

ITN Final Exam

1 What is the correct order for PDU encapsulation?

- | | | | | |
|--------------|----------------|------------------|------|---------------|
| Frame Header | Network Header | Transport Header | Data | Frame Trailer |
|--------------|----------------|------------------|------|---------------|
- | | | | | |
|----------------|------------------|--------------|------|---------------|
| Network Header | Transport Header | Frame Header | Data | Frame Trailer |
|----------------|------------------|--------------|------|---------------|
- | | | | | |
|------------------|----------------|--------------|------|---------------|
| Transport Header | Network Header | Frame Header | Data | Frame Trailer |
|------------------|----------------|--------------|------|---------------|
- | | | | | |
|------------------|--------------|----------------|------|---------------|
| Transport Header | Frame Header | Network Header | Data | Frame Trailer |
|------------------|--------------|----------------|------|---------------|

2 An administrator uses the Ctrl-Shift-6 key combination on a switch after issuing the **ping** command. What is the purpose of using these keystrokes?

- to restart the ping process
- to interrupt the ping process
- to exit to a different configuration mode
- to allow the user to complete the command

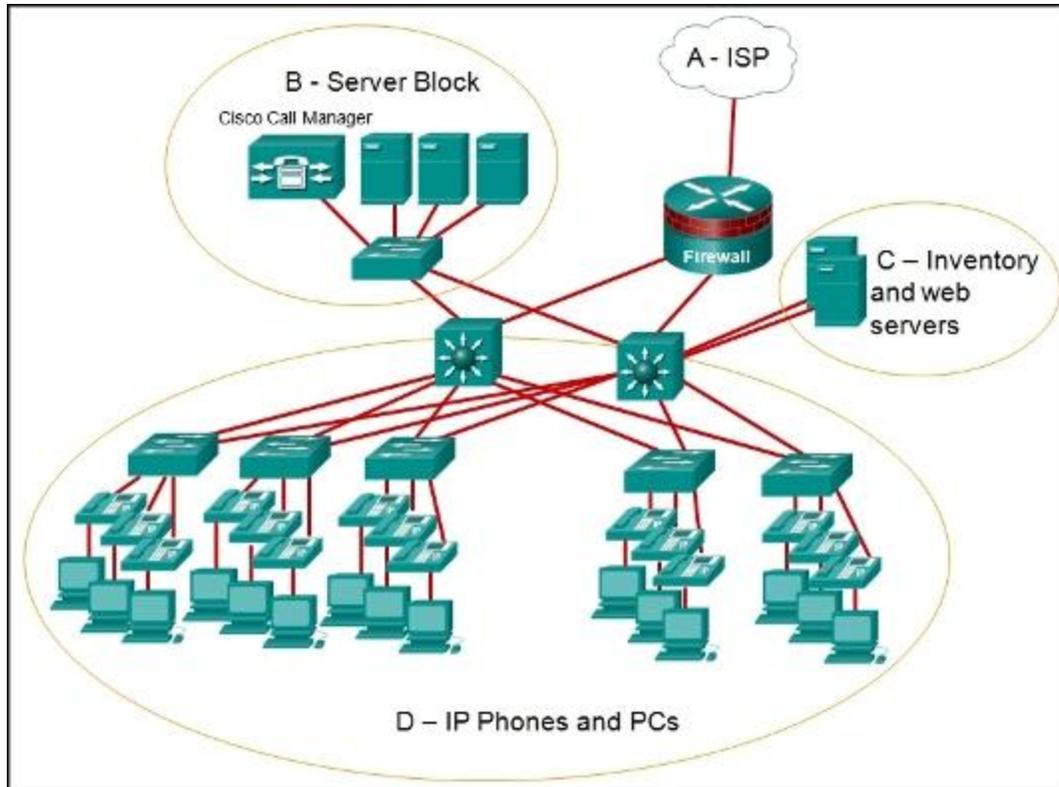
To interrupt an IOS process such as **ping** or **traceroute**, a user enters the Ctrl-Shift-6 key combination. Tab completes the remainder of parameters or arguments within a command. To exit from configuration mode to privileged mode use the Ctrl-Z keystroke. CTRL-R will redisplay the line just typed, thus making it easier for the user to press Enter and reissue the **ping** command.

3 What is the purpose of having a converged network?

- to provide high speed connectivity to all end devices
- to make sure that all types of data packets will be treated equally
- to achieve fault tolerance and high availability of data network infrastructure devices
- to reduce the cost of deploying and maintaining the communication infrastructure

With the development of technology, companies can now consolidate disparate networks onto one platform called a converged network. In a converged network, voice, video, and data travel over the same network, thus eliminating the need to create and maintain separate networks. This also reduces the costs associated with providing and maintaining the communication network infrastructure.

4



Refer to the exhibit.

Which area would most likely be an extranet for the company network that is shown?

- area A
- area B
- area C
- area D

An extranet is where an external entity accesses data of another company. This might be in the form of an inventory server used by a product supplier or a web server where the external entity accesses current information on the number of customers served that day. The Internet is represented by the cloud and area A. An Intranet is normally only used by internal personnel. Areas B and D are examples of an intranet.

5 What is an important function of the physical layer of the OSI model?

- It accepts frames from the physical media.
- It encapsulates upper layer data into frames.
- It defines the media access method performed by the hardware interface.
- It encodes frames into electrical, optical, or radio wave signals.

The physical layer of the OSI model accepts frames from the data link layer and encodes it for transport as bits across the network media.

6 Which procedure is used to reduce the effect of crosstalk in copper cables?

- requiring proper grounding connections
- twisting opposing circuit wire pairs together
- wrapping the bundle of wires with metallic shielding
- designing a cable infrastructure to avoid crosstalk interference
- avoiding sharp bends during installation

In copper cables, crosstalk is a disturbance caused by the electric or magnetic fields of a signal on one wire interfering with the signal in an adjacent wire. Twisting opposing circuit wire pairs together can effectively cancel the crosstalk. The other options are effective measures to counter the negative effects of EMI and RFI, but not crosstalk.

7 What will a Layer 2 switch do when the destination MAC address of a received frame is in the MAC table?

- It initiates an ARP request.
- It broadcasts the frame out of all ports on the switch.
- It notifies the sending host that the frame cannot be delivered.
- It forwards the frame out of all ports except for the port at which the frame was received.

A Layer 2 switch determines how to handle incoming frames by using its MAC address table. When an incoming frame contains a destination MAC address that is not in the table, the switch forwards the frame out all ports, except for the port on which it was received.

8 A technician uses the ping 127.0.0.1 command. What is the technician testing?

- the TCP/IP stack on a network host
- connectivity between two adjacent Cisco devices
- connectivity between a PC and the default gateway
- connectivity between two PCs on the same network
- physical connectivity of a particular PC and the network

127.0.0.1 is the local loopback address on any TCP/IP network device. By pinging this address, the technician is verifying the TCP/IP protocol stack on that particular device.

9 What is the auto-MDIX feature on a switch?

- the automatic configuration of an interface for 10/100/1000 Mb/s operation
- the automatic configuration of an interface for a straight-through or a crossover Ethernet cable connection
- the automatic configuration of full-duplex operation over a single Ethernet copper or optical cable
- the ability to turn a switch interface on or off accordingly if an active connection is detected

The auto-MDIX enables a switch to use a crossover or a straight-through Ethernet cable to connect to a device regardless of the device on the other end of the connection.

Which field in an IPv4 packet header will typically stay the same during its transmission?

- Flag
- Time-to-Live
- Packet Length
- Destination Address

The value in the Destination Address field in an IPv4 header will stay the same during its transmission. The other options might change during its transmission.

11 In which default order will a router search for startup configuration information?

- NVRAM, RAM, TFTP
- NVRAM, TFTP, setup mode
- setup mode, NVRAM, TFTP
- TFTP, ROM, NVRAM
- flash, ROM, setup mode

The startup configuration is normally stored in NVRAM. If the router does not locate a startup configuration in NVRAM, it will search for one on a TFTP server. Then if no startup configuration is found, the router prompts the user to create a new configuration in setup mode.

12 Which parameter does the router use to choose the path to the destination when there are multiple routes available?

- the lower metric value that is associated with the destination network
- the lower gateway IP address to get to the destination network
- the higher metric value that is associated with the destination network
- the higher gateway IP address to get to the destination network

When a packet arrives at the router interface, the router examines its header to determine the destination network. If there is a route for the destination network in the routing table, the router forwards the packet using that information. If there are two or more possible routes to the same destination, the metric is used to decide which route appears on the routing table. The lower the metric, the better the route.

13 A host is accessing a Telnet server on a remote network. Which three functions are performed by intermediary network devices during this conversation? (Choose three.)

- regenerating data signals
- acting as a client or a server
- providing a channel over which messages travel
- applying security settings to control the flow of data
- notifying other devices when errors occur

- serving as the source or destination of the messages
-

Intermediary devices provide management of data transmission by keeping track of data pathways, finding alternate pathways when failures occur and notifying other devices, and applying security and priority policies. As they receive data signals, intermediary devices "clean" and retransmit them. Intermediary devices do not create data signals, but rather they utilize network media to interconnect end users.

14 Three bank employees are using the corporate network. The first employee uses a web browser to view a company web page in order to read some announcements. The second employee accesses the corporate database to perform some financial transactions. The third employee participates in an important live audio conference with other corporate managers in branch offices. If QoS is implemented on this network, what will be the priorities from highest to lowest of the different data types?

- audio conference, financial transactions, web page
 - financial transactions, web page, audio conference
 - audio conference, web page, financial transactions
 - financial transactions, audio conference, web page
-

QoS mechanisms enable the establishment of queue management strategies that enforce priorities for different categories of application data. Thus, this queuing enables voice data to have priority over transaction data, which has priority over web data.

15 During normal operation, from which location does most Cisco switches run the IOS?

- RAM
 - flash
 - NVRAM
 - disk drive
-

When a Cisco switch is powered on, the IOS is copied into RAM. The switch then runs the IOS from RAM, thus enhancing operating performance.

16 A student user is looking for an ISP connection that provides high speed digital transmission over regular phone lines. What ISP connection type should be used?

- DSL
 - dial-up
 - satellite
 - cell modem
 - cable modem
-

17 Which connection provides a secure CLI session with encryption to a Cisco switch?

- a console connection
- an AUX connection
- a Telnet connection
- an SSH connection

A CLI session using Secure Shell (SSH) provides enhanced security because SSH supports strong passwords and encryption during the transport of session data. The other methods support authentication but not encryption.

18 Which address on a PC does not change, even if the PC is moved to a different network?

- IP address
- default gateway address
- MAC address
- logical address

The MAC address, also known as the physical or burned-in address, is encoded on hardware. The IP, or logical, address can be manually or automatically assigned, and changes as a PC is moved to a different network. As a PC is moved, its subnet mask and default gateway may also change to match those required for network operations.

19 After making configuration changes, a network administrator issues a **copy running-config startup-config** command in a Cisco switch. What is the result of issuing this command?

- The new configuration will be stored in flash memory.
- The new configuration will be loaded if the switch is restarted.
- The current IOS file will be replaced with the newly configured file.
- The configuration changes will be removed and the original configuration will be restored.

With the **copy running-config startup-config** command, the content of the current operating configuration replaces the startup configuration file stored in NVRAM. The configuration file saved in NVRAM will be loaded when the device is restarted.

20 On which switch interface would an administrator configure an IP address so that the switch can be managed remotely?

- FastEthernet0/1
- VLAN 1
- vty 0
- console 0

Interface VLAN 1 is a virtual interface on a switch, called SVI (switch virtual interface). Configuring an IP address on the default SVI, interface VLAN 1, will allow a switch to be accessed remotely. The VTY line must also be configured to allow remote access, but an IP address cannot be configured on this line.

21 What will happen if the default gateway address is incorrectly configured on a host?

- The host cannot communicate with other hosts in the local network.
- The switch will not forward packets initiated by the host.
- The host will have to use ARP to determine the correct address of the default gateway.
- The host cannot communicate with hosts in other networks.
- A ping from the host to 127.0.0.1 would not be successful.

When a host needs to send a message to another host located on the same network, it can forward the message directly. However, when a host needs to send a message to a remote network, it must use the router, also known as the default gateway. This is because the data link frame address of the remote destination host cannot be used directly. Instead, the IP packet has to be sent to the router (default gateway) and the router will forward the packet toward its destination. Therefore, if the default gateway is incorrectly configured, the host can communicate with other hosts on the same network, but not with hosts on remote networks.

22 A host PC has just booted and is attempting to lease an address through DHCP. What is the first message sent by the client to the server?

- DHCPDISCOVER
- DHCPOFFER
- DHCPREQUEST
- DHCPACK
- DHCPNACK

When a host uses DHCP to automatically configure an IP address, the typically sends two messages: the DHCPDISCOVER message and the DHCPREQUEST message. These two messages are usually sent as broadcasts to ensure that all DHCP servers receive them. The servers respond to these messages using DHCPOFFER, DHCPACK, and DHCPNACK messages, depending on the circumstance.

23 What method is used to manage contention-based access on a wireless network?

- CSMA/CD
- priority ordering
- CSMA/CA
- token passing

Carrier sense multiple access with collision avoidance (CSMA/CA) is used with wireless networking technology to mediate media contention. Carrier sense multiple access with collision detection (CSMA/CD) is used with wired Ethernet technology to mediate media contention. Priority ordering and token passing are not used (or not a method) for media access control.

24 Which technology provides a solution to IPv4 address depletion by allowing multiple devices to share one public IP address?

- ARP
- DNS
- NAT

- SMB
- DHCP
- HTTP

Network Address Translation (NAT) is a technology implemented within IPv4 networks. One application of NAT is to use a few public IP addresses to be shared by many internal network hosts which use private IP addresses. NAT removes the need for public addresses for every internal host. It therefore provides a solution to slow down the IPv4 address depletion.

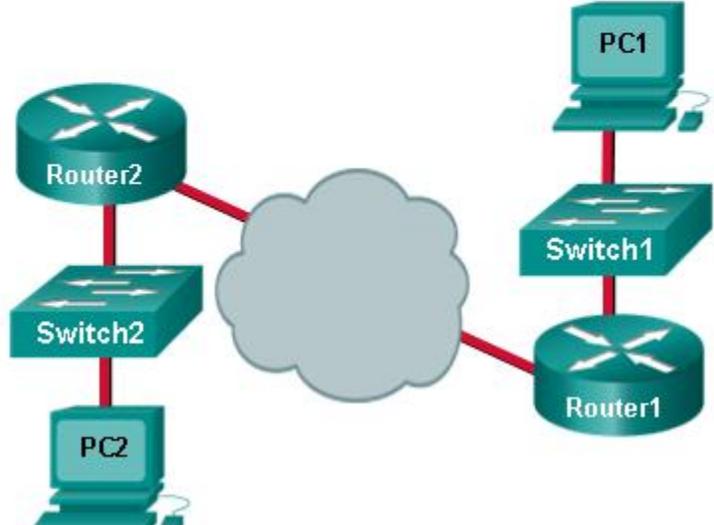
25 What is the purpose of the routing process?

- to encapsulate data that is used to communicate across a network
- to select the paths that are used to direct traffic to destination networks
- to convert a URL name into an IP address
- to provide secure Internet file transfer
- to forward traffic on the basis of MAC addresses

26

```
Ethernet adapter Local Area Connection:

Connection-specific DNS Suffix  . : launchmodem.com
IP Address. . . . .               : 192.168.1.95
Subnet Mask . . . . .             : 255.255.255.0
Default Gateway . . . . .         : 192.168.1.254
```



Refer to the exhibit. Consider the IP address configuration shown from PC1. What is a description of default gateway address?

- It is the IP address of the Router1 interface that connects the company to the Internet.
- It is the IP address of the Router1 interface that connects the PC1 LAN to Router1.

- It is the IP address of Switch1 that connects PC1 to other devices on the same LAN.
 - It is the IP address of the ISP network device located in the cloud.
-

The default gateway is used to route packets destined for remote networks. The default gateway IP address is the address of the first Layer 3 device (the router interface) that connects to the same network.

27 What happens when part of an Internet radio transmission is not delivered to the destination?

- A delivery failure message is sent to the source host.
 - The part of the radio transmission that was lost is re-sent.
 - The entire transmission is re-sent.
 - The transmission continues without the missing portion.
-

Most streaming services, such as Internet radio, use UDP as the transport layer protocol. These transmissions can tolerate some transmission failures, and no failure messages or retransmissions are required. Such control measures would create noticeable disruption to the flow of data.

28 Which two statements correctly describe a router memory type and its contents? (Choose two.)

- ROM is nonvolatile and stores a limited version of the IOS.
 - FLASH is nonvolatile and contains the IP routing table.
 - RAM is volatile and stores the running version of the IOS.
 - NVRAM is nonvolatile and stores a full version of the IOS.
 - ROM is nonvolatile and contains the initial system configuration.
-

ROM is a nonvolatile memory and stores bootup instructions, basic diagnostic software, and a limited IOS. Flash is a nonvolatile memory used as permanent storage for the IOS and other system-related files. RAM is volatile memory and stores the IP routing table, IPv4 to MAC address mappings in the ARP cache, packets that are buffered or temporarily stored, the running configuration, and the currently running IOS. NVRAM is a nonvolatile memory that stores the startup configuration file.

29 What is the effect of configuring the **ipv6 unicast-routing** command on a router?

- to assign the router to the all-nodes multicast group
 - to enable the router as an IPv6 router
 - to permit only unicast packets on the router
 - to prevent the router from joining the all-routers multicast group
-

When the **ipv6 unicast-routing** command is implemented on a router, it enables the router as an IPv6 router. Use of this command also assigns the router to the all-routers multicast group.

30 What are the three primary functions provided by Layer 2 data encapsulation? (Choose three.)

- error correction through a collision detection method
- session control using port numbers
- data link layer addressing
- placement and removal of frames from the media
- detection of errors through CRC calculations
- delimiting groups of bits into frames
- conversion of bits into data signals

Through the framing process, delimiters are used to identify the start and end of the sequence of bits that make up a frame. Data link layer addressing is added to enable a frame to be delivered to a destination node. A cyclic redundancy check (CRC) field is calculated on every bit and added to the frame. If the CRC value contained in the arriving frame is the same as the one the receiving node creates, the frame will be processed.

31 When applied to a router, which command would help mitigate brute-force password attacks against the router?

- exec-timeout 30**
- service password-encryption**
- banner motd \$Max failed logins = 5\$**
- login block-for 60 attempts 5 within 60**

The **login block-for** command sets a limit on the maximum number of failed login attempts allowed within a defined period of time. If this limit is exceeded, no further logins are allowed for the specified period of time. This helps to mitigate brute-force password cracking since it will significantly increase the amount of time required to crack a password. The **exec-timeout** command specifies how long the session can be idle before the user is disconnected. The **service password-encryption** command encrypts the passwords in the running configuration. The **banner motd** command displays a message to users who are logging in to the device.

32

```

ATC_R1#show file systems
File Systems:

   Size (b)      Free (b)      Type  Flags  Prefixes
*   64016384     12822561     flash  rw     flash:
   29688         23590        nvram  rw     nvram:
ATC_R1#

```

Refer to the exhibit. W

is the significance of the asterisk (*) in the exhibited output?

- The asterisk shows which file system was used to boot the system.
- The asterisk designates which file system is the default file system.**
- An asterisk indicates that the file system is bootable.
- An asterisk designates that the file system has at least one file that uses that file system.

33 What is the purpose of ICMP messages?

- to inform routers about network topology changes
 - to ensure the delivery of an IP packet
 - to provide feedback of IP packet transmissions
 - to monitor the process of a domain name to IP address resolution
-

The purpose of ICMP messages is to provide feedback about issues that are related to the processing of IP packets.

34 A frame is transmitted from one networking device to another. Why does the receiving device check the FCS field in the frame?

- to determine the physical address of the sending device
 - to verify the network layer protocol information
 - to compare the interface media type between the sending and receiving ends
 - to check the frame for possible transmission errors
 - to verify that the frame destination matches the MAC address of the receiving device
-

The FCS field contains a checksum value that was calculated, using the bits from some of the fields within the frame, by the sending device. The receiving device executes the same calculation on the received bits. If the FCS value calculated by the receiving device is the same as what was sent, then the frame is considered free of transmission errors.

35 What two preconfigured settings that affect security are found on most new wireless routers? (Choose two.)

- broadcast SSID
 - MAC filtering enabled
 - WEP encryption enabled
 - PSK authentication required
 - default administrator password
-

36 Which type of wireless security is easily compromised?

- EAP
 - PSK
 - WEP
 - WPA
-

37 A particular telnet site does not appear to be responding on a Windows 7 computer. Which command could the technician use to show any cached DNS entries for this web page?

- ipconfig /all
- arp -a
- ipconfig /displaydns
- nslookup

38 What is the purpose of the network security accounting function?

- to require users to prove who they are
- to determine which resources a user can access
- to keep track of the actions of a user
- to provide challenge and response questions

Authentication, authorization, and accounting are network services collectively known as AAA. Authentication requires users to prove who they are. Authorization determines which resources the user can access. Accounting keeps track of the actions of the user.

39 Which subnet would include the address 192.168.1.192 as a usable host address?

- 192.168.1.128/25
- 192.168.1.96/27
- 192.168.1.128/28
- 192.168.1.192/29

For the subnet of 192.168.1.128/25, there are 7 bits for host addresses, yielding 128 possible addresses. However, the first and last subnets are the network and broadcast addresses for this subnet. Therefore, the range of host addresses for this subnet is 192.168.1.129 to 192.168.1.254. The other subnets do not contain the address 192.168.1.96 as a valid host address.

40 Which three IP addresses are private ? (Choose three.)

- 10.20.30.1
- 172.32.5.2
- 192.167.10.10
- 172.30.5.3
- 192.168.5.5
- 224.6.6.6

The private IP addresses are within these three ranges:

10.0.0.0 - 10.255.255.255
172.16.0.0 - 172.31.255.255
192.168.0.0 - 192.168.255.255

41 Which two notations are useable nibble boundaries when subnetting in IPv6? (Choose two)

- /62
- /64
- /66
- /68
- /70

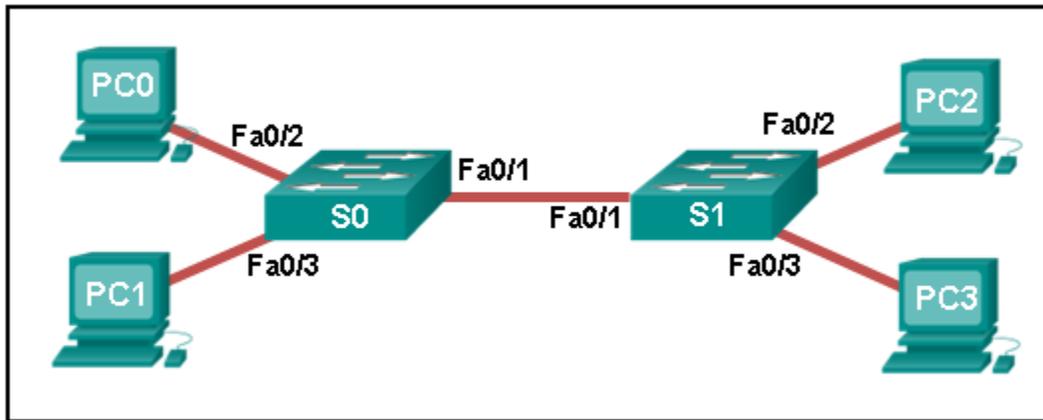
A nibble is one hex digit, or four bits, so nibble boundaries occur at multiples of four bits.

42 A PC is configured to obtain an IP address automatically from network 192.168.3.0/24. The network administrator issues the **arp -a** command and notices an entry of 192.168.3.255 ff-ff-ff-ff-ff-ff. Which statement describes this entry?

- This is a static map entry.
- This is a dynamic map entry.
- This entry refers to the PC itself.
- This entry maps to the default gateway.

The IP address of 192.168.3.255 on the 192.168.3.0/24 network is the broadcast address, which is statically mapped to ff-ff-ff-ff-ff-ff in the ARP table.

43



Refer to the exhibit. A ping to PC2 is issued from PC0, PC1, and PC3 in this exact order. Which MAC address will be contained in the S1 MAC address table that is associated with the Fa0/1 port?

- just PC0 and PC1 MAC addresses
- just the PC0 MAC address
- PC0, PC1, and PC2 MAC addresses
- just the PC1 MAC address
- just the PC2 MAC address

Switch S1 builds a MAC address table based on the source MAC address in the frame and the port upon which the frame enters the switch. The PC2 MAC address will be associated with port FA0/2. Because port FA0/1 of switch S1 connects with another switch, port FA0/1 will receive frames from multiple different devices. The MAC address table on switch S1 will therefore contain MAC addresses associated with each of the sending PCs.

44 How does a Layer 3 switch differ from a Layer 2 switch?

- A Layer 3 switch supports VLANs, but a Layer 2 switch does not.
- An IP address can be assigned to a physical port of a Layer 3 switch. However, this is not supported in Layer 2 switches.
- A Layer 3 switch maintains an IP address table instead of a MAC address table.
- A Layer 3 switch learns the MAC addresses that are associated with each of its ports. However, a Layer 2 switch does not.

Each port on a L3 switch can be configured as a port on an independent IP network. Routed ports can be configured with an IP address and they behave like regular router interfaces.

45

```
Switch(config)# hostname Main Switch
```

Refer to the exhibit. An administrator wants to change the name of a brand new switch, using the **hostname** command as shown. What prompt will display after the command is issued?

- Main Switch(config)#
- Switch(config)#
- MainSwitch(config)#
- Main(config)#
- Switch#

Hostnames cannot contain any spaces, so the hostname command will be ignored by the IOS, and the prompt will remain unchanged.

46 Which function is provided by TCP?

- data encapsulation
- detection of out-of-order and missing packets
- communication session control
- path determination for data packets

IP is a connectionless protocol and it does not offer packet delivery control. TCP has mechanisms to detect and control packet out-of-order and packet missing issues. IP does perform data encapsulation and is used by the router to determine the path to forward packets. Session control is the function of the session layer protocols.

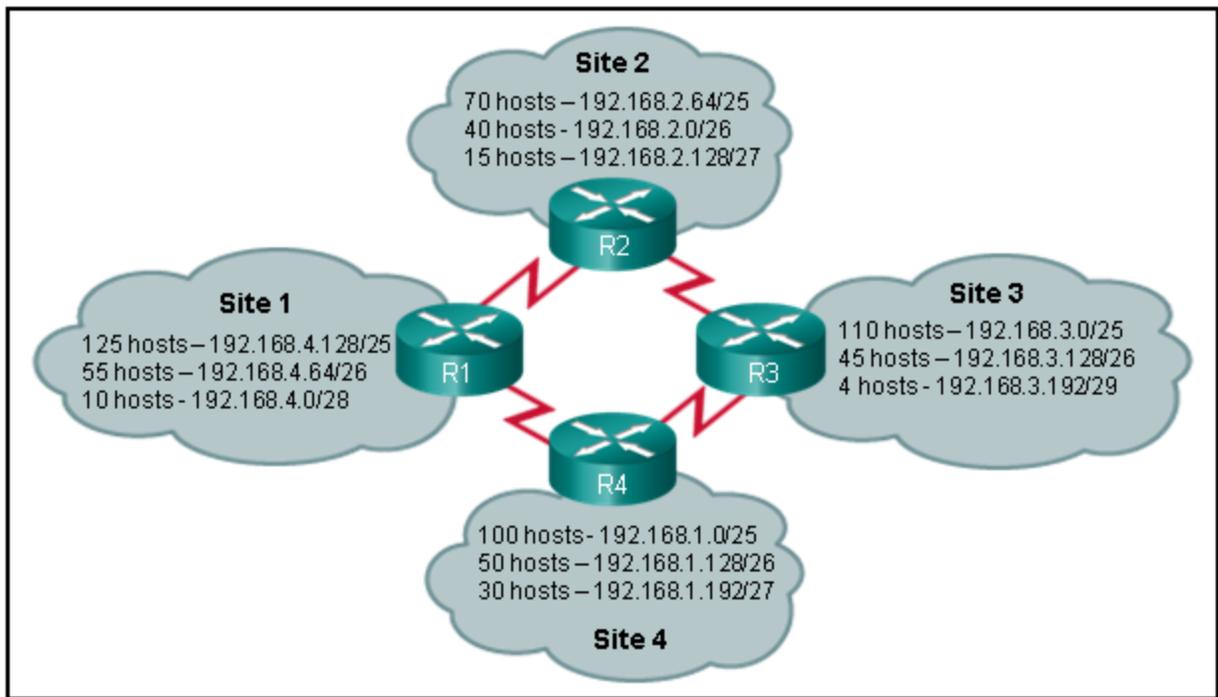
47

```
Frame 12: 359 bytes on wire (2872 bits), 359 bytes captured (2872 bits) on interface 0
Ethernet II, Src: Cisco-Li_07:04:e7 (00:23:69:07:04:e7), Dst: Giga-Byt_c2:bd:f8 (1c:6f:65:c2:bd:f8)
Internet Protocol Version 4, Src: 192.168.1.1 (192.168.1.1), Dst: 192.168.1.107 (192.168.1.107)
Transmission Control Protocol, Src Port: http (80), Dst Port: 49373 (49373), Seq: 1, Ack: 249, Len: 305
  Source port: http (80)
  Destination port: 49373 (49373)
  [Stream index: 0]
  Sequence number: 1 (relative sequence number)
  [Next sequence number: 306 (relative sequence number)]
  Acknowledgment number: 249 (relative ack number)
  Header length: 20 bytes
  [X] Flags: 0x018 (PSH, ACK)
  Window size value: 2920
  [Calculated window size: 2920]
  [Window size scaling factor: -2 (no window scaling used)]
  [X] Checksum: 0xb3e6 [validation disabled]
  [X] [SEQ/ACK analysis]
  TCP segment data (305 bytes)
```

Refer to the exhibit. A TCP segment from a server has been captured by Wireshark, which is running on a host. What acknowledgement number will the host return for the TCP segment that has been received?

- 2
- 21
- 250
- 306
- 2921

Because the starting sequence number is 1, and the length of the segment is 305 bytes, the receiving host should return an acknowledgement with an ACK of 306.



Refer to

exhibit. Which IP addressing scheme should be changed?

- Site 1
- Site 2
- Site 3
- Site 4

Site 2 should have designed the 192.168.2.0/25 network for the 70 hosts. Then the 192.168.2.128/26 network could be used for the 40 hosts, and the 192.168.2.192/27 network could be used for the 15 hosts. The other sites are all valid including Site 4 where the bottom of the addressing range was used for the largest number of hosts.

49 What is a characteristic of the LLC sublayer?

- It provides the logical addressing required that identifies the device.
- It provides delimitation of data according to the physical signaling requirements of the medium.
- It places information in the frame allowing multiple Layer 3 protocols to use the same network interface and media.
- It defines software processes that provide services to the physical layer.

The Logical Link Control (LLC) defines the software processes that provide services to the network layer protocols. The information is placed by LLC in the frame and identifies which network layer protocol is being used for the frame. This information allows multiple Layer 3 protocols, such as IPv4 and IPv6, to utilize the same network interface and media.

50

```

Enter configuration commands, one per line. End with CNTL/Z.
SW1(config)# enable password letmein
SW1(config)# enable secret secretin
SW1(config)# line console 0
SW1(config-line)# password lineconin
SW1(config-line)# login
SW1(config-line)# exit
SW1(config)# line vty 0 15
SW1(config-line)# password linevtyin
SW1(config-line)# login
SW1(config-line)# end
SW1#

```

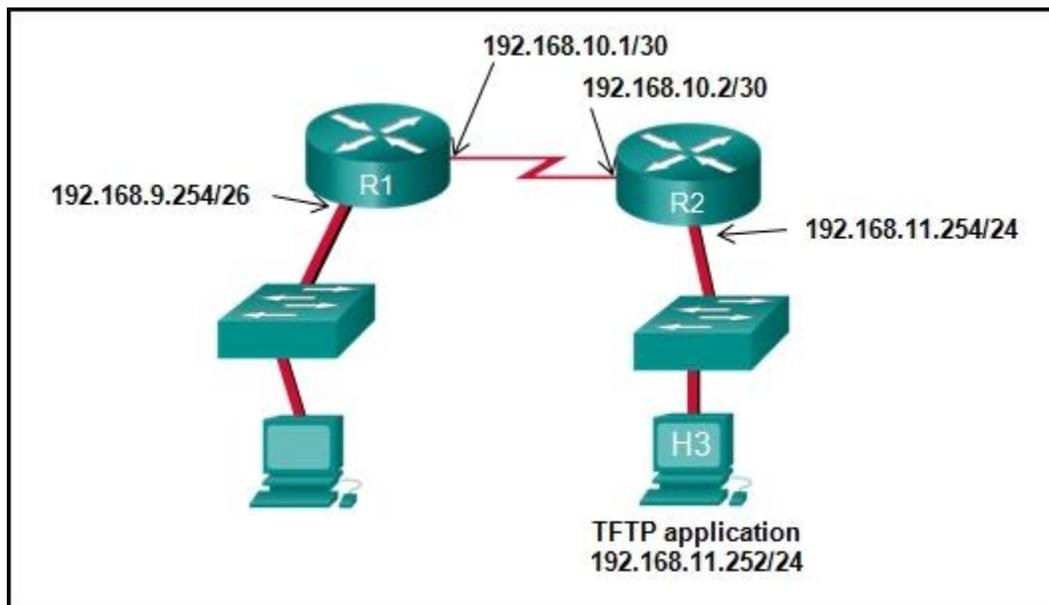
Refer to the exhibit. A net

administrator is configuring access control to switch SW1. If the administrator uses a console connection to connect to the switch, which password is needed to access user EXEC mode?

- letmein
- secretin
- lineconin
- linevtyin

Telnet accesses a network device through the virtual interface configured with the **line VTY** command. The password configured under this is required to access the user EXEC mode. The password configured under the **line console 0** command is required to gain entry through the console port, and the enable and enable secret passwords are used to allow entry into the privileged EXEC mode.

51



Refer to the exhibit.

network administrator enters these commands into the R1 router:

R1# copy running-config tftp

Address or name of remote host []?

When the router prompts for an address or remote host name, what IP address should the administrator enter at the prompt?

- 192.168.9.254
- 192.168.10.1
- 192.168.10.2
- 192.168.11.252
- 192.168.11.254

The requested address is the address of the TFTP server. A TFTP server is an application that can run on a multitude of network devices including a router, server, or even a networked PC.

52 A network administrator notices that the throughput on the network appears lower than expected when compared to the end-to-end network bandwidth. Which three factors can explain this difference? (Choose three.)

- the amount of traffic
- the type data of data encapsulation in use
- the type of traffic
- the number and type of network devices that the data is crossing
- the bandwidth of the connection to the ISP
- the reliability of the network backbone

Throughput usually does not match the specified bandwidth of physical links due to multiple factors. These factors include, the amount of traffic, type of traffic, and latency created by the network devices the data has to cross.

53 Which two components are necessary for a wireless client to be installed on a WLAN? (Choose two.)

- media
- wireless NIC
- custom adapter
- crossover cable
- wireless bridge
- wireless client software

54 The greatest part of the /8 block IPv4 address bit space consists of what types of address

- private addresses

- public addresses
- multicast addresses
- experimental addresses

When comparing the entire range of numbers used by private and public addresses, most of the IPv4 addresses are in the public address range.

59 The PT initialization was skipped. You will not be able to view the PT activity.

Open the PT Activity. Perform the tasks in the activity instructions and then answer the question.

Which IPv6 address is assigned to the Serial0/0/0 interface on RT2?

- 2001:db8:abc:1::1
- 2001:db8:abc:5::1
- 2001:db8:abc:5::2
- 2001:db8:abc:10::15

The result of the tracert command is as follows:

```
1 11 ms 0 ms 0 ms 2001:db8:abc:1::1
2 4 ms 0 ms 1 ms 2001:db8:abc:5::1
3 11 ms 14 ms 2 ms 2001:db8:abc:10::15
```

It crosses two routers, so the second line is the IP address for the RT2 serial interface0/0/0.