Multiple Choice. Indicate your answer by marking the corresponding letter on your answer sheet.				
1. When using multiple encapsulations on an interface, what must be assigned?	a. Multiple protocols	**b. Multiple network numbers**	c. Multiple subnet masks	d. Multiple SAP types
2. Why would you use the command IPX maximum-paths?	a. To define the maximum hops	b. To specify the number of routes available	**c. To provide load sharing**	d. To increase the tick count
3. When configuring interfaces for IPX, what must be assigned to each interface?	a. IP address	b. Host address	**c. Network number**	d. Subnet mask
4. While in use, where are software applications stored?	**a. RAM**	b. ROM	c. NIC	d. EPROM
5. Which of the following commands displays current TCP/IP network connections?	a. Ping	b. Tracert	c. Telnet	**d. Netstat**
6. Which of the following commands is used by Windows NT computers to display IP settings?	**a. Ipconfig**	b. Winipcfg	c. Ipsetting	d. Ipstats
7. What is a network interface card (NIC)?	a. A WAN adapter	b. A card used to make modem connections	c. A card used only for Ethernet networks	**d. A printed circuit board that provides network communication**
8. What is **NOT** an important consideration when purchasing a NIC?	a. The type of network	**b. The type of applications**	c. The type of media	d. The type of system bus
9. Which PC hardware upgrade must take place to change the PC's network speed from 10Mbps to 100Mbps?	a. Install a faster video card	b. Install a faster hard drive	c. Install a faster serial port	**d. Install a faster NIC**
10. What is the expansion slot on laptops commonly called?	a. IEEE	**b. PCMCIA**	c. ITU-T	d. FDDI
11. What are the most common LAN technologies used in networking today?	a. Ethernet, token ring, DecNET	**b. Ethernet, token ring, FDDI**	c. Ethernet, DecNET, FDDI	d. Ethernet, token ring, ARCnet
12. Standard Ethernet using CSMA/CD can support data transmission rates of up to _____.	a. 4Mbps	**b. 10Mbps**	c. 20Mbps	d. 50Mbps
13. The most important circuits provided by the Ethernet physical connection are _____.	a. TX	b. RX	c. collision detection	**d. all of the above**
14. One way to alleviate congestion is to _____.	a. install more hubs	b. switch to a bus topology	c. use an extended star	**d. increase the bandwidth**
15. _____ is the time it takes a frame to travel from its source station to its final destination on the network.	a. Hop count	b. Bits per second	**c. Propagation delay**	d. None of the above
16. The time necessary to move a packet from the data link layer to the physical layer is known as _____?	a. packet delay	**b. transmission time**	c. convergence	d. queing
17. A Layer 1 device that is used to extend the coverage area of a LAN segment is a _____.	a. router	b. switch	**c. repeater**	d. gateway
18. What percentage of bandwidth is offered in each direction when using Full Duplex?	a. 50 percent	b. 75 percent	**c. 100 percent**	d. The same as half duplex
19. The performance of a shared media LAN can be improved by _____.	**a. segmenting the network**	b. moving the workstations closer together	c. installing a more powerful server	d. installing more servers and printers
20. Bridges learn about a network by building a table based on _____.	**a. mac addresses**	b. ip addresses	c. arp requests	d. rip requests
21. Which device operates with the highest latency rate?	a. switches	**b. routers**	c. bridges	d. hubs

22. What is the data-link destination address of a broadcast message?	a. 111.111.111.111	b. 255.255.255.255	c. AAAA.AAAA.AAAA	**d. FFFF.FFFF.FF**FF
23. Which Control Panel icon should be accessed to configure TCP/IP LAN settings in a Windows 95 PC?	a. Device Manager	b. System	**c. Network**	d. Internet Options
24. What does a plug-in do?	a. Allows one to view material saved in the HTML format	b. Allows one to view GIF files	**c. Allows the browser to display proprietary file types**	d. Allows multiple versions of the browser to run at the same time
25. All computers on a network can view academy curriculum via a web browser except one. This PC operates fine locally. What is the most likely cause of the problem?	a. PC CPU speed	b. PC Bus speed	c. Network speed	d. **Network Connection**
26. Which component of a PC is a collection of wires through which data is transferred from one part of the computer to another?	a. Expansion slot	**b. Bus**	c. Microprocessor	d. System unit
27. In the TCP/IP model, which layer would deal with reliability, flow control, and error correction?	**a. Transport**	b. Internet	c. Network	d. Application
28. At which layer of the TCP/IP model are FTP and HTTP located?	**a.** Application	b. Transport	c. Internet	d. Network
29. Which is a characteristic of the TCP/IP model?	a. Combines host and media layers	b. Combines session and transport layers	**c. Combines data link and physical layers**	d. Combines network and data link layers
30. At which layer of the OSI model is telnet located?	a. Transport	b. Session	c. Presentation	**d. Application**
31. Which network device offers full-duplex, dedicated bandwidth to segments or desktops?	a. Hub	b. Bridge	**c. Ethernet switch**	d. Router
32. Which of the following is true about a CSMA/CD network?	a. Signals are always sent in multi-frame broadcast mode.	b. One node's transmission goes to the nearest router that sends it directly to the destination.	c. Signals are sent directly to the destination if both the MAC and IP addresses are known by the source.	**d. One node's transmission traverses the entire network and is seen and checked by every node.**
33. What happens after a collision has occurred on a network after the jam signal is sent?	a. The router clears the route and notifies the source to resend.	**b. All stations stop sending frames for a randomly selected time period.**	c. A keep alive signal is generated to hold the message until the route clears.	d. The source station waits for the collision to dissipate and then broadcasts an all clear.
34. Which best describes the structure of a MAC address?	a. 16 bit network code plus 16 bit serial number	b. 16 bit vendor code plus 16 bit serial number	**c. 24 bit vendor code plus 24 bit serial number**	d. 24 bit network identity plus 24 bit host identity
35. What happens if host A broadcasts an ARP request looking for the MAC address of host B which is located on the same network as host A?	a. The name server looks at the request and replies with the MAC address of host B.	b. All devices look at the request and any device will reply with the IP address of host B.	**c. All devices look at the request and ONLY host B will reply with the MAC address.**	d. The nearest router looks at the request and replies with the MAC address of host B or forwards the request to another router.

36. Host A and host Z are on different subnets. If an ARP request is sent from host A in search of host Z's MAC address, what will happen?	a. There will be no response.	b. The router will respond with the MAC address of host Z.	**c. The router will respond with its own MAC address.**	d. The router will forward the request to the correct subnet so host Z can respond.
37. Where is the Layer 2 address found on a workstation?	a. In the routing table	**b. On the network interface card**	c. In the name server table	d. It is located on the DHCP server
38. If a Class B network is subnetted with a mask of 255.255.240.0, how many useable subnets are created?	a. 2	b. 6	**c. 14**	d. 30
39. What best describes the functions of the Application Layer?	a. Establishes, manages, and terminates applications	**b. Supports communicating components of applications such as e-mail**	c. Defines end-to-end delivery of packets	d. Translates between different data formats such as ASCII and EBCDIC
40. Which types of service are provided by ISDN Layer 3 specifications?	a. Data framing	b. User and password authentication	c. Connection oriented and connectionless sessions	**d. Establish circuit-switched connections**
41. When installing ISDN what will the encapsulation type be if no changes are made during the installation?	a. VPP	b. SLIP	c. PPP	**d. HDLC**
42. Which configuration Command is used to set the number of routes used for load sharing?	a. IPX Routing	b. IPX Networks	**c. IPX Maximum-Paths**	d. Router Rip
43. Which command is used to display IPX routing tables?	a. Show IPX Servers	**b. Show IPX Route**	c. Sow IPX Traffic	d. how IPX Interface
44. What is the default WAN tick metric for IPX networks?	a. Five	**b. Six**	c. Seven	d. Eight
45. Which IPX Routing command is used to show the number and type of packets received and transmitted by the router?	a. Show IPX Servers	b. Show IPX Route	**c. Show IPX Traffic**	d. how IPX Interface
46. Select the command that you would use to check IPX routing updates.	a. Show IPX routing updates	b. Show IPX routing activity	**c. Debug IPX routing activity**	d. Debug IPX RIP
47. Select the command that you would use to check IPX SAP updates.	a. SAP routing updates	b. Show SAP routing activity	**c. Debug IPX SAP**	d. Debug SAP routing activity
48. What command is used to configure a subinterface that will forward broadcasts and routing updates?	a. Router(config-if)#interface serial 1 multipoint	b. Router(config-if)#interface serial 1 point-to-point	**c.** Router(config-if)#interface serial 1.1 multipoint	d. Router(config-if)#interface serial 1.1 point-to-point
49. Which of the following single router changes should **NOT** adversely affect network operations?	**a. Creating a router banner**	b. Changing the DNS server's address	c. Changing subnet mask length	d. Changing the routed protocols in use
50. Which protocol works with Network Traffic Monitoring software to gather information for monitoring analysis?	a. RIP	b. IGRP	**c. SNMP**	d. IPX/SPX
51. What does remote monitoring use to gather data?	a. SNMP agent	**b. RMON probe**	c. SNTP server	d. MIB
52. What command is used to establish a remote login to a router?	a. Rsession	b. Rlogin	**c. Telnet**	d. Rconsole
53. What command is used to display the hardware addresses in the arp cache?	a. Tracert	**b. Arp -a**	c. Rarp -a	d. Arp -s
54. What protocol supports Network Management?	a. SMTP	b. NFS	**c. SNMP**	d. FTP

55. What command is used to check a physical connection between two hosts?	a. TPING	b. WINPING	c. TCPING	**d. PING**
56. Which numbering system do computers use for data processing?	**a. Binary**	b. Decimal	c. Hexadecimal	d. Octal
57. What is the maximum cable length of unshielded twisted pair (UTP) in meters?	**a. 100**	b. 185	c. 200	d. 500
58. What is a feature of coaxial cable?	a. It contains four wire pairs in the center.	b. It uses a plastic woven braid.	**c. It contains a copper conductor at the center.**	d. It relies on cancellation effects to reduce the amount of interference.
59. What is an advantage of coaxial cable?	**a. It can run unrepeated farther than twisted-pair cabling.**	b. It is less expensive than any other type of cabling.	c. It is easier to install than UTP.	d. It is more susceptible to noise than UTP
60. Which ISDN channels are for voice, video, and data?	a. D channels	**b. B channels**	c. Data channels	
61. What is the bit rate for a PRI connection, also known as an E1, that has 30 8-bit B channels plus one 8-bit D channel plus one 8-bit framing channel?	a. 64 kbps	**b. 2.048 Mbps**	c. 192 kbps	d. 1.544 Mbps
62. What is one advantage of using fiber optic cabling in networks?	a. Cheap	b. Easy to install	**c. Not susceptible to electromagnetic** interference	d. Available either with or without an outer shield
63. What is a feature of fiber-optic cable?	**. It is capable of higher data rates than other types of networking media.**	b. Its core is made of highly reflective Kevlar.	c. It relies on total internal cancellation to guide light for tremendous distances.	d. It uses an intense incandescent light.
64. What kind of cable is most frequently recommended and implemented in installations today?	a. Category 3	b. Category 4	**c. Category 5**	d. Coaxial cable
65. Which element of the TIA/EIA standard allows for the greatest cable length?	a. Patch cords	b. Work area cable	**c. Horizontal cabling**	d. Diagonal cabling
66. What is the standard 10Base-T termination for the telecommunications outlet?	a. UTP 55	**b. RJ-45**	c. EIA 45	d. TIA 74
67. What does the twisting of the wires do in a CAT-5 cable?	a. Makes it thinner	b. Makes it less expensive	**c. Limits signal degradation**	d. Allow 6 pairs to fit in the space of 4 pairs
68. What is true about RJ-45 connectors?	**a. Have eight conductors**	b. Have four conductors	c. Have one center conductor	d. They are a layer 2 component.
69. If Novell RIP checks multiple paths and the two distances-vector metrics found for both paths are the same, the router _____.	a. Select the route with the lowest hop count	b. Discards the packet	c. Forwards the packet out the default route	**d. Load shares**
70. What is the default type of routing protocol used by Novell?	a. Link-State	**b. Distance Vector**	c. Hybrid	d. Both A and B
71. What do Routers do with SAP packets?	**a. Try to build a SAP table**	b. Discard the SAP packets	c. Forward the SAP packets	d. Send them to a SAP server
72. SAP tables are stored on _____.	a. workstations and servers	**b. routers and servers**	c. routers and workstations	d. routers only

73. Where does the response to a GNS request come from if there is no NetWare server on the same LAN?	**a. Router**	b. Remote NetWare server	c. Local SAP server	d. Switch
74. Where does the response to a GNS request come from if there is both a Cisco router and a Netware server on the same LAN?	a. Router	**b. Local NetWare server**	c. Local SAP server	d. Switch
75. Which of the following commands enables IPX routing?	a. IPX Maximum-paths	**b. IPX Routing**	c. IPX Network	d. Router Novell-Rip
76. Packets are encapsulated into frames at which layer of the OSI model?	**a. Data link**	b. Network	c. Transport	d. Session
77. What is the order of the layers in the TCP/IP model?	**a. Network, internet, transport, application**	b. Network, data link, transport, application	c. Physical, data link, transport, application	d. Internet, data link, transport, application
78. A VLAN is based on which type of grouping?	**a. Logical**	b. Physical	c. Star	d. Ethernet
79. VLANS logically segment the physical LAN into separate Ethernet _____.	a. autonomous systems	**b. broadcast domains**	c. network sectors	d. virtual sections
80. Users may be reassigned to different VLANs using _____.	a. hubs	**b. software**	c. cabling	d. bridges
81. A benefit of VLANs is _____.	a. elimination of broadcast domains	b. increased administration	c. multiple cable runs	**d. tighter network security**
82. The VLAN backbone should typically be a(n) _____.	a. STP cable	b. 10 MBPS link	**c. high capacity link**	d. low bandwidth link
83. _____ is a technique that examines particular information about each frame.	a. Latency	b. Frame resolving	**c. Frame filtering**	d. Store and forward
84. The IEEE states that _____ is the way to implement VLANS.	a. grouping	b. filtering	c. source bridging	**d. frame tagging**
85. Frame tagging functions at what OSI layer?	**a. 2**	b. 3	c. 1	d. 4
86. Frame tagging places a unique identifier in the header of each frame as it is forwarded across the network _____.	a. microsegment	b. LAN	**c. backbone**	d. WAN
87. VLANs make filtering and forwarding decisions based on _____.	a. packets	**b. frames**	c. presentation header	d. network design
88. Which ISDN channel is used to establish call setup?	**a.** Channel D	b. Channel B	c. Channel Call setup	d. Channel C
89. A TE2 requires what additional device to attach to an ISDN connection?	a. NT1	b. NT2	**c.** TA	d. Nothing
90. What ISDN device connects four-wire ISDN wiring to the two-wire local loop facility?	a. TA	b. TE1	c. NT2	**d. NT1**
91. What is an example of an application that requires both a client and server component in order to function?	**a. Web browser**	b. ASCII	c. Microsoft Word	d. PICT
92. What is the function of the service profile identifiers or SPIDs?	a. Replace the DLC number	b. Used instead of subnetting	**c. Identify line configuration**	d. Logical address of the ISDN router
93. What do ISDN protocols that begin with Q identify?	a. Concepts	**b. Signaling**	c. Terminology	d. Data rates
94. What type of data is carried on ISDN B channels?	a. Analog	b. Sideband signals	c. Signal and control	**d. Voice and data**
95. What is the function of the framing bit in an ISDN physical-layer frame?	a. Identifies user data	**b. Provides synchronization**	c. Adjusts the average bit value	d. Contention resolution

96. What links are typically the lowest speed links in the enterprise?	a. LAN links	b. WAN links	**c. Remote access links**	d. Frame Relay links
97. What is the most common use of ISDN?	a. Dedicated local access	b. Remote access through cable connections	**c. Remote access through dial-up connections**	d. Dedicated redundant backup
98. Which ISDN connection method allows a remote user to appear as part of the network?	a. LAN link	**b. Remote node**	c. Callback authentication	d. Virtual station
99. What method does a router use to build a Frame Relay map?	a. ARP requests	b. RARP requests	c. Inverse RARP requests	**d. Inverse ARP requests**
100. What is the purpose of a Frame Relay map?	a. Establish the entire route from beginning to end points	b. Workstation address resolution	**c. Router next-hop address resolution**	d. Provides routing functionality to frame relay switches