

IOT MCQ

1. **What are the functions of the transport layer?**
 - a) Multiplexing/ Demultiplexing**
 - b) Connection less Services
 - c) Connection oriented service
 - d) Congestion control

2. **Which services are provided by transport layer?**
 - a) Error control**
 - b) Connection service
 - c) Connection less service
 - d) Congestion control

3. **TCP and UDP are called _____**
 - a) Application protocols
 - b) Session protocols
 - c) Transport protocols**
 - d) Network protocols

4. **Security based connection is provided by which layer?**
 - a) Network layer
 - b) Session layer
 - c) Application layer
 - d) Transport layer**

5. **TCP is the standard protocol with std no?**
 - a) 5
 - b) 4
 - c) 7**
 - d) 3

6. **Using which method in transport layer data integrity can be ensured?**
 - a) Checksum**
 - b) Repetition codes
 - c) Cyclic redundancy checks
 - d) Error correcting codes

7. **Buffer overrun can be reduced by using what?**
 - a) Traffic control
 - b) Flow control**
 - c) Byte orientation
 - d) Data integrity

8. Transport layer can identify the symptoms of overload nodes using _____
- a) Flow control
 - b) Traffic control**
 - c) Byte orientation
 - d) Data integrity
9. Transport layer receives data in the form of _____
- a) Packets
 - b) Byte streams**
 - c) Bits stream
 - d) Both packets and Byte stream
10. Transport layer is which layer in OSI model?
- a) Fourth layer**
 - b) Third layer
 - c) Second layer
 - d) Fifth layer
11. Congestion control can control traffic entry into a telecommunications network, so to avoid _____
- a) Congestive connection
 - b) Connection collapse
 - c) Congestive collapse**
 - d) Collapse congestive
12. FCP stands for _____
- a) Fiber Channel Protocol**
 - b) Field Channel Protocol
 - c) Fast Channel Protocol
 - d) Fiber Carrying Protocol
13. UDP packets are called as _____
- a) Segments
 - b) Checksum
 - c) Frames
 - d) Datagrams**
14. _____ does not provide reliable end to end communication.
- a) TCP
 - b) UDP**
 - c) Both TCP and UDP
 - d) Neither TCP nor UDP

15. ARQ stands for _____

- a) **Automatic Repeat Request**
- b) Automatic Request Repeat
- c) Application Repeat Request
- d) Application Request Repeat

16. Which level is the network layer in the OSI model?

- a) **Third level**
- b) Fourth level
- c) Second level
- d) Fifth layer

17. Data in network layer is transferred in the form of _____

- a) Layers
- b) **Packets**
- c) Bytes
- d) Bits

18. The network layer is considered as the _____ of the network layer.

- a) **backbone**
- b) packets
- c) bytes
- d) bits

19. The network layer contains which hardware device?

- a) Routers, Bridges
- b) Bridges only
- c) Bridges and switches
- d) **Routers, Bridges and Switches**

20. Network layer protocol exists in _____

- a) **Host**
- b) Switches
- c) Packets
- d) Bridges

21. What are the common protocols associated with the network layer?

- a) Address Resolution Protocol
- b) Reverse Address Resolution Protocol
- c) **Internet protocol**
- d) Neighbour Discovery Protocol

22. The network layer responds to request from which layer?

- a) Transport layer**
- b) Data layer
- c) Application layer
- d) Session layer

23. The network layer issues request to which layer?

- a) Transport layer
- b) Data layer**
- c) Application layer
- d) Session layer

24. IP is connectionless.

- a) True**
- b) False

25. Does network layer in TCP/IP and OSI Model are same.

- a) True
- b) False**

26. What are called routers?

- a) The devices that operates at session layer
- b) The devices that operates at data layer
- c) The devices that operates at application layer
- d) The devices that operates at network**

27. ICMP stands for _____

- a) Internet Coordinate Message Protocol
- b) Internet Control Message Protocol**
- c) Interconnect Control Message Protocol
- d) Interconnect Coordinate Message Protocol

28. Packets will be transferred in how many types?

- a) 5 types
- b) 4 types
- c) 2 types
- d) 3 types**

29. DDP stands for _____

- a) Datagram Delivery Protocol**
- b) Device Delivery Protocol
- c) Datagram Device Protocol
- d) Device Datagram Protocol

30. RIP stands for _____

- a) Reduced Information Protocol
- b) Routing Internet Protocol
- c) Routing Information Protocol**
- d) Reduced Internet Protocol

31. AMQP stands for _____

- a) Advanced Message Queuing Protocol**
- b) Application Message Queuing Protocol
- c) Advanced Mailing Queuing Protocol
- d) Application Mailing Queuing Protocol

32. The best example for interoperability at the application layer is?

- a) Data
- b) Net
- c) File
- d) Web**

33. Services provided by application layer?

- a) Web chat**
- b) Error control
- c) Connection services
- d) Congestion control

34. How many protocols are used in the application layer?

- a) 15
- b) 10
- c) More than 15**
- d) More than 10

35. What is the main responsibility of application layer?

- a) Error handling**
- b) Web surfing
- c) Virtual terminal
- d) Network data sharing

36. Reoccurring problems can be achieved using _____

- a) DNS
- b) Telnet
- c) BOOTP
- d) Patterns**

37. Application layer is the ending of the data layer.

- a) True**
- b) False

38. Application layer interacts directly with the _____

- a) front user
- b) end user**
- c) sensors
- d) wired link

39. What is the format of IP address?

- a) 34 bit
- b) 64 bit
- c) 16 bit
- d) 32 bit**

40. Version 6 of IP address has how many bits.

- a) 64 bits
- b) 128 bits**
- c) 32 bits
- d) 256 bits

41. IANA stands for _____

- a) Internet Assigned Numbers Authority**
- b) Internal Assigned Numbers Authority
- c) Internet Associative Numbers Authoritative
- d) Internal Associative Numbers Authority

42. RIR stands for _____

- a) Regional Internal Registries
- b) Registries Internet Regional
- c) Regional Internet Registries**
- d) Registries Internal Regional

43. Geolocation software is used by host.

- a) True**
- b) False

44. How many version /s of IP's are there?

- a) 4 versions
- b) 3 versions
- c) 2 versions**
- d) 1 version

45. VLSM stands for _____

- a) Version Length Subnet Masking
- b) Variable Length Subnet Masking**
- c) Variable Length Surface Masking
- d) Version Length Surface Masking

46. Many desktops and operating systems include which protocol?

- a) IPv6 protocol**
- b) IPv4 protocol
- c) Both IPv6 and IPv4 protocol
- d) IPv3 protocol

47. The design of the Internet protocol suites adhere to the _____ principle.

- a) Data corruption
- b) Connection oriented
- c) End to End principle**
- d) Reliability

48. _____ adjusts the segment size to be smaller than MTU.

- a) Internet Protocol 6
- b) User Datagram Protocol
- c) Internet Protocol 4
- d) Transmission Control Protocol**

49. Hardware address is known as _____

- a) MAC address**
- b) IP Address
- c) Network Interface Card
- d) Address Resolution Protocol

50. MAC stands for _____

- a) Media Area Control
- b) Memory Access Control
- c) Memory Area Control
- d) Media Access Control**

51. What translates IP address into MAC address?

- a) Organizationally Unique Identifier
- b) Address Resolution Protocol**
- c) Network Interface Card
- d) Burned In Address

52. Networking Hardware Address is referred with _____

- a) IP address
- b) MAC address**
- c) NIC
- d) Organizationally Unique Identifier

53. Does MAC address contain characters.

- a) True**
- b) False

54. MAC addresses are very useful in diagnosing network issues.

- a) True**
- b) False

55. On wireless networks _____ filtering is the security measure.

- a) OUI
- b) IP
- c) NIC
- d) MAC**

56. MAC addresses are used as _____

- a) Network addresses**
- b) IP address
- c) Hardware address
- d) Burned in address

57. IEEE standards for Institute of Electrical and Electronics Engineers.

- a) False
- b) True**

58. The original IEEE 802 MAC address comes from _____

- a) MAC address
- b) IP address
- c) Ethernet address**
- d) Http

59. CoAP is specialized in _____

- a) Internet applications**
- b) Device applications
- c) Wireless applications
- d) Wired applications

60. CoAP is designed for use between devices on the same constrained network.

- a) True**
- b) False

61. Which layer is CoAP?

- a) Control layer
- b) Transport layer
- c) Service layer**
- d) Application layer

62. CoAP provides which of the following requirements?

- a) Multicast support and simplicity
- b) Low overhead and multicast support
- c) Simplicity and low overhead
- d) Multicast support, Low over head, and simplicity**

63. The core of the protocol is specified in _____

- a) RFC 7254
- b) RFC 7252**
- c) RFC 7452
- d) RFC 7524

64. Do CoAP has memory?

- a) True**
- b) False

65. CoAP does not provide any security.

- a) True
- b) False**

66. What is the RAM and ROM size in CoAP?

- a) 100 KiB of RAM and 10 KiB of ROM
- b) 10 KiB of RAM and 100 KiB of ROM**
- c) 10 KiB of RAM and 250 KiB of ROM
- d) 250 KiB of RAM and 10 KiB of ROM

67. CoAP feels very much like HTTP.

- a) True**
- b) False

68. Which is an open standard?

- a) HTTP
- b) MQTT**
- c) XMPP
- d) CoAP**

69. Will CoAP connects to the internet.

- a) True**
- b) False

70. HART stands for _____

- a) Highway Addressable Remote Transducer**
- b) High Addressable Remote Transducer
- c) High Application Remote Transducer
- d) Highway Application Remote Transducer

71. LTP stands for _____

- a) Lean Transducer Protocol
- b) Lean Transport Protocol**
- c) Layer Transport Protocol
- d) Layer Transducer Protocol

72. CoAP is a specialized _____ protocol.

- a) Web Transfer**
- b) Power
- c) Application
- d) Resource

73. URI and content type support is which protocol feature?

- a) Http
- b) UDP
- c) CoAP**
- d) SPI

74. MQTT is mainly used for _____

- a) M2M communication**
- b) Device communication
- c) Internet communication
- d) Wireless communication

75. MQTT is _____ oriented.

- a) Data
- b) Message**
- c) Network
- d) Device

76. Who created MQTT?

- a) Robert Cailliau
- b) Tim Berners-Lee
- c) Andy Stanford-Clark**
- d) Vint Cerf

77. Does MQTT support security.

- a) True**
- b) False

78. Standard ports of MQTT are _____

- a) I2C
- b) SSL
- c) USART
- d) TCP/IP**

79. Full form of MQTT _____

- a) Message Queuing Telemetry Transport**
- b) Message Queuing Telegram Transport
- c) Message Queue Telegram Transport
- d) Message Queue Telemetry Transport

80. What are the key components of a M2M system?

- a) Vortex DDS
- b) Smart Homes
- c) Sensors and Wi-Fi**
- d) Protocols

81. Request field is present in which message format?

- a) Request message**
- b) Response message
- c) Both request and response
- d) Neither request nor response

82. Does HTTP protocol take more power.

- a) True**
- b) False

83. How many messages will HQTTP will send in 1024?

- a) All
- b) 256
- c) 240**
- d) 514

84. How many messages will HTTP will send per hour?

- a) 1,708**
- b) 160,278
- c) 3,628
- d) 263,314

85. What does HTTP do?

- a) Enables network resources and reduces perception of latency
- b) Reduces perception of latency and allows multiple concurrency exchange
- c) Allows multiple concurrent exchange and enables network resources
- d) Enables network resources and reduces perception of latency and Allows multiple concurrent exchange**

86. A request from client is basically made of _____

- a) Method**
- b) Task
- c) Event
- d) Signal

87. Response is made up of a _____ status code.

- a) two-digit
- b) three-digit**
- c) five-digit
- d) six-digit

88. HTTP allows which response?

- a) Multiplexing**
- b) Serial
- c) Coherent
- d) Binary

89. Which protocol provides server push?

- a) SPI
- b) MQTT
- c) CoAP
- d) HTTP**

90. WOT reduces _____ of HTTP.

- a) Overrun
- b) Overhead**
- c) Overload
- d) Load

91. HTTP expands?

- a) HyperText Transfer Protocol**
- b) HyperTerminal Transfer Protocol
- c) HyperText Terminal Protocol
- d) HyperTerminal Text Protocol

92. How many types of message formats are there in HTTP protocol?

- a) 4 types
- b) 3 types
- c) 2 types**
- d) 5 types

93. Statue line is present in which message format?

- a) Request message
- b) Response message**
- c) Both request and response
- d) Neither request nor response

94. Does HTTP protocol have _____ handshakes.

- a) 2 way
- b) 1 way
- c) 3 way**
- d) 5 way

95. Does HTTP has pipelining.

- a) True**
- b) False

96. XMPP Full form is _____

- a) Extensible Messaging and Presence Protocol**
- b) Extensible Module and presence protocol
- c) Extensible Messaging and Presence Protocol**
- d) Extensible Messaging and Presence Protocol**

97. XMPP is used for streaming which type of elements?

- a) XPL
- b) XML**
- c) XHL
- d) MPL

98. XMPP creates _____ identity.

- a) device**
- b) email
- c) message
- d) data

99. XMPP supports _____

- a) Structured data
- b) Foundation
- c) Federation**
- d) Jabber ID

100. Which protocol has a quality of service?

- a) XMPP**
- b) HTTP
- c) CoAP
- d) MQTT

101. The original transport protocol for XMPP.

- a) FCP
- b) TCP**
- c) MCP
- d) HCP

102. Which XMPP core describes client server messaging?

- a) RFC 6122
- b) RFC 4854
- c) RFC 6120**
- d) RFC 3923

103. XMPP uses _____ architecture.

- a) Decentralized client-server**
- b) Centralized client-server
- c) Message
- d) Public/subscriber

- 104. XMPP implementation uses _____**
- a) CoAP
 - b) Gaming
 - c) Email
 - d) Polling**
- 105. XMPP feature such as federation across domains used to implement the Internet of Things.**
- a) True**
 - b) False
- 106. The architecture of the XMPP network is similar to _____**
- a) Chat box
 - b) Web browser
 - c) Gaming
 - d) Email**
- 107. Does XMPP have text based communication.**
- a) True
 - b) False**
- 108. In XMPP In band binary data format is _____**
- a) High
 - b) Very high
 - c) Limited**
 - d) Ultra high
- 109. IRC stands for _____**
- a) Internet Reduce Chat
 - b) Interconnection Relay Chat
 - c) Internet Relay Chat**
 - d) Interconnect Reduce Chat
- 110. SIP stands for _____**
- a) Session Initiation Protocol**
 - b) Session Internet Protocol
 - c) Simple Initiation Protocol
 - d) Session Internet Protocol
- 111. Gateway provides the connection between _____ and _____**
- a) Cloud and controller**
 - b) Network and Cloud
 - c) Network and Controller
 - d) Controller and device

- 112. Sensors provide _____ data per second.**
- a) Hundreds of Hundreds of data
 - b) Hundreds of thousands of data
 - c) Tens of Hundreds of data
 - d) Tens of thousands of data**
- 113. Does IOT gateway provide security for the network.**
- a) True**
 - b) False
- 114. A sensor uses which network?**
- a) LAN and HAN
 - b) HAN and PAN
 - c) LAN and PAN
 - d) LAN, PAN and HAN**
- 115. Gateway software should be smart enough to handle _____**
- a) GPS
 - b) Message
 - c) Logging**
 - d) Sensors
- 116. Number of approaches gateway can be installed?**
- a) 2 approaches
 - b) 3 approaches (Factory Bootstrap, Server limited Bootstrap, Client Initiated Bootstrap)**
 - c) 2 approaches
 - d) 2 approaches
- 117. Drawback of Factory Bootstrap?**
- a) It should not have many gateways**
 - b) It should not have many devices
 - c) Complex circuit can't be handled
 - d) It should have many gateways
- 118. Central software management server communicates with the gateway devices in which approach?**
- a) Factory Bootstrap
 - b) Server limited Bootstrap**
 - c) Client Initiated Bootstrap
 - d) Bootstrap

119. _____ allows us to control electronic components.
a) **RESTful API**
b) CoAP API
c) HTTP
d) MQTT
120. **MQTT is better than HTTP for sending and receiving data.**
a) **True**
b) False
121. **MQTT is _____ protocol.**
a) Machine to Machine
b) Internet of Things
c) **Machine to Machine and Internet of Things**
d) Machine Things
122. **Which protocol is lightweight?**
a) **MQTT**
b) HTTP
c) CoAP
d) SPI
123. **PubNub publishes and subscribes _____ in order to send and receive messages.**
a) Network
b) Account
c) Portal
d) **Keys**
124. **By clicking which key the PubNub will display public, subscribe, and secret keys.**
a) Pane
b) **Demo Keyset**
c) Portal
d) Network
125. **The messageChannel class declares the _____ class attribute that defines the key string.**
a) **command_key**
b) command-key
c) commandkey
d) Key_command

126. _____ method saves the received arguments in three attributes.
- a) __Init
 - b) Init__
 - c) __Init__**
 - d) _init_
127. _____ and _____ saves the publish and subscribe keys that we have generated with the PubNub Admin portal.
- a) public_key and subscribe_key**
 - b) Public-key and subscribe-key
 - c) publickey and subscribekey
 - d) Key_public and key_subscribe
128. _____ specifies the function that will be called when there is a new message received from the channel.
- a) Reconnect
 - b) Error
 - c) Connect
 - d) Callback**
129. _____ specifies the function that will be called on an error event.
- a) Callback
 - b) Error**
 - c) Connect
 - d) Reconnect
130. _____ Specifies the function that will be called when a successful connection with the PubNub cloud.
- a) Callback
 - b) Error
 - c) Connect**
 - d) Reconnect
131. _____ specifies the function that will be called when a successful re-connection is completed.
- a) Callback
 - b) Error
 - c) Connect
 - d) Reconnect**

132. _____ specifies the function that will be called when the client disconnects.
- a) Callback
 - b) Error
 - c) Connect
 - d) Disconnect**
133. How many numbers of the element in the open IoT architecture?
- a) Four elements
 - b) Five elements
 - c) Six elements
 - d) Seven elements**
134. Which of the following is the way in which an IoT device is associated with data?
- a) Internet
 - b) Cloud**
 - c) Automata
 - d) Network
135. Which of the following IoT networks has a very short range?
- a) Short Network
 - b) LPWAN
 - c) SigFox
 - d) Short-range Wireless Network**
136. What is the full form of the LPWAN?
- a) Low Protocol Wide Area Network
 - b) Low Power Wide Area Network**
 - c) Long Protocol Wide Area Network
 - d) Long Power Wide Area Network
137. An IoT network is a collection of _____ devices.
- a) Signal
 - b) Machine to Machine
 - c) Interconnected**
 - d) Network to Network
138. Which one of the following is not an IoT device?
- a) Amazon echo voice controller
 - b) Google Home
 - c) Nest Smoke Alarm
 - d) None of these**

139. What is the main purpose of WoT (Web of Things) in the IoT?

- a) Improve the usability and interoperability**
- b) Reduce the security
- c) Complex the development
- d) Increase the cost

140. _____ allows the user to control electronic components.

- a) Android API
- b) RETful API**
- c) MQTT API
- d) CoAP API

141. What is the role of Big Data in IoT's Smart Grid architecture?

- a) Filter the data
- b) Locked the data
- c) Store data**
- d) None of the these

142. What is the real example of a smart grid device in IoT?

- a) Mobile phone
- b) Television
- c) Smart Speaker
- d) Smart Meters**

143. What is the full form of ICT?

- a) InterConnect Technology
- b) Internet Connection Topology
- c) Information and Communication Technology**
- d) Infer Communication Topology

144. What is the full form of IANA?

- a) Inter-Assessment-Number-Access
- b) Internet-Association-Numbers-Authority
- c) International-Aid-for-Network-Authority
- d) Internet-Assigned-Numbers-Authority**

145. What is the standard port number of secure MQTT?

- a) 1883
- b) 8000
- c) 8883**
- d) 8888

146. Which of the following layers provides end-to-end communication in IoT?

- a) Logical layer
- b) Data link layer
- c) Transport layer**
- d) Session layer

147. Which of the following devices is used to measure the gases or liquid?

- a) Optical Sensor
- b) Gas Sensor
- c) Smoke Sensor
- d) Pressure sensor**

148.

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) transport 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. The 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) bluemarking
 - 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