**QUIZ-6**

**MCQ(Ch1-Ch12)**

**Choose the correct answer**

1. You need a network that provides centralized authentication for your users. Which of  
   the following logical topologies should you use?  
   **A.** VLANs  
   **B.** Peer-to-peer  
   **C.** Client-server  
   **D.** Mesh
2. In a physical star topology, what happens when a workstation loses its physical connection to another device?  
   **A.** The ring is broken, so no devices can communicate.  
   **B.** Only that workstation loses its ability to communicate.  
   **C.** That workstation and the device it’s connected to lose communication with the  
   rest of the network.  
   **D.** No devices can communicate because there are now two unterminated network  
   segments.
3. Which type of WAN technology uses labels, which enables priority of voice though the  
   network?  
   **A.** VPN  
   **B.** T1  
   **C.** MPLS  
   **D.** LAN  
   **E.** Bus
4. Which of the following is a concern when using peer-to-peer networks?  
   **A.** Where to place the server  
   **B.** Whose computer is least busy and can act as the server  
   **C.** The security associated with such a network  
   **D.** Having enough peers to support creating such a network
5. Which of the following is an example of a LAN?  
   **A.** Ten buildings interconnected by Ethernet connections over fiber-optic cabling  
   **B.** Ten routers interconnected by Frame Relay circuits  
   **C.** Two routers interconnected with a T1 circuit  
   **D.** A computer connected to another computer so they can share resources
6. What is a difference between a LAN and a WAN?  
   **A.** WANs need a special type of router port.  
   **B.** WANs cover larger geographical areas.  
   **C.** WANs can utilize either private or public data transport.  
   **D.** All of the above.
7. What advantage does the client-server architecture have over peer-to-peer?  
   **A.** Easier maintenance  
   **B.** Greater organization  
   **C.** Tighter security  
   **D.** All of the above
8. You have a network with multiple devices and need to have a smaller broadcast domain  
   while working with a single device. Which of the following is the best solution?  
   **A.** Use static IP addresses.  
   **B.** Add more hubs.  
   **C.** Implement more switches.  
   **D.** Install a router.
9. When designing a network and deciding which type of network topology to use, which  
   item(s) should be considered? (Select all that apply.)  
   **A.** Cost  
   **B.** Ease of installation  
   **C.** Ease of maintenance  
   **D.** Fault-tolerance requirements
10. Host 1 sent a SYN packet to Host 2. What will Host 2 send in response?  
    **A.** ACK  
    **B.** NAK  
    **C.** SYN-ACK  
    **D.** SYN-NAK  
    **E.** SYN
11. TCP and UDP reside at which layer of the OSI model?  
    **A.** 1  
    **B.** 2  
    **C.** 3  
    **D.** 4
12. Which layer of the OSI model is responsible for code and character-set conversion as  
    well as recognizing data formats?  
    **A.** Application  
    **B.** Presentation  
    **C.** Session  
    **D.** Network
13. At which layers of the OSI model do bridges, hubs, and routers primarily operate,  
    respectively?  
    **A.** Physical, Physical, Data Link  
    **B.** Data Link, Data Link, Network  
    **C.** Data Link, Physical, Network  
    **D.** Physical, Data Link, Network
14. Segmentation of a data stream happens at which layer of the OSI model?  
    **A.** Physical  
    **B.** Data Link  
    **C.** Network  
    **D.** Transport
15. When data is encapsulated, which is the correct order?  
    **A.** Data, frame, packet, segment, bits  
    **B.** Segment, data, packet, frame, bits  
    **C.** Data, segment, packet, frame, bits  
    **D.** Data, segment, frame, packet, bits
16. Acknowledgments, sequencing, and flow control are characteristic of which OSI layer?  
    **A.** Layer 2  
    **B.** Layer 3  
    **C.** Layer 4  
    **D.** Layer 7
17. At which layer of the OSI model would you find IP?  
    **A.** Transport  
    **B.** Network  
    **C.** Data Link  
    **D.** Physical
18. Routers perform routing at which OSI layer?  
    **A.** Physical  
    **B.** Data Link  
    **C.** Network  
    **D.** Transport  
    **E.** Application
19. Which of the following Ethernet Unshielded twisted-pair cabling types are commonly used?  
    **A.** 10BaseT  
    **B.** 100BaseTX  
    **C.** 1000BaseTX  
    **D.** All of the above
20. What type of connector does UTP cable typically use?  
    **A.** BNC  
    **B.** ST  
    **C.** RJ-45  
    **D.** SC
21. Fiber-optic cable is immune to electromagnetic interference (EMI) and radio frequency  
    interference (RFI) because it \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .  
    **A.** Transmits analog signals using electricity  
    **B.** Transmits analog signals using light impulses  
    **C.** Transmits digital signals using light impulses  
    **D.** Transmits digital signals using electricity
22. What type of cable should be used if you need to make a cable run longer than  
    100 meters?  
    **A.** Category 5e  
    **B.** Category 6  
    **C.** Fiber-optic  
    **D.** Coaxial
23. Which of the following are fiber-optic connectors? (Select three.)  
    **A.** BNC  
    **B.** ST  
    **C.** RJ-11  
    **D.** SC  
    **E.** LC  
    **F.** RJ-45
24. Which type of cable does EMI have the least effect on?  
    **A.** Coax  
    **B.** Fiber-optic  
    **C.** UTP  
    **D.** STP
25. How many wires are used in a 100 Mbps UTP transmission?  
    **A.** 2  
    **B.** 4  
    **C.** 6  
    **D.** 8
26. How is a T1 crossover cable crosses wired?  
    **A.** Pins 1, 2, 4, and 5 are connected to 4, 5, 1, and 2.  
    **B.** Pins 2, 3, 4, and 5 are connected to 4, 5, 1, and 2.  
    **C.** Pins 1, 2, 4, and 5 are connected to 3, 4, 5,and 6.  
    **D.** Pins 4, 5, 6, and 7 are connected to 4, 5, 1, and 2.
27. You need to make a 568B cable for a FastEthernet link. How many pairs will you use?  
    **A.** 1  
    **B.** 2  
    **C.** 3  
    **D.** 4
28. How many devices in a collision domain have to listen when a single host talks?  
    **A.** 2  
    **B.** 3  
    **C.** 1  
    **D.** All
29. What protocol helps devices share the bandwidth evenly without having two devices  
    transmit at the same time on the network medium?  
    **A.** TCP/IP  
    **B.** CSMA/CD  
    **C.** HTTPS  
    **D.** TFTP
30. How many wire pairs are used with half duplex?  
    **A.** 2  
    **B.** 1  
    **C.** 4  
    **D.** None of the above
31. What is the effective total throughput increase with a full-duplex connection?  
    **A.** None  
    **B.** Twice as much  
    **C.** Four times as much  
    **D.** Ten times as much
32. What is the decimal equivalent of this binary number:  
    11000000.10101000.00110000.11110000?  
    **A.** 192.168.48.192  
    **B.** 192.168.48.240  
    **C.** 192.168.64.224  
    **D.** 192.168.32.248
33. How is the decimal value 10 represented in binary?  
    **A.** 1000  
    **B.** 1001  
    **C.** 1010  
    **D.** 1011
34. How many bits is a MAC address?  
    **A.** 16  
    **B.** 32  
    **C.** 48  
    **D.** 64
35. What is the maximum distance of 1000BaseT?  
    **A.** 100 meters (328 feet)  
    **B.** 128 meters (420 feet)  
    **C.** 1000 meters (3280 feet)  
    **D.** 1024 meters (3360 feet)
36. What does the *Base* mean in 100BaseTX?  
    **A.** Broadband  
    **B.** 100Mbps  
    **C.** Baseband  
    **D.** Twisted-pair at 100Mbps
37. Which of the following is not a term used when making SOHO Internet connections?  
    **A.** Hub  
    **B.** Repeater  
    **C.** NIC  
    **D.** Switch
38. What is the primary function of a bridge?  
    **A.** Breaks up collision domains  
    **B.** Allows a NIC or other networking device to connect to a different type of media  
    than it was designed for  
    **C.** Allows mobile users to connect to a wired network wirelessly  
    **D.** None of the above
39. Which of the following is among the benefits of a switch?  
    **A.** Protects LAN resources from attackers on the Internet  
    **B.** Provides extra bandwidth  
    **C.** Reduces throughput  
    **D.** Allows access to all computers on a LAN
40. What is an advantage of using DHCP in a network environment?  
    **A.** More difficult administration of the network  
    **B.** Static IP addressing  
    **C.** Can send an operating system for the PC to boot from  
    **D.** Assigns IP address to hosts
41. Which device should be used if you need to send incoming packets to one or more  
    machines that are hidden behind a single IP address?  
    **A.** Switch  
    **B.** Load balancer  
    **C.** Hub  
    **D.** Repeater
42. What role does the “A” record in a Domain Name Service (DNS) server have in your  
    network?  
    **A.** Translates human name to IP address  
    **B.** Translates IP address to human name  
    **C.** Enables printing, copying, and faxing from one device  
    **D.** Controls network packets to optimize performance
43. What is the most common use for a web proxy?  
    **A.** Web cache  
    **B.** Increases throughput  
    **C.** DHCP services  
    **D.** Supports user authentication
44. Users arrive at the office after a weekend and the hosts that were shut down over the  
    weekend are restarted but cannot access the LAN or Internet. Hosts that were not shut  
    down are working fine. Where can the problem be?  
    **A.** The DNS server  
    **B.** The DHCP server  
    **C.** The proxy server  
    **D.** The firewall
45. Users on your network are saturating your bandwidth because they are using too many  
    non-work-related sites. What device would limit the availability of the types of sites  
    that users on a LAN have access to while providing granular control over the traffic  
    between the local LAN and the Internet?  
    **A.** Switch  
    **B.** DHCP server  
    **C.** DNS server  
    **D.** Proxy server
46. You need to have secure communications using HTTPS. What port number is used by  
    default?  
    **A.** 69  
    **B.** 23  
    **C.** 21  
    **D.** 443
47. What protocol is used to find the hardware address of a local device?  
    **A.** RARP  
    **B.** ARP  
    **C.** IP  
    **D.** ICMP  
    **E.** BootP
48. If you can ping by IP address but not by hostname, or FQDN, which of the following  
    port numbers is related to the server process that is involved?  
    **A.** 21  
    **B.** 23  
    **C.** 53  
    **D.** 69  
    **E.** 80
49. Which of the following describe the DHCP Discover message? (Choose two.)  
    **A.** It uses FF:FF:FF:FF:FF:FF as a Layer 2 broadcast.  
    **B.** It uses UDP as the Transport layer protocol.  
    **C.** It uses TCP as the Transport layer protocol.  
    **D.** It does not use a Layer 2 destination address.
50. What Layer 4 protocol is used for a Telnet connection, and what is the default port  
    number?  
    **A.** IP, 6  
    **B.** TCP, 21  
    **C.** UDP, 23  
    **D.** ICMP, 21  
    **E.** TCP, 23
51. Which of the following services use TCP? (Choose three.)  
    **A.** DHCP  
    **B.** SMTP  
    **C.** SNMP  
    **D.** FTP  
    **E.** HTTP  
    **F.** TFTP
52. Which of the following TCP/IP protocols are used at the Application layer of the OSI  
    model? (Choose three.)  
    **A.** IP  
    **B.** TCP  
    **C.** Telnet  
    **D.** FTP  
    **E.** TFTP
53. You need to have a connection to run applications that are installed on only your  
    desktop computer at your office. Which protocol will provide a GUI interface to  
    your work computer?  
    **A.** Telnet  
    **B.** FTP  
    **C.** RDP  
    **D.** IMAP  
    **E.** SMTP
54. What layer in the IP stack is equivalent to the Transport layer of the OSI model?  
    **A.** Application  
    **B.** Host-to-Host  
    **C.** Internet  
    **D.** Network Access
55. Which of the following allows a server to distinguish among different simultaneous  
    requests from the same host? Choose all that appply.  
    **A.** They have different port numbers.  
    **B.** A NAT server changes the IP address for subsequent requests.  
    **C.** A server is unable to accept multiple simultaneous sessions from the same host.  
    One session must end before another can begin.  
    **D.** The MAC address for each one is unique.
56. A host automatically configured with an address from which of the following ranges  
    indicates an inability to contact a DHCP server?  
    **A.** 169.254.0.*x* with a mask of 255.255.255.0  
    **B.** 169.254.*x.x* with a mask of 255.255.0.0  
    **C.** 169.254.*x.x* with a mask of 255.255.255.0  
    **D.** 169.255.*x.x* with a mask of 255.255.0.0
57. Which of the following describes a broadcast address?  
    **A.** All network bits are on (1s).  
    **B.** All host bits are on (1s).  
    **C.** All network bits are off (0s).  
    **D.** All host bits are off (0s).
58. Which of the following is a Layer 2 broadcast?  
    **A.** FF.FF.FF.EE.EE.EE  
    **B.** FF.FF.FF.FF.FF.FF  
    **C.** 255.255.255.255  
    **D.** 255.0.0.0
59. A host is rebooted and you view the IP address that it was assigned. The address is  
    169.123.13.34. Which of the following happened?  
    **A.** The host received an APIPA address.  
    **B.** The host received a multicast address.  
    **C.** The host received a public address.  
    **D.** The host received a private address.
60. Which of the following is true when describing an anycast address?  
    **A.** Packets addressed to a unicast address from an anycast address are delivered to a  
    single interface.  
    **B.** Packets are delivered to all interfaces identified by the address. This is also called a  
    one-to-many address.  
    **C.** This address identifies multiple interfaces, and the anycast packet is delivered to  
    only one address. This address can also be called one-to-one-of-many.  
    **D.** These addresses are meant for nonrouting purposes, but they are almost globally  
    unique so it is unlikely they will have an address overlap.
61. You want to ping the loopback address of your local host. Which two addresses could  
    you type?  
    **A.** ping 127.0.0.1  
    **B.** ping 0.0.0.0  
    **C.** ping ::1  
    **D.** trace 0.0.::1
62. Which of the following are private IP addresses? (Choose two.)  
    **A.** 12.0.0.1  
    **B.** 168.172.19.39  
    **C.** 172.20.14.36  
    **D.** 172.33.194.30  
    **E.** 192.168.24.43
63. Which of the following is an invalid IP address for a host?  
    **A.** 10.0.0.1  
    **B.** 128.0.0.1  
    **C.** 224.0.0.1  
    **D.** 172.0.0.1
64. What is the maximum number of IP addresses that can be assigned to hosts on a local  
    subnet that uses the 255.255.255.224 subnet mask?  
    **A.** 14  
    **B.** 15  
    **C.** 16  
    **D.** 30  
    **E.** 31  
    **F.** 62
65. What is the subnetwork address for a host with the IP address 200.10.5.68/28?  
    **A.** 200.10.5.56  
    **B.** 200.10.5.32  
    **C.** 200.10.5.64  
    **D.** 200.10.5.0
66. The network address of 172.16.0.0/19 provides how many subnets and hosts?  
    **A.** 7 subnets, 30 hosts each  
    **B.** 7 subnets, 2,046 hosts each  
    **C.** 7 subnets, 8,190 hosts each  
    **D.** 8 subnets, 30 hosts each  
    **E.** 8 subnets, 2,046 hosts each  
    **F.** 8 subnets, 8,190 hosts each
67. If a host on a network has the address 172.16.45.14/30, what is the subnetwork this  
    host belongs to?  
    **A.** 172.16.45.0  
    **B.** 172.16.45.4  
    **C.** 172.16.45.8  
    **D.** 172.16.45.12  
    **E.** 172.16.45.16
68. You have an interface on a router with the IP address of 192.168.192.10/29. What is  
    the broadcast address the hosts will use on this LAN?  
    **A.** 192.168.192.15  
    **B.** 192.168.192.31  
    **C.** 192.168.192.63  
    **D.** 192.168.192.127  
    **E.** 192.168.192.255
69. What is the highest usable address on the 172.16.1.0/24 network?  
    **A.** 172.16.1.255  
    **B.** 172.16.1.254  
    **C.** 172.16.1.253  
    **D.** 172.16.1.23
70. If an Ethernet port on a router were assigned an IP address of 172.16.112.1/25, what  
    would be the subnet address of this host?  
    **A.** 172.16.112.0  
    **B.** 172.16.0.0  
    **C.** 172.16.96.0  
    **D.** 172.16.255.0  
    **E.** 172.16.128.0
71. Using the illustration in question 15, what would be the IP address of E0 if you were  
    using the fist subnet? The network ID is 192.168.10.0/28, and you need to use the last  
    available IP address in the range. Again, the zero subnet should not be considered valid  
    for this question.  
    **A.** 192.168.10.24  
    **B.** 192.168.10.62  
    **C.** 192.168.10.30  
    **D.** 192.168.10.127
72. Your router has the following IP address on Ethernet0: 172.16.2.1/23. Which of the following can be valid host IDs on the LAN interface attached to the router? (Choose two.)  
    **A.** 172.16.0.5  
    **B.** 172.16.1.100  
    **C.** 172.16.1.198  
    **D.** 172.16.2.255  
    **E.** 172.16.3.0  
    **F.** 172.16.3.255
73. Which is not a routing protocol?  
    **A.** RIP  
    **B.** RIPv2  
    **C.** RIPv3  
    **D.** EIGRP
74. What is it called when protocols update their forwarding tables after changes have  
    occurred?  
    **A.** Name resolution  
    **B.** Routing  
    **C.** Convergence  
    **D.** ARP resolution
75. What command would be used to view the ARP cache on your host?  
    **A.** C:\ >show ip route  
    **B.** C:\ >show ip arp  
    **C.** C:\ >show protocols  
    **D.** C:\ >arp –a
76. Which of the following is not a distance vector protocol?  
    **A.** RIPv1  
    **B.** RIPv2  
    **C.** OSPF  
    **D.** IGRP
77. Which of the following is a hybrid routing protocol?  
    **A.** RIPv2  
    **B.** EIGRP  
    **C.** IS-IS  
    **D.** IGRP
78. What EGP protocol is used on the Internet?  
    **A.** GGP  
    **B.** EGP  
    **C.** BGP  
    **D.** IGP
79. What two pieces of information does a router require to make a routing decision?  
    **A.** Destination network (address)  
    **B.** Destination MAC address  
    **C.** Application layer protocol  
    **D.** Neighbor router
80. Where along the IP routing process does a packet get changed?  
    **A.** Router  
    **B.** Host A  
    **C.** Destination device  
    **D.** Host B
81. You need to perform maintenance on a router in your corporate office. It is important  
    that the network does not go down. What can you do to accomplish your goal?  
    **A.** Configure BGP on the router.  
    **B.** Implement NAT on the router.  
    **C.** Configure on the router a static route that temporarily reroutes traffic through  
    another office.  
    **D.** Implement convergence on the router.
82. Which of the following protocols support VLSM, summarization, and discontiguous  
    networking? (Choose three.)  
    **A.** RIPv1  
    **B.** IGRP  
    **C.** EIGRP  
    **D.** OSPF  
    **E.** BGP  
    **F.** RIPv2
83. Which of the following are considered distance vector routing protocols? (Choose two.)  
    **A.** OSPF  
    **B.** RIP  
    **C.** RIPv2  
    **D.** IS-IS
84. Which of the following is considered a hybrid routing protocol?  
    **A.** OSPF  
    **B.** BGP  
    **C.** RIPv2  
    **D.** IS-IS  
    **E.** EIGRP
85. Which of the following is a vendor-specific routing protocol?  
    **A.** STP  
    **B.** OSPF  
    **C.** RIPv1  
    **D.** EIGRP  
    **E.** IS-IS
86. What is the administrative distance of OSPF?  
    **A.** 90  
    **B.** 100  
    **C.** 110  
    **D.** 120
87. What is the difference between static and dynamic routing?  
    **A.** You use static routing in large, scalable networks.  
    **B.** Dynamic routing is used by a DNS server.  
    **C.** Dynamic routes are added automatically.  
    **D.** Static routes are added automatically.
88. What routing protocol is typically used to connect ASs on the Internet?  
    **A.** IGRP  
    **B.** RIPv2  
    **C.** BGP  
    **D.** OSPF
89. RIPv2 sends out its routing table every 30 seconds just like RIPv1, but it does so more  
    efficiently. What type of transmission does RIPv2 use to accomplish this task?  
    **A.** Broadcasts  
    **B.** Multicasts  
    **C.** Telecast  
    **D.** None of the above
90. What EIGRP information is held in RAM and maintained through the usage of hello  
    and update packets? (Select all that apply.)  
    **A.** DUAL table  
    **B.** Neighbor table  
    **C.** Topology table  
    **D.** Successor route
91. Which of the following uses only hop count as a metric to find the best path to a  
    remote network?  
    **A.** RIP  
    **B.** EIGRP  
    **C.** OSPF  
    **D.** BGP
92. What is the frequency range of the IEEE 802.11a standard?  
    **A.** 2.4Gbps  
    **B.** 5Gbps  
    **C.** 2.4GHz  
    **D.** 5GHz
93. Which devices can interfere with the operation of a wireless network because they  
    operate on similar frequencies? (Choose two.)  
    **A.** Copier  
    **B.** Microwave oven  
    **C.** Toaster  
    **D.** Cordless phone  
    **E.** IP phone  
    **F.** AM radio
94. How many non-overlapping channels are available with 802.11b?  
    **A.** 3  
    **B.** 12  
    **C.** 23  
    **D.** 40
95. What is the maximum data rate for the 802.11a standard?  
    **A.** 6Mbps  
    **B.** 11Mbps  
    **C.** 22Mbps  
    **D.** 54Mbps
96. What is the maximum data rate for the 802.11b standard?  
    **A.** 6Mbps  
    **B.** 11Mbps  
    **C.** 22Mbps  
    **D.** 54Mbps
97. You connect a new host to your company’s wireless network. The host is set to receive  
    a DHCP address and the WEP key is entered correctly. However, the host cannot connect to the network. What can the problem be?  
    **A.** DNS is not configured on the host.  
    **B.** MAC filtering is enabled on the AP.  
    **C.** The network has run out of wireless connections.  
    **D.** The host is enabled to run 802.11b and 802.11g.
98. Which additional configuration step is necessary in order to connect to an access point  
    that has SSID broadcasting disabled?  
    **A.** Set the SSID value in the client software to public.  
    **B.** Configure open authentication on the AP and the client.  
    **C.** Set the SSID value on the client to the SSID configured on the AP.  
    **D.** Configure MAC address filtering to permit the client to connect to the AP.
99. You have installed a point-to-point connection using wireless bridges and Omnidirectional antennas between two buildings. The throughput is low. What can you  
    do to improve the link?  
    **A.** Replace the bridges with APs.  
    **B.** Replace the Omni-directional antennas with Yagis.  
    **C.** Configure 802.11a on the links.  
    **D.** Install amps to boost the signal.
100. 802.11n uses MIMO. How does this optimize throughput to gain the high speed  
     advantage that 802.11n provides?  
     **A.** By specifying an acknowledgment of each and every frame, 802.11n provides better overhead.  
     **B.** Several frames are sent by several antennae over several paths and are then recombined by another set of antennae.  
     **C.** One frame at a time is sent, but faster than in 802.11g because multiple antennas  
     are used (multiple-in, multiple-out).  
     **D.** MIMO packs smaller packets into a single unit, which improves throughput.