1. **The physical layer is concerned with \_\_\_\_\_\_\_\_\_\_\_  
   a) bit-by-bit delivery**b) process to process delivery  
   c) application to application delivery  
   d) port to port delivery
2. **Which transmission media provides the highest transmission speed in a network?**a) coaxial cable  
   b) twisted pair cable **c) optical fiber**d) electrical cable
3. **The portion of physical layer that interfaces with the media access control sublayer is called \_\_\_\_\_\_\_\_\_\_\_  
   a) physical signalling sublayer**b) physical data sublayer  
   c) physical address sublayer  
   d) physical transport sublayer
4. **The physical layer provides \_\_\_\_\_\_\_\_\_\_**  
   a) mechanical specifications of electrical connectors and cables  
   b) electrical specification of transmission line signal level  
   c) specification for IR over optical fiber  
   **d) all of the mentioned**
5. **In asynchronous serial communication the physical layer provides \_\_\_\_\_\_\_\_\_\_\_  
   a) start and stop signalling**b) flow control  
   **c) both start & stop signalling and flow control**d) only start signalling
6. **The physical layer is responsible for \_\_\_\_\_\_\_\_\_\_**a) line coding  
   b) channel coding  
   c) modulation  
   **d) all of the mentioned**
7. **The physical layer translates logical communication requests from the \_\_\_\_\_\_ into hardware specific operations.  
   a) data link layer**  
   b) network layer  
   c) trasnport layer  
   d) application layer
8. **A single channel is shared by multiple signals by \_\_\_\_\_\_\_\_\_\_\_\_**  
   a) analog modulation  
   b) digital modulation  
   **c) multiplexing**d) phase modulation
9. **Wireless transmission of signals can be done via \_\_\_\_\_\_\_\_\_\_\_**a) radio waves  
   b) microwaves  
   c) infrared  
   **d) all of the mentioned**
10. **The data link layer takes the packets from \_\_\_\_\_\_\_\_\_ and encapsulates them into frames for transmission.  
    a) network layer**b) physical layer  
    c) transport layer  
    d) application layer
11. **Which of the following tasks is not done by data link layer?**a) framing  
    b) error control  
    c) flow control  
    **d) channel coding**
12. **Which sublayer of the data link layer performs data link functions that depend upon the type of medium?**a) logical link control sublayer  
    **b) media access control sublayer**c) network interface control sublayer  
    d) error control sublayer
13. **Header of a frame generally contains \_\_\_\_\_\_\_\_\_\_\_\_\_\_**a) synchronization bytes  
    b) addresses  
    c) frame identifier  
    **d) all of the mentioned**
14. **Automatic repeat request error management mechanism is provided by \_\_\_\_\_\_\_\_  
    a) logical link control sublayer**b) media access control sublayer  
    c) network interface control sublayer  
    d) application access control sublayer
15. **When 2 or more bits in a data unit has been changed during the transmission, the error is called \_\_\_\_\_\_\_\_\_\_\_\_**  
    a) random error  
    **b) burst error**c) inverted error  
    d) double error
16. **Which of the following is a data link protocol?**  
    a) ethernet  
    b) point to point protocol  
    c) hdlc  
    **d) all of the mentioned**
17. **Which of the following is the multiple access protocol for channel access control?**a) CSMA/CD  
    b) CSMA/CA  
    **c) Both CSMA/CD & CSMA/CA**d) HDLC
18. **The technique of temporarily delaying outgoing acknowledgements so that they can be hooked onto the next outgoing data frame is called \_\_\_\_\_\_\_\_\_\_\_\_  
    a) piggybacking**b) cyclic redundancy check  
    c) fletcher’s checksum  
    d) parity check
19. **The network layer is concerned with \_\_\_\_\_\_\_\_\_\_ of data.**a) bits  
    **b) frames**c) packets  
    d) bytes
20. **Which one of the following is not a function of network layer?**a) routing  
    b) inter-networking  
    c) congestion control  
    **d) error control**
21. **A 4 byte IP address consists of \_\_\_\_\_\_\_\_\_\_**  
    a) only network address  
    b) only host address  
    **c) network address & host address**d) network address & MAC address
22. **In virtual circuit network each packet contains \_\_\_\_\_\_\_\_\_\_\_**  
    a) full source and destination address  
    **b) a short VC number**c) only source address  
    d) only destination address
23. **Which of the following routing algorithms can be used for network layer design?**a) shortest path algorithm  
    b) distance vector routing  
    c) link state routing  
    **d) all of the mentioned**
24. **Which of the following is not correct in relation to multi-destination routing?**a) is same as broadcast routing  
    b) contains the list of all destinations  
    **c) data is not sent by packets**d) there are multiple receivers
25. **A subset of a network that includes all the routers but contains no loops is called \_\_\_\_\_\_\_\_**  
    **a) spanning tree**b) spider structure  
    c) spider tree  
    d) special tree
26. **Which one of the following algorithm is not used for congestion control?**a) traffic aware routing  
    b) admission control  
    c) load shedding  
    **d) routing information protocol**
27. **The network layer protocol for internet is \_\_\_\_\_\_\_\_\_\_**a) ethernet  
    **b) internet protocol**  
    c) hypertext transfer protocol  
    d) file transfer protocol
28. **ICMP is primarily used for \_\_\_\_\_\_\_\_\_\_**  
    **a) error and diagnostic functions**b) addressing  
    c) forwarding  
    d) routing
29. **Transport layer aggregates data from different applications into a single stream before passing it to \_\_\_\_\_\_\_\_\_\_\_\_  
    a) network layer**b) data link layer  
    c) application layer  
    d) physical layer
30. **User datagram protocol is called connectionless because \_\_\_\_\_\_\_\_\_\_\_\_\_  
    a) all UDP packets are treated independently by transport layer**b) it sends data as a stream of related packets  
    c) it is received in the same order as sent order  
    d) it sends data very quickly
31. **Transmission control protocol \_\_\_\_\_\_\_\_\_\_\_**  
    a) is a connection-oriented protocol  
    b) uses a three way handshake to establish a connection  
    c) receives data from application as a single stream  
    **d) all of the mentioned**
32. **An endpoint of an inter-process communication flow across a computer network is called \_\_\_\_\_\_\_\_\_\_  
    a) socket**b) pipe  
    c) port  
    d) machine
33. **Socket-style API for windows is called \_\_\_\_\_\_\_\_\_\_\_\_**  
    a) wsock  
    **b) winsock**c) wins  
    d) sockwi
34. **Which one of the following is a version of UDP with congestion control?  
    a) datagram congestion control protocol**b) stream control transmission protocol  
    c) structured stream transport  
    d) user congestion control protocol
35. **A \_\_\_\_\_ is a TCP name for a transport service access point.  
    a) port**b) pipe  
    c) node  
    d) protocol
36. **Transport layer protocols deals with \_\_\_\_\_\_\_\_\_\_\_\_**  
    a) application to application communication  
    **b) process to process communication**c) node to node communication  
    d) man to man communication
37. **Which of the following is a transport layer protocol?  
    a) stream control transmission protocol**b) internet control message protocol  
    c) neighbor discovery protocol  
    d) dynamic host configuration protocol
38. **Which network topology requires a central controller or hub?  
    a) Star**b) Mesh  
    c) Ring  
    d) Bus
39. **\_\_\_\_\_\_\_ topology requires a multipoint connection.**a) Star  
    b) Mesh  
    c) Ring  
    **d) Bus**
40. **Data communication system spanning states, countries, or the whole world is \_\_\_\_\_\_\_\_**  
    a) LAN  
    **b) WAN**c) MAN  
    d) PAN
41. **Data communication system within a building or campus is\_\_\_\_\_\_\_\_  
    a) LAN**b) WAN  
    c) MAN  
    d) PAN
42. **In TDM, slots are further divided into \_\_\_\_\_\_\_\_\_\_**  
    a) Seconds  
    **b) Frames**  
    c) Packets  
    d) Bits
43. **\_\_\_\_\_ is the multiplexing technique that shifts each signal to a different carrier frequency.  
    a) FDM**b) TDM  
    c) Both FDM & TDM  
    d) PDM
44. **Multiplexing is used in \_\_\_\_\_\_\_  
    a) Packet switching**b) Circuit switching  
    c) Data switching  
    d) Packet & Circuit switching
45. **Which multiplexing technique used to transmit digital signals?**a) FDM  
    **b) TDM**c) WDM  
    d) FDM & WDM
46. **\_\_\_\_\_\_\_\_\_\_\_\_\_ allows LAN users to share computer programs and data.**a) Communication server  
    **b) Print server**c) File server  
    d) Network
47. **A standalone program that has been modified to work on a LAN by including concurrency controls such as file and record locking is an example of \_\_\_\_\_\_\_\_\_\_\_  
    a) LAN intrinsic software**b) LAN aware software  
    c) Groupware  
    d) LAN ignorant software
48. **The \_\_\_\_\_\_\_\_\_\_ portion of LAN management software restricts access, records user activities and audit data, etc.**a) Configuration management  
    **b) Security management**  
    c) Performance management  
    d) Recovery management
49. **What is the max length of the Shielded twisted pair cable?**a) 100 ft  
    b) 200 ft  
    **c) 100 m**d) 200 m
50. **What is the max data transfer rate for optical fiber cable?**a) 10 Mbps  
    b) 100 Mbps  
    c) 1000 Mbps  
    **d) 10000 Mbps**
51. **Which of the following architecture uses the CSMA/CD access method?**a) ARC net  
    **b) Ethernet**c) Router  
    d) STP server
52. **Which of the following is false with respect to TCP?**a) Connection-oriented  
    b) Process-to-process  
    c) Transport layer protocol  
    **d) Unreliable**
53. **In TCP, sending and receiving data is done as \_\_\_\_\_\_\_  
    a) Stream of bytes**b) Sequence of characters  
    c) Lines of data  
    d) Packets
54. **TCP process may not write and read data at the same speed.** So we need \_\_\_\_\_\_\_\_\_\_ for **storage**.  
    a) Packets  
    **b) Buffers**c) Segments  
    d) Stacks
55. **TCP groups a number of bytes together into a packet called \_\_\_\_\_\_\_**a) Packet  
    b) Buffer  
    **c) Segment**d) Stack
56. **Communication offered by TCP is \_\_\_\_\_\_\_\_  
    a) Full-duplex**b) Half-duplex  
    c) Semi-duplex  
    d) Byte by byte
57. **To achieve reliable transport in TCP, \_\_\_\_\_\_\_\_\_\_\_ is used to check the safe and sound arrival of data.**a) Packet  
    b) Buffer  
    c) Segment  
    **d) Acknowledgment**
58. **In segment header, sequence number and acknowledgement number fields refer to \_\_\_\_\_\_\_  
    a) Byte number**  
    b) Buffer number  
    c) Segment number  
    d) Acknowledgment
59. **Suppose a TCP connection is transferring a file of 1000 bytes.** The first byte is numbered 10001. **What is the sequence number of the segment if all data is sent in only one segment?**a) 10000  
    **b) 10001**c) 12001  
    d) 11001
60. **Bytes of data being transferred in each connection are numbered by TCP.** **These numbers start with a \_\_\_\_\_\_\_\_\_**a) Fixed number  
    b) Random sequence of 0’s and 1’s  
    c) One  
    **d) Sequence of zero’s and one’s**
61. **The value of acknowledgement field in a segment defines \_\_\_\_\_\_\_**a) sequence number of the byte received previously  
    b) total number of bytes to receive  
    **c) sequence number of the next byte to be received**d) sequence of zeros and ones
62. **Which of the following is false with respect to UDP?  
    a) Connection-oriented**b) Unreliable  
    c) Transport layer protocol  
    d) Low overhead
63. **Return value of the UDP port “Chargen” is \_\_\_\_\_\_\_  
    a) String of characters**  
    b) String of integers  
    c) Array of characters with integers  
    d) Array of zero’s and one’s
64. **Beyond IP, UDP provides additional services such as \_\_\_\_\_\_\_**  
    a) Routing and switching  
    b) Sending and receiving of packets  
    c) Multiplexing and demultiplexing  
    **d) Demultiplexing and error checking**
65. **What is the main advantage of UDP?**a) More overload  
    b) Reliable  
    **c) Low overhead**d) Fast
66. **Port number used by Network Time Protocol (NTP) with UDP is \_\_\_\_\_\_\_\_**a) 161  
    **b) 123**  
    c) 162  
    d) 124
67. **What is the header size of a UDP packet?  
    a) 8 bytes**  
    b) 8 bits  
    c) 16 bytes  
    d) 124 bytes
68. T**he port number is “ephemeral port number”, if the source host is \_\_\_\_\_\_\_**  
    a) NTP  
    b) Echo  
    c) Server  
    **d) Client**
69. **“Total length” field in UDP packet header is the length of \_\_\_\_\_\_\_\_\_**  
    a) Only UDP header  
    b) Only data  
    c) Only checksum  
    **d) UDP header plus data**
70. **Which is the correct expression for the length of UDP datagram?  
    a) UDP length = IP length – IP header’s length**b) UDP length = UDP length – UDP header’s length  
    c) UDP length = IP length + IP header’s length  
    d) UDP length = UDP length + UDP header’s length
71. **The \_\_\_\_\_\_ field is used to detect errors over the entire user datagram.**a) udp header  
    **b) checksum**c) source port  
    d) destination port
72. **Which methods are commonly used in Server Socket class?**a) Public Output Stream get Output Stream ()  
    **b) Public Socket accept ()**  
    c) Public synchronized void close ()  
    d) Public void connect ()
73. **Which constructor of Datagram Socket class is used to create a datagram socket and binds it with the given Port Number?**a) Datagram Socket(int port)  
    **b) Datagram Socket(int port, Int Address address)**c) Datagram Socket()  
    d) Datagram Socket(int address)
74. **The client in socket programming must know which information?**a) IP address of Server  
    b) Port number  
    **c) Both IP address of Server & Port number**  
    d) Only its own IP address
75. **The URL Connection class can be used to read and write data to the specified resource that is referred by the URL.**  
    **a) True**  
    b) False
76. **Datagram is basically just a piece of information but there is no guarantee of its content, arrival or arrival time.  
    a) True**  
    b) False
77. **TCP, FTP, Telnet, SMTP, POP etc.** are examples of \_\_\_\_\_\_\_\_\_\_\_  
    a) Socket  
    b) IP Address  
    **c) Protocol**d) MAC Address
78. **What does the java.net.InetAddress class represent?**a) Socket  
    **b) IP Address**c) Protocol  
    d) MAC Address
79. **The flush () method of Print Stream class flushes any un-cleared buffers in the memory.  
    a) True**  
    b) False
80. **Which classes are used for connection-less socket programming?**a) Datagram Socket  
    b) Datagram Packet  
    **c) Both Datagram Socket & Datagram Packet**d) Server Socket
81. **In Inet Address class, which method returns the host name of the IP Address?  
    a) Public String get Hostname()**b) Public String getHostAddress()  
    c) Public static InetAddress get Localhost()  
    d) Public getByName()
82. **What is the access point (AP) in a wireless LAN?  
    a) device that allows wireless devices to connect to a wired network**  
    b) wireless devices itself  
    c) both device that allows wireless devices to connect to a wired network and wireless devices itself  
    d) all the nodes in the network
83. **In wireless ad-hoc network \_\_\_\_\_\_\_\_\_  
    a) access point is not required**b) access point is must  
    c) nodes are not required  
    d) all nodes are access points
84. **Which multiple access technique is used by IEEE 802.11 standard for wireless LAN?**a) CDMA  
    **b) CSMA/CA**  
    c) ALOHA  
    d) CSMA/CD
85. **In wireless distribution system \_\_\_\_\_\_\_\_\_\_  
    a) multiple access point are inter-connected with each other**b) there is no access point  
    c) only one access point exists  
    d) access points are not required
86. **A wireless network interface controller can work in \_\_\_\_\_\_\_  
    a) infrastructure mode**b) ad-hoc mode  
    **c) both infrastructure mode and ad-hoc mode**  
    d) WDS mode
87. **In wireless network an extended service set is a set of \_\_\_\_\_\_\_\_  
    a) connected basic service sets**  
    b) all stations  
    c) all access points  
    d) connected access points
88. **Mostly \_\_\_\_\_\_\_\_ is used in wireless LAN.**  
    a) time division multiplexing  
    **b) orthogonal frequency division multiplexing**c) space division multiplexing  
    d) channel division multiplexing
89. **Which one of the following event is not possible in wireless LAN?  
    a) collision detection**  
    b) acknowledgement of data frames  
    c) multi-mode data transmission  
    d) connection to wired networks
90. **What is Wired Equivalent Privacy (WEP)?**a) security algorithm for ethernet  
    **b) security algorithm for wireless networks**c) security algorithm for usb communication  
    d) security algorithm for emails
91. **What is WPA?  
    a) wi-fi protected access**b) wired protected access  
    c) wired process access  
    d) wi-fi process access
92. **What is internet?**a) a single network **b) a vast collection of different networks**c) interconnection of local area networks  
    d) interconnection of wide area networks
93. **Internet access by transmitting digital data over the wires of a local telephone network is provided by \_\_\_\_\_\_\_**a) leased line  
    **b) digital subscriber line**c) digital signal line  
    d) digital leased line
94. **ISP exchanges internet traffic between their networks by \_\_\_\_\_\_\_\_\_\_  
    a) internet exchange point**  
    b) subscriber end point  
    c) isp end point  
    d) internet end point
95. **Which of the following protocols is used in the internet?**a) HTTP  
    b) DHCP  
    c) DNS  
    **d) DNS, HTTP and DNS**
96. **Internet works on \_\_\_\_\_\_\_  
    a) packet switching**b) circuit switching  
    c) both packet switching and circuit switching  
    d) data switching
97. **Which one of the following is not an application layer protocol used in internet?**a) remote procedure call  
    b) internet relay chat  
    **c) resource reservation protocol**d) local procedure call
98. **Which protocol assigns IP address to the client connected in the internet?  
    a) DHCP**b) IP  
    c) RPC  
    d) RSVP
99. **Which one of the following is not used in media access control?**a) ethernet  
    b) digital subscriber line  
    c) fiber distributed data interface  
    **d) packet switching**
100. **An interconnected collection of piconet is called \_\_\_\_\_\_\_\_\_\_\_  
     a) scatternet**b) micronet  
     c) mininet  
     d) multinet
101. **In a piconet, there can be up to \_\_\_\_\_\_\_\_ parked nodes in the network.**a) 63  
     b) 127  
     **c) 255**d) 511
102. **Bluetooth uses \_\_\_\_\_\_\_\_\_\_  
     a) frequency hopping spread spectrum**  
     b) orthogonal frequency division multiplexing  
     c) time division multiplexing  
     d) channel division multiplexing
103. **Unauthorised access of information from a wireless device through a bluetooth connection is called \_\_\_\_\_\_\_\_\_**a) bluemaking  
     **b) bluesnarfing**c) bluestring  
     d) bluescoping
104. **What is A2DP (advanced audio distribution profile)?  
     a) a bluetooth profile for streaming audio**  
     b) a bluetooth profile for streaming video  
     c) a bluetooth profile for security  
     d) a bluetooth profile for file management
105. **In a piconet, one master device \_\_\_\_\_\_\_\_**  
     a) can not be slave  
     **b) can be slave in another piconet**c) can be slave in the same piconet  
     d) can be master in another piconet
106. **Bluetooth transceiver devices operate in \_\_\_\_\_\_ band.  
     a) 2.4 GHz ISM**b) 2.5 GHz ISM  
     c) 2.6 GHz ISM  
     d) 2.7 GHz ISM
107. **Bluetooth supports \_\_\_\_\_\_\_**a) point-to-point connections  
     b) point-to-multipoint connection  
     **c) both point-to-point connections and point-to-multipoint connection**d) multipoint to point connection
108. **A scatternet can have maximum \_\_\_\_\_\_\_\_\_\_  
     a) 10 piconets**  
     b) 20 piconets  
     c) 30 piconets  
     d) 40 piconets