 172.16.0.0

✓ A and G. RIP only accepts entries on the classful boundary. Typing in the actual address of the interface, or of a subnet, would be silently corrected and added to the IOS as the classful entry. B through F. All these answers exhibit incorrect syntax since RIP accepts only on the classful boundary.

41. Which one of the following characteristics is true regarding the use of hubs and switches?
A. Hubs can have their ports be configured with VLANs
B. Using hubs is costly with regard to bandwidth availability.
C. Switches can not forward broadcasts.
D. Switches are more efficient than hubs in processing frames.
E. Switches increase the number of collision domains in the network.

Answer: E
Explanation: Switches increases the number of collisions domains in the network.
Switches that are configured with VLANs will reduce the size of the collision domains by increasing the number of collision domains in a network, but making them smaller than that of one big, flat network.
Incorrect Answers:
A. Switches are capable of VLAN configurations, but hubs are not.
B. Hubs are generally the least costly method possible to connect multiple devices together in a network.
C. Switches forward broadcasts and multicasts, by default, to all ports within the same VLAN. Only routers block all broadcast traffic by default.
D. Switches and hubs can be equally efficient in processing frames, in theory. In practice, switches are generally more efficient as they usually have more CPU and memory allocated to them, and are generally much more expensive than a simple hub.

42. When comparing and contrasting the similarities and differences between bridges and switches, which of the following are valid statements? Choose all the valid answer choices)

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.
F. None of the above statements are true.

Answer: B, C
Explanation:
Both bridges and switches 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.
Incorrect Answers:
A. Switches are generally faster than bridges. Bridges also do not necessarily have fewer ports than switches.
D. Both bridges and switches will forward broadcast and multicast traffic, assuming that the traffic remains in the same VLAN.
E. The use of VLANs in a switch can decrease the size of the collision domain, by creating additional, smaller collision domains.
43. Which of the following correctly describe the various functions and virtues of a router?  
(Select all valid answer choices)

A. Packet switching  
B. Collision prevention on a LAN segment.  
C. Packet filtering  
D. Broadcast domain enlargement  
E. Broadcast forwarding  
F. Internetwork communication  
G. None of the above

Answer: A, C, F

Explanation:
The main function of a router is to connect different, separated networks together. In doing so, switching packets from one network to another is a primary function, along with providing for communication between networks. As an additional feature, routers are capable of providing filtering on a network address and application port level, so choice C is also correct.

Incorrect Answers:
B. Routers can indeed be used to segment a network separate a collision domain, since routers do not forward LAN broadcasts and multicasts to other interfaces. However, routers alone can not prevent all collisions from occurring on any given LAN segment.
D. Routers actually segment LANs into smaller broadcast domains.
E. Routers do not forward broadcast and multicast traffic out the additional interfaces by default. Unless bridging or IP helpers are configured on the router, LAN broadcasts are blocked at the router level.

44. With regard to Ethernet media access methods, which of the following are true? (Choose all that apply.)

A. A device waits for an electronic signal before transmitting.  
B. A device listens and waits until the media is not busy before transmitting.  
C. All devices on an Ethernet segment see data that passes on the network medium.  
D. Only the sender and the receiver devices see data that passes on the network medium.  
E. Ethernet networks allow you to configured devises with higher transmission priority.

Answer: B, C

Explanation:
Ethernet uses the CSMA/CD access method.  
Leading the way in IT testing and certification tools, www.testking.com  
CSMA/CD logic helps prevent collisions and also defines how to act when a collision does occur.  
The CSMA/CD algorithm words like this:
1. A device with a frame to send listens until the Ethernet is not busy.
2. When the Ethernet is not busy, the sender begins sending the frame.
3. The sender listens to make sure that no collision occurred.
4. Once the senders hear the collision, they each send a jamming signal, to ensure that all stations recognize the collision.
5. After the jamming is complete, each sender randomizes a timer and waits that long.
6. When each timer expires, the process starts over with Step 1.
So, all devices on the Ethernet need to use CSMA/CD to avoid collisions and to recover when inadvertent collisions occur.
Reference: Cisco CCNA intro 640-821 p.55

45. The school district’s LAN consists of one large flat network. You decide to segment this LAN into two separate networks with a router. What will be the affect of this change?

A. The number of broadcast domains will be decreased.
B. It will make the broadcasting of traffic between domains more efficient between segments.
C. It will increase the number of collisions.
D. It will prevent segment 1’s broadcasts from getting to segment 2.
E. It will connect segment 1’s broadcasts to segment 2.

Answer: D
Explanation
A router does not forward broadcast traffic. It therefore breaks up a broadcast domain, reducing unnecessary network traffic. Broadcasts from one segment will not be seen on the other segment.
Incorrect Answers:
A. This will actually increase the number of broadcast domains from one to two.
B. All link level traffic from segment one to segment two will now need to be routed between the two interfaces of the router. Although this will reduce the traffic on the LAN links, it does also provide a less efficient transport between the segments.
C. Since the network size is effectively cut into half, the number of collisions should decrease dramatically.
E. Broadcasts from one segment will be completely hidden from the other segment.

46. In which circumstance are multiple copies of the same unicast frame likely to be transmitted in the school district’s Switched LAN?

A. During high traffic periods
B. In an improperly implemented redundant topology
C. After broken links are re-established
D. When upper-layer protocols require high reliability
E. When a dual ring topology is in use
F. None of the above
47. The network administrator issues the ping 192.168.2.5 command and successfully tests connectivity to a host that has been newly connected to the network. Which protocols were used during the test? (Choose two)

A. ARP
B. CDP
C. DHCP
D. DNS
E. ICMP

Answer: A, E

Explanation:
ARP finds the hardware address of a host from a known IP address. Here's how it works: when IP has a datagram to send, it must inform a Network Access protocol, such as Ethernet or Token Ring, of the destination's hardware address on the local network. (It has already been informed by upper-layer protocols of the destination's IP address.) If IP doesn't find the destination host's hardware address in the ARP cache, it uses ARP to find this information.

ICMP works at the Network layer and is used by IP for many different services. ICMP is a management protocol and messaging service provider for IP. Its messages are carried as IP datagrams. RFC 1256 is an annex to ICMP, which affords hosts' extended capability in discovering routes to gateways. Periodically, router advertisements are announced over the network, reporting IP addresses for the router's network interfaces. Hosts listen for these network infomercials to acquire route information. A router solicitation is a request for immediate advertisements and may be sent by a host when it starts up.

48. Why would a network administrator configure port security on a new switch?

A. To prevent unauthorized Telnet access to a switch port.
B. To limit the number of Layer 2 broadcasts on a particular switch port.
C. To prevent unauthorized hosts from accessing the LAN.
D. To protect the IP and MAC address of the switch and associated ports.
E. To block unauthorized access to the switch management interfaces over common TCP ports.
F. None of the above

Answer: C

Explanation:
You can use the port security feature to restrict input to an interface by limiting and identifying MAC addresses of the stations allowed to access the port. When you assign secure MAC addresses to a secure port, the port does not forward packets with source addresses outside the group of defined addresses. If you limit the number of secure MAC addresses to one and assign
a single secure MAC address, the workstation attached to that port is assured the full bandwidth of the port. If a port is configured as a secure port and the maximum number of secure MAC addresses is reached, when the MAC address of a station attempting to access the port is different from any of the identified secure MAC addresses, a security violation occurs.

Also, if a station with a secure MAC address configured or learned on one secure port attempts to access another secure port, a violation is flagged.

49. If an Ethernet port on router TK1 was assigned an IP address of 172.16.112.1/20, what is the maximum number of hosts allowed on this LAN subnet?

A. 2046
B. 1024
C. 4096
D. 8190
E. 4094
F. None of the above

Answer: E

50. Which of the following addresses can be assigned to a host when using a subnet mask of 255.255.254.0? (Select three)

A. 113.10.4.0
B. 186.54.3.0
C. 175.33.3.255
D. 26.35.2.255
E. 152.135.7.0
F. 17.35.36.0

Answer: B, D, E

Explanation:
These are all valid host IP addresses within the /23 subnet.

Incorrect Answers:
A. This is the network address for the 113.10.4.0/23 subnet.
C. This is the broadcast address for the 175.33.2.0/23 subnet.
F. This is the network address for the 17.35.36.0/23 subnet.

51. Which protocol automates all of the following functions for hosts on a network: IP configuration, IP addresses, subnet masks, default gateways, and DNS server information?

A. CDP
B. SNMP
C. DHCP
D. ARP
E. DNS
F. None of the above

Answer: C

Explanation:
DHCP uses the concept of the client making a request and the server supplying the IP address to the client, plus other information such as the default gateway, subnet mask, DNS IP address, and other information.

Incorrect Answers:
A. CDP is the Cisco Discovery Protocol. It is used by Cisco devices at the data link layer to obtain information about their directly connected neighbors.
B. SNMP is the Simple Network Management Protocol. This is used for the maintenance, management, and monitoring of network devices.
D. ARP is the Address Resolution Protocol, which is used to resolve layer 2 MAC addresses to layer 3 IP addresses.
E. DNS is the Domain Name Service. It is used to resolve domain names (for example, www.testking.com) to IP addresses. The IP address location of primary and secondary DNS resolver servers can be obtained for hosts using DHCP.

52. XYZ is migrating to a private IP addressing scheme. Which of the following describe the use of private IP addresses? (Choose two)

A. Addresses chosen by XYZ.com to communicate with the Internet.
B. Addresses that cannot be routed through the public Internet.
C. Addresses that can be routed through the public Internet.
D. A scheme to conserve public addresses.
E. Addresses licensed to enterprise or ISPs by an Internet registry organization.

Answer: B, D

Explanation:
Private IP address space has been allocated via RFC 1918. This means the addresses are available for any use by anyone and therefore the same private IP addresses can be reused. However they are defined as not routable on the public Internet. They are used extensively in private networks due to the shortage of publicly registered IP address space and therefore network address translation is required to connect those networks to the Internet.

53. You are a systems administrator and you are about to assign static IP addresses to various servers on your network. For the network 192.168.20.24/29 the router is assigned to the first usable host address, while the last usable host address goes to your Sales server. Which one of the following commands would you enter into the IP properties box of the sales server?
54. Router TK1 has just received a packet and needs to route it. What two actions must this router take in order to route incoming packets? (Choose two)

A. Inspect the routing table to select the best path to the destination network addresses.
B. Validate sources of routing information.
C. Inspect the ARP table to verify a legitimate source MAC address for each packet.
D. Identify the destination network address of each packet.
E. Verify the receipt of routed packets by the next hop router.
F. Identify the source network address of each packet.

Answer: A, D

Explanation:
The router decides how to forward an incoming packet by finding the routes that “match” the destination address of the packet, and then forwarding it according to the most narrowly applicable one. A packet matches a route in the following way: a packet has (among other things) a destination address in its header, a route contains either a network or a host address, a network mask (netmask), and instructions on how to forward a packet using the route. The packet matches the route if its destination address is part of the address subspace defined by the network address or exactly matches the host address of the route. A route is more narrowly
applicable than another if the address subspace defined by its network address contains fewer actual addresses than the other, which is indicated by the netmask. An entry with a host address, rather than a network address, is the narrowest kind.

55. After working on a router, some problems arise and you wish to view the commands that you recently entered. Which IOS command opens the history buffer and displays the most recently entered commands?

A. Show history  
B. Show buffers  
C. Show typed commands  
D. Show terminal buffer  
E. Show command  
F. None of the above

Answer: A

Explanation:
The router will buffer previously entered commands. By default, the "show history" command will display the previous ten commands that were entered. To see the contents of the buffer you enter the show history command.

Incorrect Answers:
B. This command will show the memory buffer information  
C, D. These are invalid commands.