[Updated Constantly]

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CCNA 4 (v5.0.3 + v6.0) Pretest Exam Answers Full

1. **The buffers for packet processing and the running configuration file are temporarily stored in which type of router memory?**
   - flash
   - NVRAM
   - **RAM***
   - ROM

   RAM provides temporary storage for the running IOS, the running configuration file, the IP routing table, ARP table, and buffers for packet processing. In contrast, permanent storage of the IOS is provided by flash. NVRAM provides permanent storage of the startup configuration file, and ROM.provides permanent storage of the router bootup instructions and a limited IOS.

2. **How does implementing STP allow for a scalable network design?**
   - **It eliminates Layer 2istic of a defaul loops from redundant links.***
   - It provides failover services when duplicate network equipment is used.
   - It prevents local traffic from propagating to other parts of the network.
   - It filters broadcasts and other undesirable traffic from the network.

   Spanning Tree Protocol (STP) supports the design of a scalable network by preventing Layer 2 loops where redundant switch paths are implemented.

3. **A home 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

4. **What is a characteristic of a default static route?**

   - It uses a single network address to send multiple static routes to one destination address.
   - It backs up a route already discovered by a dynamic routing protocol.
   - **It identifies the gateway IP address to which the router sends all IP packets for which it does not have a learned or static route.***
   - It is configured with a higher administrative distance than is the original dynamic routing protocol.

   A default static route is a route that matches all packets. It identifies the gateway IP address to which the router sends all IP packets for which the router does not have a

learned or static route. A default static route is simply a static route with 0.0.0.0/0 as the destination IPv4 address. Configuring a default static route creates a gateway of last resort.

5. **Which three pairs of trunking modes will establish a functional trunk link between two Cisco switches? (Choose three.)**
   - **dynamic desirable – dynamic auto***
   - dynamic auto – dynamic auto
   - access – trunk
   - **dynamic desirable – dynamic desirable***
   - **dynamic desirable – trunk***
   - access – dynamic auto

   If a trunk is in dynamic desirable on either side of a trunk link, a trunk will form. The other trunking combinations will not form trunk links.

6. **On which switch interface would an administrator configure an IP address so that the switch can be managed remotely?**
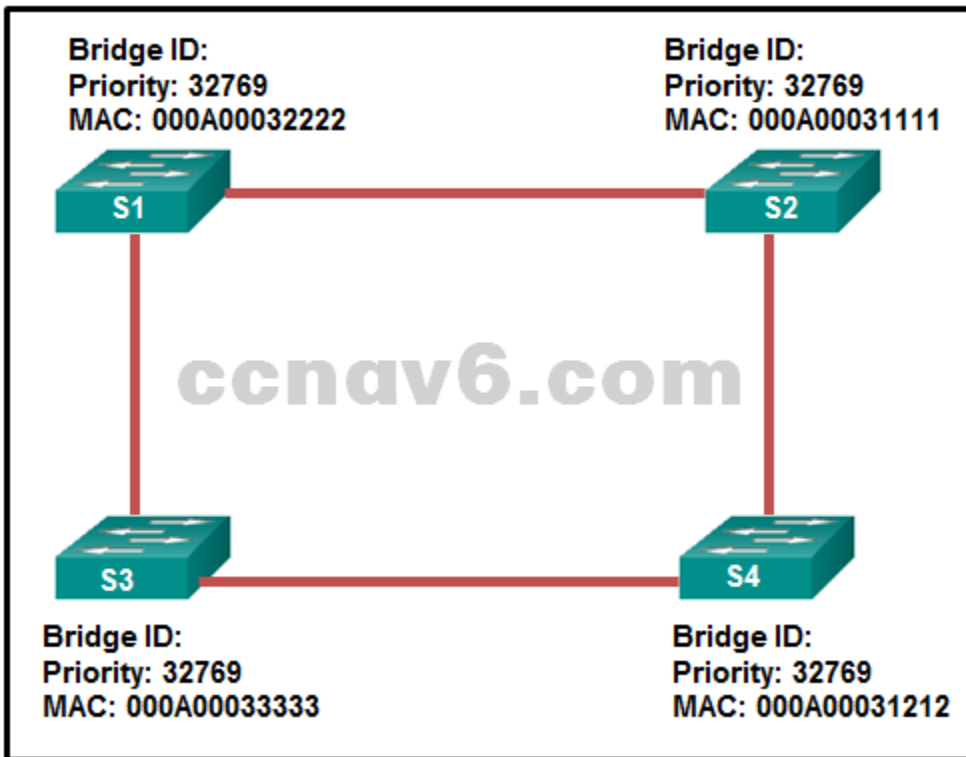   - FastEthernet0/1
   - **VLAN 1***
   - vty 0
   - console 0

   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.

7. **Which statement describes a route that has been learned dynamically?**
   - It is identified by the prefix C in the routing table.
   - It has an administrative distance of 1.
   - **It is automatically updated and maintained by routing protocols.***
   - It is unaffected by changes in the topology of the network.

8. **Refer to the exhibit. Which switch will be the root bridge after the election process is complete?**

Bridge ID:
Priority: 32769
MAC: 000A00032222
S1

Bridge ID:
Priority: 32769
MAC: 000A00031111
S2

S3
Bridge ID:
Priority: 32769
MAC: 000A00033333

S4
Bridge ID:
Priority: 32769
MAC: 000A00031212

- S1
- **S2***
- S3
- S4

The root bridge is determined by the lowest bridge ID, which consists of the priority value and the MAC address. Because the priority values of all of the switches are identical, the MAC address is used to determine the root bridge. Because S2 has the lowest MAC address, S2 becomes the root bridge.

9. **What three application layer protocols are part of the TCP/IP protocol suite? (Choose three.)**
   - **DNS***
   - PPP
   - ARP
   - NAT
   - **FTP***
   - **DHCP***

DNS, DHCP, and FTP are all application layer protocols in the TCP/IP protocol suite. ARP and PPP are network access layer protocols, and NAT is an internet layer protocol in the TCP/IP protocol suite.

10. **In addition to the cable length, what two factors could interfere with the communication carried over UTP cables? (Choose two.)**
    - bandwidth
    - **electromagnetic interference***
    - size of the network
    - **crosstalk***
    - signal modulation technique

Copper media is widely used in network communications. However, copper media is limited by distance and signal interference. Data is transmitted on copper cables as electrical pulses. The electrical pulses are susceptible to interference from two sources:
Electromagnetic interference (EMI) or radio frequency interference (RFI) – EMI and RFI signals can distort and corrupt the data signals being carried by copper media.
Crosstalk – 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.

11. **Which information does a switch use to keep the MAC address table information current?**
    - **the source MAC address and the incoming port***
    - the source and destination MAC addresses and the incoming port
    - the source MAC address and the outgoing port
    - the destination MAC address and the outgoing port
    - the source and destination MAC addresses and the outgoing port
    - the destination MAC address and the incoming port

    To maintain the MAC address table, the switch uses the source MAC address of the incoming packets and the port that the packets enter. The destination address is used to select the outgoing port.

12. **A network engineer has been tasked with connecting two large autonomous systems (AS) together over the Internet. Which routing protocol should be selected?**
    - IS-IS
    - EIGRP
    - OSPFv2
    - **BGP***

    Large companies commonly interconnect multiple autonomous systems using an EGP. Border Gateway Protocol (BGP) is an EGP and is the routing protocol used by routers on the Internet.

13. **What important information is examined in the Ethernet frame header by a Layer 2 device in order to forward the data onward?**
    - source MAC address
    - source IP address
    - **destination MAC address***
    - destination IP address
    - Ethernet type

    The Layer 2 device, such as a switch, uses the destination MAC address to determine which path (interface or port) should be used to send the data onward to the destination device.

14. **What are two reasons to implement passive interfaces in the EIGRP configuration of a Cisco router? (Choose two.)**
    - **to provide increased network security***
    - to shut down unused interfaces
    - to exclude interfaces from load balancing
    - **to avoid unnecessary update traffic***
    - to mitigate attacks coming from the interfaces

    Two primary reasons for implementing passive interfaces in EIGRP routing are to suppress unnecessary update traffic, such as when an interface is a LAN interface with no other routers connected, and to increase security controls, such as preventing unknown rogue routing devices from receiving EIGRP updates.

15. **Which two functions are primary functions of a router? (Choose two.)**
    - **packet forwarding***
    - flow control
    - microsegmentation
    - **path selection***
    - domain name resolution

16. **Which two devices allow hosts on different VLANs to communicate with each other? (Choose two.)**
    - **router***
    - **Layer 3 switch***
    - repeater
    - Layer 2 switch
    - hub

    Members of different VLANs are on separate networks. For devices on separate networks to be able to communicate, a Layer 3 device, such as a router or Layer 3 switch, is necessary.

17. **An EIGRP router loses the route to a network. Its topology table contains two feasible successors to the same network. What action will the router take?**
    - The DUAL algorithm is recomputed to find an alternate route.
    - The router uses the default route.
    - The router will query neighbors for an alternate route.
    - **The best alternative backup route is immediately inserted into the routing table.***

    Because EIGRP uses the DUAL algorithm, the router is able to maintain information on all potential loop-free backup routes. In the event of the failure of a routing table entry, the router immediately inserts the best backup route into the routing table.

18. **What three blocks of addresses are defined by RFC 1918 for private network use? (Choose three.)**
    - **192.168.0.0/16***
    - 169.254.0.0/16
    - 239.0.0.0/8
    - **172.16.0.0/12***
    - **10.0.0.0/8***
    - 100.64.0.0/14

    RFC 1918, Address Allocation for Private Internets, defines three blocks of IPv4 address for private networks that should not be routable on the public Internet.
    10.0.0.0/8
    172.16.0.0/12
    192.168.0.0/16

19. **Which two pieces of information are required when creating a standard access control list? (Choose two.)**
    - destination address and wildcard mask
    - **access list number between 1 and 99***
    - access list number between 100 and 199
    - **source address and wildcard mask***
    - subnet mask and wildcard mask

    Standard ACLs can be numbered 1 to 99 and 1300 to 1999. Standard IP ACLs filter only on the source IP address.

20. **Question as presented:**

Match the subnetwork to a host address that would be included within the subnetwork. (Not all options are used.)

192.168.1.32/27		192.168.1.63
192.168.1.64/27		192.168.1.68
192.168.1.96/27		192.168.1.128
		192.168.1.48
		192.168.1.121

Match the subnetwork to a host address that would be included within the subnetwork. (Not all options are used.)

192.168.1.32/27		192.168.1.63
192.168.1.64/27		192.168.1.68
192.168.1.96/27		192.168.1.128
		192.168.1.48
		192.168.1.121

Subnet 192.168.1.32/27 will have a valid host range from 192.168.1.33 – 192.168.1.62 with the broadcast address as 192.168.1.63
Subnet 192.168.1.64/27 will have a valid host range from 192.168.1.65 – 192.168.1.94 with the broadcast address as 192.168.1.95
Subnet 192.168.1.96/27 will have a valid host range from 192.168.1.97 – 192.168.1.126 with the broadcast address as 192.168.1.127

21. **Which criterion is preferred by the router to choose a router ID?**
   - **the router-id rid command***
   - the IP address of the highest configured loopback interface on the router
   - the IP address of the highest active interface on the router
   - the IP address of the highest active OSPF-enabled interface

   The preferred order of criteria for Cisco routers to identify the router ID is: an explicitly configured router using the router-id rid command; the IP address of any configured loopback interface; and the IP address of any active interface on the router (it does not have to be an OSPF-enabled interface).

22. **A network administrator is entering the command ipv6 unicast-routing to start configuring DHCPv6 operation on a router. Which statement describes the function of this command?**
   - It is required to configure stateless DHCPv6 server on the router.
   - It is required to configure stateful DHCPv6 server on the router.
   - **It is required for sending ICMPv6 RA messages.***
   - It is required for enabling DNS service in DHCPv6 configurations.

   The ipv6 unicast-routing command is required to enable IPv6 routing on a router. This command is not necessary for the router to be a stateless or stateful DHCPv6 server, but is required for sending ICMPv6 RA messages.

23. **What three services are provided by the transport layer? (Choose three.)**
   - encryption of data

- path determination
- bit transmission
- **flow control***
- **error recovery***
- **connection establishment***
- data representation

The transport layer is responsible for tracking digital conversations between a source application and a destination application through the use of port numbers. Two protocols that operate at the transport layer are TCP and UDP. TCP can provide reliability by establishing a connection, maintaining flow control, and error recovery.

24. **Which TCP/IP model layer is closest to the end user?**
- internet
- transport
- **application***
- network access

End users use applications to interact with and use the network. The application layer of the TCP/IP model is closest to the end user. Application layer protocols are used to communicate and exchange messages with other network devices and applications. The layers of the TCP/IP model are from top to bottom (memory aid – ATIN): application, transport, internet, network access

25. **When applied to a router, which command would help mitigate brute-force password attacks against the router?**
- service password-encryption
- **login block-for 60 attempts 5 within 60***
- exec-timeout 30
- banner motd $Max failed logins = 5$

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.

26. **Which circumstance would result in an enterprise deciding to implement a corporate WAN?**
- **when its employees become distributed across many branch locations***
- when the enterprise decides to secure its corporate LAN
- when the network will span multiple buildings
- when the number of employees exceeds the capacity of the LAN

WANs cover a greater geographic area than LANs do, so having employees distributed across many locations would require the implementation of WAN technologies to connect those locations. Customers will access corporate web services via a public WAN that is implemented by a service provider, not by the enterprise itself. When employee numbers grow, the LAN has to expand as well. A WAN is not required unless the employees are in remote locations. LAN security is not related to the decision to implement a WAN.

27. **A corporation is searching for an easy and low cost solution to provide teleworkers with a secure connection to headquarters. Which solution should be selected?**
    ▪ leased line connection
    ▪ site-to-site VPN over the Internet
    ▪ dial-up connection
    ▪ **remote access VPN over the Internet***

    A remote access VPN over the Internet is an appropriate solution to meet the requirement for secure connections to individual teleworkers. Site-to-site VPNs are used to connect between offices. Leased lines are very expensive for multiple teleworkers. A dial-up connection is very slow and the corporation needs to maintain a facility (a bank of access servers) to handle multiple simultaneous dial-up connections.

28. **Which three statements are true about PPP? (Choose three.)**
    ▪ PPP can only be used between two Cisco devices.
    ▪ **PPP uses LCPs to agree on format options such as authentication, compression, and error detection.***
    ▪ PPP carries packets from several network layer protocols in LCPs.
    ▪ **PPP uses LCPs to establish, configure, and test the data-link connection.***
    ▪ **PPP can use synchronous and asynchronous circuits.***

    PP is an encapsulation standard for transporting IP traffic over point-to-point synchronous and asynchronous links. PPP uses LCP to establish, configure, and test Layer 2 connections and also to negotiate authentication, compression, and error detection.

29. **A network administrator is configuring a PPP link with the commands:**
    R1(config-if)# encapsulation ppp
    R1(config-if)# ppp quality 70
    What is the effect of these commands?
    ▪ The NCP will send a message to the sending device if the link usage reaches 70 percent.
    ▪ The PPP link will not be established if more than 30 percent of options cannot be accepted.
    ▪ The LCP establishment phase will not start until the bandwidth reaches 70 percent or more.
    ▪ **The PPP link will be closed down if the link quality drops below 70 percent.***

    LCP provides an option to monitor the link quality. The command ppp quality percentage ensures that the link meets the quality requirement set; otherwise the link closes down.

30. **What is the protocol that provides ISPs the ability to send PPP frames over DSL networks?**
    ▪ CHAP
    ▪ ADSL
    ▪ LTE
    ▪ **PPPoE***

    PPPoE was developed as a solution for ISPs that wanted to the benefits of PPP connections over their DSL networks. Point-to-Point Protocol over Ethernet, PPPoE, allows PPP frames to be encapsulated and sent over Ethernet.

31. **Refer to the exhibit. All routers are successfully running the BGP routing protocol. How many routers must use EBGP in order to share routing information across the autonomous**

systems?
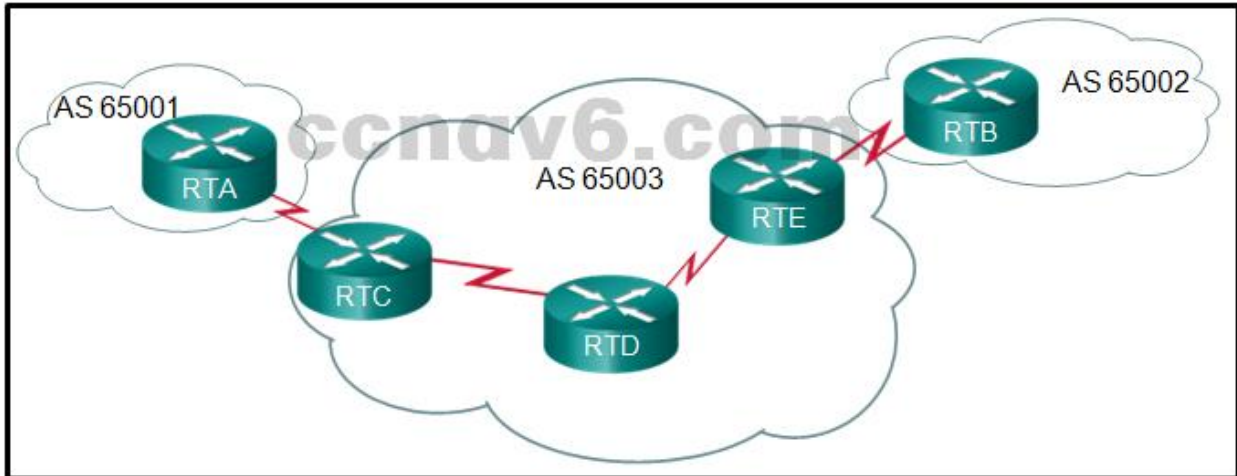
- 2
- **4***
- 5
- 3

External BGP (EBGP) is used between routers that must communicate with routers that are in a different autonomous system (AS).

32. **Which three values or sets of values are included when creating an extended access control list entry? (Choose three.)**
   - destination subnet mask and wildcard mask
   - **source address and wildcard mask***
   - source subnet mask and wildcard mask
   - **destination address and wildcard mask***
   - **access list number between 100 and 199***
   - default gateway address and wildcard mask
   - access list number between 1 and 99

33. **Which pillar of the Cisco IoT System allows data to be analyzed and managed at the location where it is generated?**
   - **fog computing***
   - application enhancement platform
   - network connectivity
   - data analytics

The Cisco IoT System consists of six pillars to describe foundational elements, (1) network connectivity, (2) fog computing, (3) security (cyber and physical), (4) data analytics, (5) management and automation, and (6) an application enablement platform. The fog computing pillar covers software and hardware that extends IoT applications to the network edge.

34. **What two protocols are supported on Cisco devices for AAA communications? (Choose two.)**
   - HSRP
   - **RADIUS***
   - VTP
   - **TACACS+***
   - LLDP

Two AAA protocols are supported on Cisco devices, TACACS+ and RADIUS. Hot Standby Router Protocol (HSRP) is used on Cisco routers to allow for gateway redundancy. Link Layer Discovery Protocol (LLDP) is a protocol for neighbor discovery. VLAN trunking protocol (VTP) is used on Cisco switches to manage VLANs on a VTP-enabled server switch.

35. **What guideline is generally followed about the placement of extended access control lists?**
   - **They should be placed as close as possible to the source of the traffic to be denied.***
   - They should be placed as close as possible to the destination of the traffic to be denied.
   - They should be placed on the fastest interface available.
   - They should be placed on the destination WAN link.

   ACLs should be placed where they have the greatest impact. The recommendation for the placement of extended ACLs is as close as possible to the source of traffic to be filtered. Whereas standard ACLs should be placed as close to the destination as possible.

36. **What network monitoring tool copies traffic moving through one switch port, and sends the copied traffic to another switch port for analysis?**
   - **SPAN***
   - SNMP
   - syslog
   - 802.1X

   The Switched Port Analyzer (SPAN) feature of Cisco switches allows traffic that is coming into or out of a switch port to be copied to a different port so that it can be collected and analyzed with network monitoring software.

37. **Question as presented:**

Match the term to the description. (Not all options are used.)

bandwidth	an interface that is presented with more traffic than it can handle
delay	measured in the number of bits that can be sent in a single second
congestion	packets that are buffered and played out in a steady stream
jitter	the variation in the latency between each received packet
	the time it takes for a message to travel from the source to the destination

Match the term to the description. (Not all options are used.)

bandwidth	an interface that is presented with more traffic than it can handle
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	the time it takes for a message to travel from the source to the destination

38. **Which type of QoS marking is applied to Ethernet frames?**

- DSCP
- **CoS***
- ToS
- IP precedence

The class of service (CoS) marking allows a Layer 2 Ethernet frame to be marked with eight levels of priority (values 0−7). This marking can be used by QoS-enabled network devices to provide preferential traffic treatment.

39. **Users are reporting longer delays in authentication and in accessing network resources during certain time periods of the week. What kind of information should network engineers check to find out if this situation is part of a normal network behavior?**
   - debug output and packet captures
   - network configuration files
   - **the network performance baseline***
   - syslog records and messages

The network engineers should first establish that the reported performance of the network is in fact abnormal. This is done by referring to the documented network performance baseline.Once it has been verified that the network is not having a proper performance, then specific troubleshooting processes can be applied.

40. **Which feature sends simulated data across the network and measures performance between multiple network locations?**
   - **IP SLA***
   - LLDP
   - SPAN
   - syslog

IP SLAs use generated traffic to measure network performance between two locations, two network devices, or through multiple network paths. IP SLAs are useful in providing data related to network performance and in troubleshooting congestion-related issues.

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Older Version

41. **When is a dial-up connection used to connect to an ISP?**
   - when a cellular telephone provides the service
   - when a high-speed connection is provided over a cable TV network
   - when a satellite dish is used
   - **when a regular telephone line is used***

42. **Why would a network administrator use the tracert utility?**
   - to determine the active TCP connections on a PC
   - to check information about a DNS name in the DNS server
   - **to identify where a packet was lost or delayed on a network***
   - to display the IP address, default gateway, and DNS server address for a PC
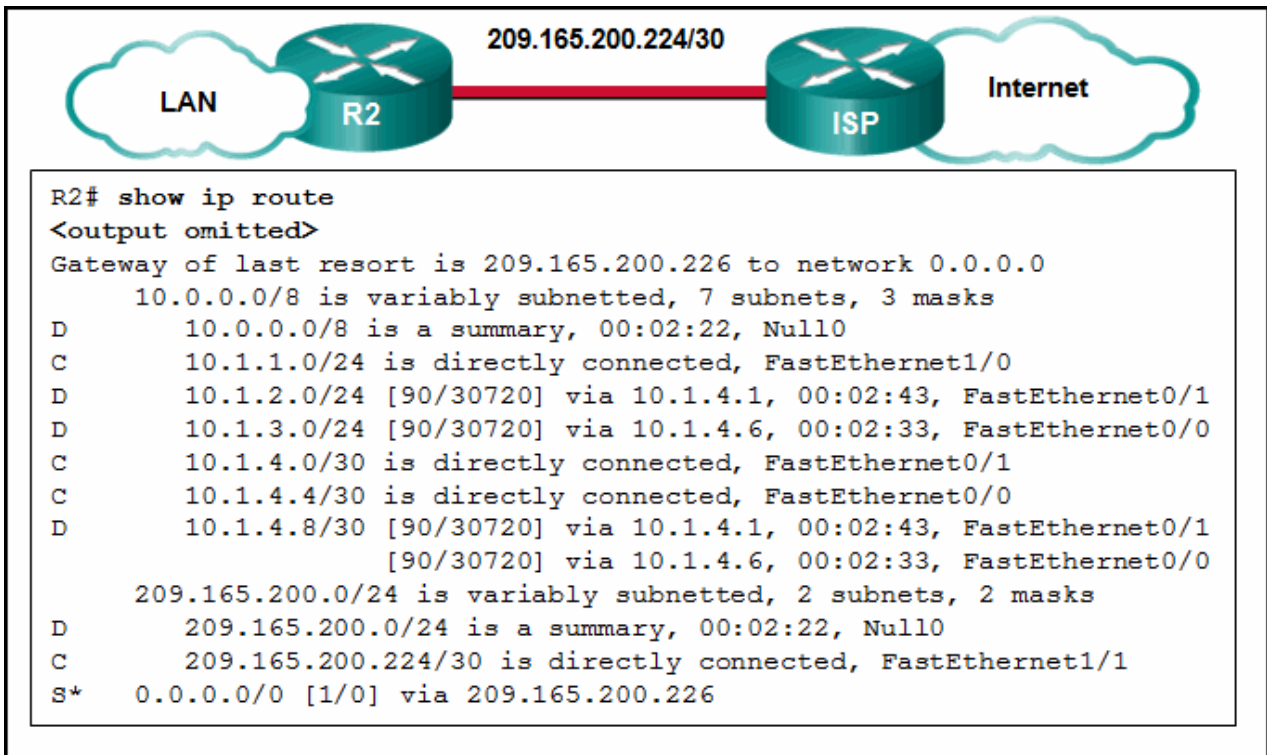
43. **Refer to the exhibit. Which type of IPv6 static route is configured in the exhibit?**

```
ipv6 route 2001:0DB8::/32 2001:0DB8:3000::1
```

   - directly attached static route

- **recursive static route***
- fully specified static route
- floating static route

44. **Which range of link-local addresses can be assigned to an IPv6-enabled interface?**
    - FEC0::/10
    - FDEE::/7
    - **FEBF::/10***
    - FF00::/8

45. **A high school in New York (school A) is using videoconferencing technology to establish student interactions with another high school (school B) in Russia. The videoconferencing is conducted between two end devices through the Internet. The network administrator of school A configures the end device with the IP address 192.168.25.10. The administrator sends a request for the IP address for the end device in school B and the response is 192.168.25.10. The administrator knows immediately that this IP will not work. Why?**
    - This is a loopback address.
    - This is a link-local address.
    - **This is a private IP address.***
    - There is an IP address conflict.

46. **What field content is used by ICMPv6 to determine that a packet has expired?**
    - TTL field
    - CRC field
    - **Hop Limit field***
    - Time Exceeded field

47. **What is the subnet address for the address 2001:DB8:BC15:A:12AB::1/64?**
    - 2001:DB8:BC15::0
    - **2001:DB8:BC15:A::0***
    - 2001:DB8:BC15:A:1::1
    - 2001:DB8:BC15:A:12::0

48. **Which two conditions would cause a router to drop a packet? (Choose two.)**
    - No inbound ACL exists on the interface where the packet enters the router.
    - The ACL that is affecting the packet does not contain at least one deny ACE.
    - **The packet source address does not match the source as permitted in a standard inbound ACE.***
    - No outbound ACL exists on the interface where the packet exits the router.
    - **No routing table entry exists for the packet destination, but the packet matches a permitted address in an outbound ACL.***

49. **Which definition describes a supernet route?**
    - a route that has a subnet mask equal to that of the classful mask
    - **a network address with a mask less than the classful mask***
    - a static route with the address 0.0.0.0/0
    - a default route with a local exit interface

50. **Refer to the exhibit. Which route or routes will be advertised to the router ISP if autosummarization is enabled?**

```
209.165.200.224/30

LAN    R2                    ISP    Internet

R2# show ip route
<output omitted>
Gateway of last resort is 209.165.200.226 to network 0.0.0.0
      10.0.0.0/8 is variably subnetted, 7 subnets, 3 masks
D        10.0.0.0/8 is a summary, 00:02:22, Null0
C        10.1.1.0/24 is directly connected, FastEthernet1/0
D        10.1.2.0/24 [90/30720] via 10.1.4.1, 00:02:43, FastEthernet0/1
D        10.1.3.0/24 [90/30720] via 10.1.4.6, 00:02:33, FastEthernet0/0
C        10.1.4.0/30 is directly connected, FastEthernet0/1
C        10.1.4.4/30 is directly connected, FastEthernet0/0
D        10.1.4.8/30 [90/30720] via 10.1.4.1, 00:02:43, FastEthernet0/1
                     [90/30720] via 10.1.4.6, 00:02:33, FastEthernet0/0
      209.165.200.0/24 is variably subnetted, 2 subnets, 2 masks
D        209.165.200.0/24 is a summary, 00:02:22, Null0
C        209.165.200.224/30 is directly connected, FastEthernet1/1
S*    0.0.0.0/0 [1/0] via 209.165.200.226
```

- **10.0.0.0/8***
- 10.1.0.0/16
- 10.1.0.0/28
- 10.1.1.0/24
    10.1.2.0/24
    10.1.3.0/24
    10.1.4.0/28

51. **Which information does a switch use to populate the MAC address table?**
    - the destination MAC address and the incoming port
    - the destination MAC address and the outgoing port
    - the source and destination MAC addresses and the incoming port
    - the source and destination MAC addresses and the outgoing port
    - **the source MAC address and the incoming port***
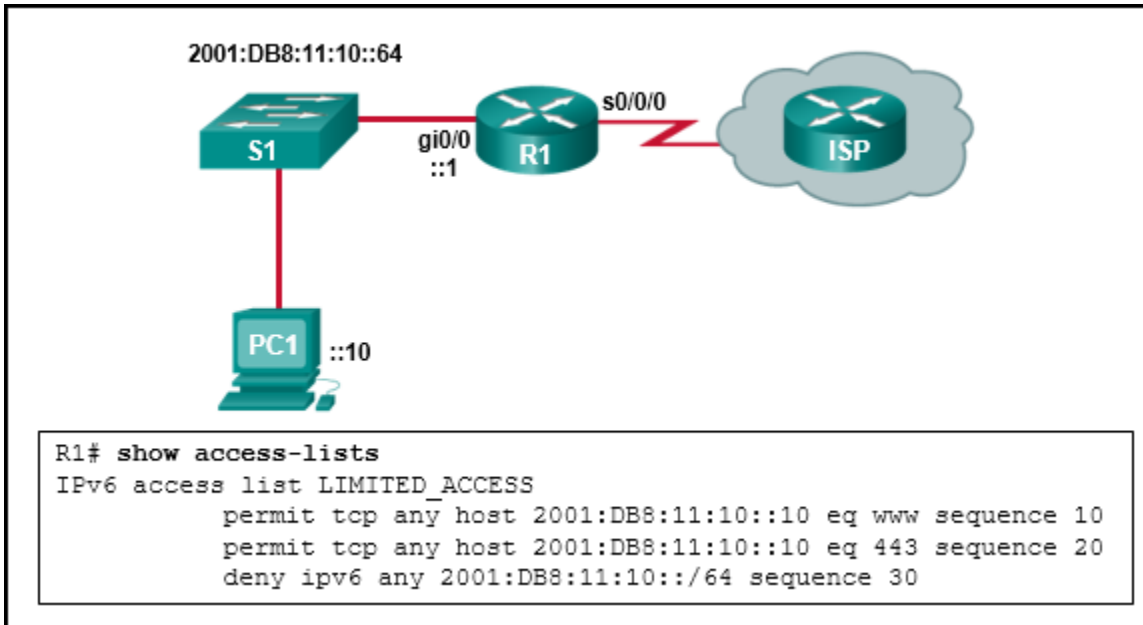   - the source MAC address and the outgoing port

52. **What is the purpose of setting the native VLAN separate from data VLANs?**
    - The native VLAN is for carrying VLAN management traffic only.
    - The security of management frames that are carried in the native VLAN can be enhanced.
    - **A separate VLAN should be used to carry uncommon untagged frames to avoid bandwidth contention on data VLANs.***
    - The native VLAN is for routers and switches to exchange their management information, so it should be different from data VLANs.

53. **A network contains multiple VLANs spanning multiple switches. What happens when a device in VLAN 20 sends a broadcast Ethernet frame?**
   - All devices in all VLANs see the frame.
    - Devices in VLAN 20 and the management VLAN see the frame.

- **Only devices in VLAN 20 see the frame.***
- Only devices that are connected to the local switch see the frame.

54. **Which security mode is the least secure choice when a home wireless router is configured?**
   - WPA
   - WPA2
   - **WEP***
   - WPA2-Personal

55. **Refer to the exhibit. The IPv6 access list LIMITED_ACCESS is applied on the S0/0/0 interface of R1 in the inbound direction. Which IPv6 packets from the ISP will be dropped by the ACL on R1?**


```
R1# show access-lists
IPv6 access list LIMITED_ACCESS
        permit tcp any host 2001:DB8:11:10::10 eq www sequence 10
        permit tcp any host 2001:DB8:11:10::10 eq 443 sequence 20
        deny ipv6 any 2001:DB8:11:10::/64 sequence 30
```

   - HTTPS packets to PC1
   - **ICMPv6 packets that are destined to PC1***
   - packets that are destined to PC1 on port 80
   - neighbor advertisements that are received from the ISP router

56. **Refer to the exhibit. The network engineer for the company that is shown wants to use the primary ISP connection for all external connectivity. The backup ISP connection is used only**

if the primary ISP connection fails. Which set of commands would accomplish this goal?
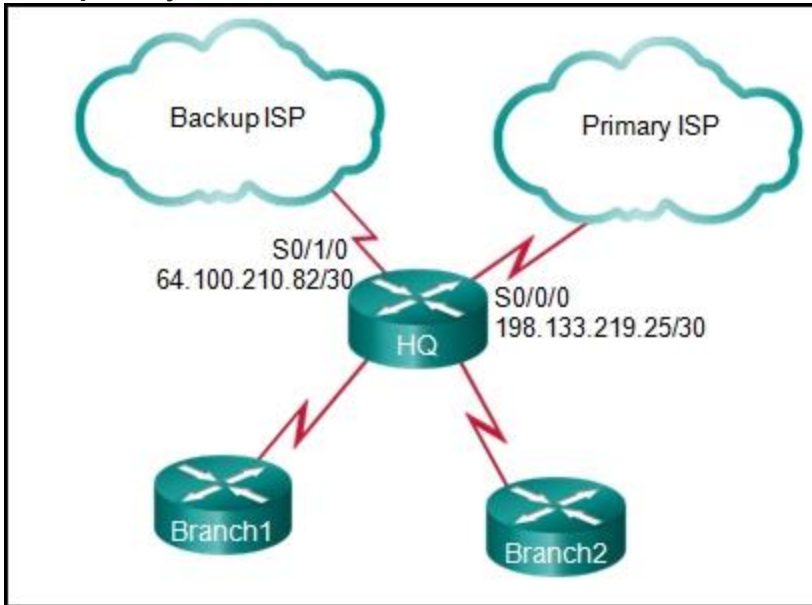
- ip route 198.133.219.24 255.255.255.252
  ip route 64.100.210.80 255.255.255.252
- ip route 198.133.219.24 255.255.255.252
  ip route 64.100.210.80 255.255.255.252 10
- ip route 0.0.0.0 0.0.0.0 s0/0/0
  ip route 0.0.0.0 0.0.0.0 s0/1/0
- **ip route 0.0.0.0 0.0.0.0 s0/0/0**
  ip route 0.0.0.0 0.0.0.0 s0/1/0 10*

57. **What is the most likely scenario in which the WAN interface of a router would be configured as a DHCP client to be assigned a dynamic IP address from an ISP?**
   - There is a web server for public access on the LAN that is attached to the router.
   - The router is also the gateway for a LAN.
   - **It is a SOHO or home broadband router.***
   - The router is configured as a DHCP server.

58. **Refer to the exhibit. A network administrator has attempted to implement a default route from R1 to the ISP and propagate the default route to EIGRP neighbors. Remote connectivity from the EIGRP neighbor routers to the ISP connected to R1 is failing. Based**

on the output from the exhibit, what is the most likely cause of the problem?

```
R1# show running-config

<output omitted>

ip classless
ip route 0.0.0.0 0.0.0.0 Serial0/0/1

R1# show ip protocols

Routing Protocol is "eigrp  55 "
Redistributing: eigrp 55
  Automatic network summarization is not in effect
  Maximum path: 4
 Routing for Networks:
     192.168.254.0
     172.21.0.0
  Routing Information Sources:
    Gateway         Distance      Last Update
    192.168.254.9   90            16155
    192.168.254.6   90            191424
Distance: internal 90 external 170
```

- The command default-information originate has not been issued on R1.
- There are no EIGRP neighbor relationships on R1.
- The ip route command must specify a next-hop IP address instead of an exit interface when creating a default route.
- **The command redistribute static has not been issued on R1.***
- The network statement for the ISP connection has not been issued.

59. **Refer to the exhibit. Which two networks contain feasible successors? (Choose two.)**

```
R4#show ip eigrp topology all-links
IP-EIGRP Topology Table for AS 54

Codes: P - Passive, A - Active, U - Update, Q - Query, R -Reply,
       r - Reply status

P 192.168.41.0/25, 1 successors, FD is 128256
        via Connected, Loopback0
P 10.44.103.252/30, 1 successors, FD is 2816
        via Connected, GigabitEthernet0/0
P 10.44.104.252/30, 1 successors, FD is 25600256
        via Connected, GigabitEthernet0/1
P 192.168.51.0/25, 1 successors, FD is 130816
        via 10.44.103.253 (130816/128256), GigabitEthernet0/0
        via 10.44.104.253 (25600512/261899), GigabitEthernet0/1
P 10.44.101.252/30, 1 successors, FD is 3072
        via 10.44.103.253 (3072/2816), GigabitEthernet0/0
P 10.44.100.252/30, 1 successors, FD is 3072
        via 10.44.103.253 (3072/2816), GigabitEthernet0/0
        via 10.44.104.253 (25600512/2816), GigabitEthernet0/1
P 192.168.71.0/25, 1 successors, FD is 131072
        via 10.44.103.253 (131072/130816), GigabitEthernet0/0
        via 10.44.104.253 (25728256/128256), GigabitEthernet0/1
```
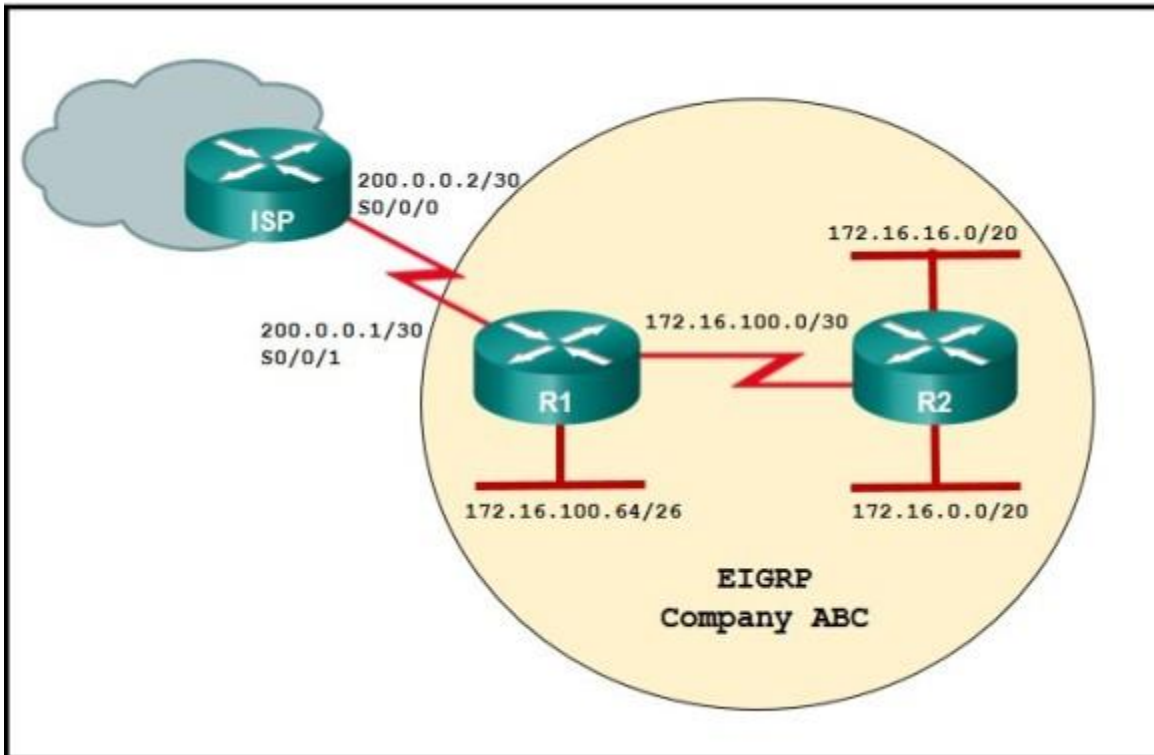
- **192.168.71.0***
- 192.168.51.0
- **10.44.100.252***
- 10.44.104.253
- 10.44.101.252

60. **Refer to the exhibit. NAT with overload is configured on router R1 and uses the NAT pool of addresses 209.165.201.9 through 209.165.201.10. What type of route would the ISP need**

in order for communication to occur between hosts in Company ABC and the Internet?

- Because the ISP has knowledge of the directly connected 200.0.0.1 network, no route is needed.
- A static route from the ISP is needed that uses the network number 172.16.0.0 and the mask 255.255.0.0.
- A default route from the ISP is needed that uses either the exit interface of S0/0/0 or the 200.0.0.1 IP address.
- A default route from the ISP is needed that uses either the exit interface of S0/0/1 or the 200.0.0.2 IP address.
- **A static route from the ISP is needed that uses the network number 209.165.201.8 and the mask 255.255.255.252.***
61. **A network administrator enters the command ipv6 router ospf 64 in global configuration mode. What is the result of this command?**
    - The router will be assigned an autonomous system number of 64.
    - The router will be assigned a router ID of 64.
    - The reference bandwidth will be set to 64 Mb/s.
    - **The OSPFv3 process will be assigned an ID of 64.***
62. **Which three statements describe the similarities between OSPFv2 and OSPFv3? (Choose three.)**
    - **They both are link-state protocols.***
    - They both use the exit interface address as the source address when sending OSPF messages.
    - **They both share the concept of multiple areas.***
    - They both support IPsec for authentication.
    - **They both use the same DR/BDR election process.***
    - They both have unicast routing enabled by default.

63. **Match the description to the access method. (Not all options are used.)**

remote access method that uses encryption
preferred out-of-band access method
FTP
remote access via a dialup connection
unsecure remote access

64. **Match each description with the corresponding TCP mechanism. (Not all options are used.)**

received by a sender before transmitting more segments in a session
method of managing segments of data loss
FCS
used to identify missing segments of data
number of bytes a destination device can accept and process at one time

65. **Match the description with the correct category. (Not all options are used.)**

P2P application

The client can act also as a server within the same transaction.

Examples are BearShare and eMule.

peer-to-peer network

Clients and servers share resources.

A computer can serve as client for a transaction and as server for another.

client-server model

Most of the data flows from the server to the client.

An example is a DNS query.

66. **Refer to the exhibit. R1 is configured for NAT as displayed. What is wrong with the configuration?**

```
R1(config)# ip nat pool NAT-POOL2 209.165.200.5 209.165.200.10 netmask 255.255.255.224
R1(config)# access-list 1 permit 192.168.0.0 0.0.255.255
R1(config)# interface Fa0/0
R1(config-if)# ip nat inside
R1(config)# interface Fa0/1
R1(config-if)# ip nat inside
R1(config)# interface Serial0/0/0
R1(config-if)# ip nat outside
```

- Access-list 1 is misconfigured.
- **NAT-POOL2 is not bound to ACL 1.***

- Interface Fa0/0 should be identified as an outside NAT interface.
- The NAT pool is incorrect.

67. **Which two statements about NetFlow are true? (Choose two.)**
    - **NetFlow can be used to create baseline documentation.***
    - NetFlow can be used to collect performance indicators such as interface errors, CPU usage, and memory usage.
    - NetFlow can be used to monitor traffic statistics, including packet payload content.
    - **NetFlow is a Cisco-specific feature that enables the collection of detailed traffic profiles.***
    - NetFlow is a network monitoring and event reporting tool.
    - NetFlow traffic collectors use a "pull" based model to acquire traffic statistics from ports of interest.

68. **What benefit does NAT64 provide?**
    - It allows sites to use private IPv6 addresses and translates them to global IPv6 addresses.
    - It allows sites to connect multiple IPv4 hosts to the Internet via the use of a single public IPv4 address.
    - **It allows sites to connect IPv6 hosts to an IPv4 network by translating the IPv6 addresses to IPv4 addresses.***
    - It allows sites to use private IPv4 addresses, and thus hides the internal addressing structure from hosts on public IPv4 networks.

69. **What are three benefits of using Frame Relay for WAN connectivity? (Choose three.)**
    - QoS support using the IP precedence field
    - **one physical interface that can be used for several circuits***
    - integrated encryption
    - **mature technology***
    - **reasonable cost***
    - seamless direct connectivity to an Ethernet LAN

70. **What is one advantage to designing networks in building block fashion for large companies?**
    - **failure isolation***
    - increased network access time
    - coarse security control
    - fewer required physical resources

71. **What is an IPsec protocol that provides data confidentiality and authentication for IP packets?**
    - CHAP
    - **ESP***
    - RSA
    - IKE
    - PSK
    - AP

72. **Refer to the exhibit. Which two statements describe the results of entering these commands? (Choose two.)**

```
R1(config)# logging host 192.168.10.10
R1(config)# logging trap warnings
R1(config)# logging on
```

- **R1 will send system messages of levels 0 (emergencies) to level 4 (warnings) to a server.***
- R1 will not send critical system messages to the server until the command debug all is entered.
- R1 will reset all the warnings to clear the log.
- R1 will output the system messages to the local RAM.
- **The syslog server has the IPv4 address 192.168.10.10.***

73. **Refer to the exhibit. Based on the output that is shown, what type of NAT has been implemented?**

```
R1# show ip nat translations
Pro Inside global      Inside local    Outside local     Outside global
tcp 209.165.200.225:1405 10.6.15.2:1405 209.165.202.141:80 209.165.202.141:80
tcp 209.165.200.225:1406 10.6.15.1:1406 198.51.100.3:80     198.51.100.3:80
```

- dynamic NAT with a pool of two public IP addresses
- **PAT using an external interface***
- static NAT with one entry
- static NAT with a NAT pool

74. **Which type of long distance telecommunication technology provides point-to-point connections and cellular access?**
- **WiMax***
- municipal Wi-Fi
- satellite
- mobile broadband

75. **What are two advantages of packet switching over circuit switching? (Choose two.)**

- **The communication costs are lower.***
- There are fewer delays in the data communications processes.
- **Multiple pairs of nodes can communicate over the same network channel.***
- A dedicated secure circuit is established between each pair of communicating nodes.
- A connection through the service provider network is established quickly before communications start.

76. **Which two components of a WAN would more likely be used by an ISP? (Choose two.)**
- **CO***
- CPE
- demarcation point
- DTE
- **toll network***

77. **Which two characteristics describe time-division multiplexing? (Choose two.)**
- **Traffic is allocated bandwidth across a single wire based on preassigned time slots.***
- Bandwidth is allocated to channels based on whether a station has data to transmit.
- Encoding technology provides high data throughput in a minimum RF spectrum by supporting parallel data transmission.
- Depending on the configured Layer 2 protocol, data is transmitted across two or more channels via the use of time slots.

- **Data capacity across a single link increases as bits from multiple sources are transmitted using interleaved slices of time.***

78. **What is the protocol that provides ISPs the ability to send PPP frames over DSL networks?**
    - **PPPoE***
    - CHAP
    - PSK
    - LTE
    - PAP

79. **Fill in the blank.**
    IPsec operates at the network layer of the OSI model.

80. **Match the characteristic to the correct PPP authentication protocol. (Not all options are used.)**

Password Authentication Protocol
sends password in clear text
authenticating party controls the authentication attempts
characteristic

Challenge Handshake Authentication Protocol
password never travels on the link
uses MD5 as part of the authentication process
characteristic