1. ISO stands for
    a. **International Organization for Standardization**
    b. Internet Organization for Standardization
    c. International Organization Standardization
    d. International for Organization Standardization
2. The main principle of layered architecture is
    a. **Separation of responsibility**
    b. Addition of responsibility
    c. Subtraction of responsibility
    d. None of these
3. Which type of network operating system in Novell Netware
    a. Client
    b. Server
    c. **Both a & b**
    d. None of these
4. How many layers a Novell Netware protocol stack uses
    a. 3
    b. 4
    c. **5**
    d. 6
5. TCP/IP model is the _____ , which is used in the OSI model
    a. **Oldest protocol**
    b. Not so old protocol
    c. Newly established protocol
    d. None of these
6. In layered architecture, each layer is responsible for a _____ amount of work
    a. Infinite
    b. **Finite**
    c. Large

d. None of these

7. Layering the communications process means breaking down the communication process into_____ and _____ to handle interdependent categories

a. Smaller

b. Easier

c. **Both a & b**

d. None of these

8. The convention and rules used in such communications are collectively known as

a. Peer

b. **Layer protocol**

c. Network

d. None of these

9. The entities comprising the corresponding layers on different computers are called _____ which communicate by using layer protocol

a. **Peer**

b. Layer protocol

c. Network

d. None of these

e.

10.OSI has two meanings refers to

a. OSI basic reference model

b. Protocol that are authorized by ISO

c. **Both a & b**

d. None of these

11. Network is the term used for a group of

a. protocols

b. layers

c. **Both a & b**

d. None of these

12.The groups of layers provides information to allows _____, which correctly obeys the appropriate protocol

a. Hardware implementation
b. Software implementation
c. **Both a & b**
d. None of these

13.Which are never form a part of the architecture because they are not visible from the outside

a. Interface specification
b. Implementation details
c. **Both a & b**
d. None of these
e.

14.The information exchanged between two computers is physically carried by means of _____ with the help of certain coding method

a. Electronics signal
b. **Electrical signal**
c. Physical signal
d. Physical circuits

15. For two computers to reliably exchange data, they must have a

a. compatible implementation of encoding
b. interpreting data carrying electrical signals
c. **Both a & b**
d. None of these

16.Transmission media deals with the types of medium used , which is dictated by the

a. Desirable bandwidth
b. Immunity to noise
c. Attenuation properties
d. **All of these**
e.

17.The data communication process allocates memory resources, commonly known as_____ for the sake of transmission and reception of data

a. **Communication buffers**

b. Communication media

c. Both a & b

d. None of these

18. The receiving computer must be capable of distinguishing between information Carrying signal and mere noise

a. Error control

b. Logical channels

c. Routing

d. **All of these**

19.In error control, this corruption could be in the form of _____

a. Noise

b. Electromagnetic interference

c. **Both a & b**

d. None of these

20.Protocols should provide at least _____ logical channels per connection

a. **2**

b. 3

c. 4

d. 5

21. Data exchange can take place between any _____ workstations

a. 1

b. **2**

c. 3

d. 4

22.Depending on the nature of the involved application in layered architecture, the dialog type may be

a. Duplex

b. Half duplex

c. Simplex mode

d. **All of these**

23. The session recovery can be achieved by providing a

a. Checkpoint

b. **Check mechanism**

c. Character encoding

d. Terminal emulation

24.The check pointing circumvent session recovery requirement by retransmitting only the

a. Affected files

b. Saving time

c. Bandwidth

d. **All of these**

e.

25.Some good examples of presentation problems are the existing incompatibilities between the_____ standard of character encoding

a. ASCII

b. EBCDIC

c. **Both a & b**

d. None of these

e.

26. This is the entities in the same layers but on different computers

a. **Peer entities**

b. Entities

c. Service provider

d. SAP

27. Which function of the layer provides certain services

a. Peer entities

b. Entities

c. **Service provider**

d. SAP

28.Which function of the layer uses certain services

a. Peer entities

b. Entities

c. Service provider

d. **Service user**

29.Which is the point from where services can be accessed .each point is the unique address

a. Peer entities

b. Entities

c. Service provider

d. **SAP**

30. Which are the active elements such as processes, IO chips in every layers

a. Peer entities

b. **Entities**

c. Service provider

d. SAP

31.Which is the reliable connectionless service with acknowledgement

a. **Registered E-mail**

b. Junk E-mail

c. Both a & b

d. None of these

32. Which is the unreliable connectionless service without acknowledgement

a. Registered E-mail

b. **Junk E-mail**

c. Both a & b

d. None of these

e.

33.In which model, Request-reply command is example of connectionless service

a. **Client-server model**

b. User model

c. Server model

d. None of these

34. Which service is specified by a set of primitives available to a service user to interact with the service provider

a. connection-oriented

b. connectionless

c. **Both a & b**

d. None of these

35.Which are parameters to define conditions

a. Protocol

b. **Primitives**

c. Confirmed service

d. SAP

36.A confirmed services is defined with a

a. Request

b. Confirm

c. Response

d. Indication

e. Primitives

f. **All of these**

g.

37.The Service primitives are the part of

a. **Protocol**

b. Primitives

c. Confirmed service

d. SAP

38.An unconfirmed is defined with a

a. Request

b. Indication

c. Confirm

d. Response

e. **Both a & b**

f. All of these

39.Which are the distinct concepts and are important to release connections between sender and receiver

a. Services

b. Protocol

c. **Both a & b**

d. None of these

e.

40.Which is provided to the upper layer by an immediate lower layer

a. Protocol to service

b. **Service to protocol**

c. Service primitives

d. None of these

41. The characteristic of each layer are as

a. Name

b. Content

c. Function

d. Total no of layers depend on type of network

e. **All of these**

f.

42.The basic function of each single layer is to provides service to the

a. Layer of the top

b. Layer of the bottom

c. **Layer above it**

d. Layer below it

43._____ the protocol can make communication between the two either difficult or impossible

a. **Breaching**

b. Branching

c. Broaching

d. Brunching

44.The network architecture can be termed as a

a. Set of layers

b. Set of protocols

c. Set of machines

d. **Both a & b**

45.The hectic task of designing the whole network can be distributed in the

a. Smaller

b. Easier

c. Simpler design problems

d. **All of these**

46.Which is the computers from the same manufacturer it was not possible to run both_____ solution and _____ simultaneously

a. IBM

b. DEC

c. **Both a & b**

d. None of these

47.ISO-OSI reference model these could only be run one at a time by the end_____

a. 1969s

b. 1971s

c. **1970s**

d. 1972s

48.Which is a reliable connection-oriented service has two subparts

a. Message sequences

b. Byte streams

c. **Both a & b**

d. None of these

e.

49.Which is similar to postal system where every message contains the complete destination address and is mapped through the system, free of all the others

a. Connection-oriented services

b. **Connectionless services**

c. Both a & b

d. None of these

50.The various types of services provided by the interface to the layers above them are listed as follows

a. Connection-oriented services

b. Connectionless services

c. **Both a & b**

d. None of these

51.The connectionless services can be further sub-divided into many categories

a. Unreliable datagram

b. Acknowledged datagram

c. **Both a & b**

d. None of these

52.Unreliable connectionless service can be also termed as

a. **Datagram service**

b. Data service

c. Byte stream service

d. None of these

53.By the end of _____, the Open System Interconnection model was developed by the International Organization for Standardization to break the barrier

a. 1980

b. **1970**

c. 1990

d. 1960

54.The first and the lowest layer is called the _____

a. Physical layer

b. Supporting rules for low-level signaling

c. Hardware implementation

d. **All of these**

55.The seventh and the highest layer is the application layer that deals with the

a. User interface

b. Applications

c. **Both a & b**

d. None of these

56.In moving from layer one to layer seven, the level of abstraction _____

a. **Increases**

b. Decreases

c. May be increases or decreases

d. None of these

e.

57.The first layer deals with the actual _____

a. Hardware of networks

b. The specific methods of sending bits from one device to another

c. **Both a & b**

d. None of these

58.The second layer also deals with _____

a. Signaling

b. Hardware

c. **Both a & b**

d. None of these

e.

59.The transport layer is the one, which links the communication process to this _____

a. Hardware-oriented protocol

b. **Software-oriented protocol**

c. Both a & b

d. None of these

60.Which is collectively known as a protocol data unit(PDU)

a. Data

b. Header

c. **Both a & b**

d. None of these

61.The seventh layer does not deal with _____ concepts very much

a. Hardware

b. Even operating system

c. **Both a & b**

d. None of these

62.The basic philosophy of the seven-layer model is that each layer may be defined

a. Dependently of every other layer

b. **Independently of every other layer**

c. Dependent on same layer

d. None of these

63.The seven layers of the OSI model are categorized into _____ groupings

a. **2**

b. 3

c. 4

d. 5

64.The lower layers are layers

a. 1,2,3

b. **1,2,3,4**

c. 1,2,3,4,5

d. 2,3,4,5,6

65.The upper layers are layers

a. 5,6

b. 5,7

c. 6,7

d. **5,6,7**

66.The lower layers are implemented by using _____ with the incidence of hardware 'reducing' to software from layer 1 to layer 4

a. Software

b. Hardware

c. **Both a & b**

d. None of these

e.

67.The upper layers are not expected to know anything about _____

a. Networking

b. Network addresses

c. **Both a & b**

d. None of these

68.The bottom four layers take the responsibility of _____

a. Networking

b. Network addresses

c. **Both a & b**

d. None of these

e.

69.The OSI interface is a process of communication between adjacent layers in which data is passed between

a. Layer n

b. Layer n-1

c. Layer n+1

d. **All of these**

70.The layers 3 and 4 interface are used by protocol to _____

a. Pass control

b. Pass Data information

c. **Both a & b**

d. None of these

71.This refers to communication up and down the protocol stack every time any data is sent received across the network

a. **Vertical communication**

b. Horizontal communication

c. Protocols

d. OSI interfaces

72.Which is a communication process running at a particular layer on one host machine can accomplish logical communication with a similar process running at the same layer on another host machine

a. Vertical communication

b. **Horizontal communication**

c. Protocols

d. OSI interfaces

73.Which OSI model supports the interconnection of different implementations of various autonomous layers

a. Modularity

b. Inter-layer interactions

c. **Both a & b**

d. None of these

e.

74.The functions of the OSI layer model are

	Layers	Functions

1	Physical	It moves bits between devices by using media
2	Data link	It tends to assemble packets into bytes and bytes into frames and provides access to media by using MAC address
3	Network	It is responsible for providing logical addressing which routers use for path determination and routing
4	Transport	It provides reliable or unreliable delivery and performs error correction before retransmit. It is also responsible for end-to-end connection
5	Session	It aims to keep different applications data separately and provides dialog control
6	Presentation	It provides rules to present data, handle processing like encryption, compression and translation services
7	Application	It aims to provide a user interface like file, print, message, database and application services

75.A number of transmission media exist, some of them are

a. Open wire circuits
b. Twisted pair cables
c. Coaxial cables
d. Fiber optic cables
e. Wireless
f. **All of these**

76.The physical layer specifies the representation of each bit as a

a. Voltage
b. Current
c. Phase or frequency
d. **All of these**

77.The physical layer uses four types of bit signaling approaches these are

a. RZ(return to zero) by using pulse signaling
b. NRZ(non return to zero) transmission by using level signaling
c. Manchester encoding by using phase signaling
d. NRZ-I(non return to zero-invertive) by using bandwidth

e. **All of these**

78.What are the two types of systems that are used to provide timing signal

a. Asynchronous communications

b. Synchronous communications

c. **Both a & b**

d. None of these

79.The timing signal identifies the boundaries between the

a. Bytes

b. **Bits**

c. Gigabyte

d. Megabyte

80.Which bit stream is to be transmitted with the objective that when the sending side sends _____ bit

a. **1**

b. 0

c. 1,0

d. None of these

81.Which bit stream is to be transmitted with the objective that when the received by the receiving side as 1 bit, not as ___ bit

a. 1

b. **0**

c. 1,0

d. None of these

82.It defines the electrical and mechanical aspects of interfacing to a physical medium for transmitting data _____

a. As well as setting up

b. Maintaining

c. Disconnecting physical links

d. **All of these**

83.The functions of the physical layer are

a. Describing hardware specifications

b. Encoding and signaling

c. Data transmission and reception

d. **All of these**

84.The physical layer supports various encoding and signaling functions to convert data, from bit stream to frame and vice versa, to send across the network

a. Describing hardware specifications

b. **Encoding and signaling**

c. Data transmission and reception

d. None of these

85.What is an example of a physical layer definition

a. RS-323C/D

b. **RS-232C/D**

c. RS-233C/D

d. RS-322C/D

86. Examples of data link layers are

a. HDLC

b. Ethernet

c. **Both a & b**

d. None of these

87.The functions of the data link layer are

a. Logical Link control(LLC)

b. Media Access Control(MAC)

c. Data framing

d. Addressing

e. Error detection and handling

f. **All of these**

88.The data link layer also deals with the issue of addressing what is popularly known as

a. Hardware

b. Address

c. MAC address

d. **All of these**

89.Some of the examples of MAC are

a. CSMA/CD for Ethernet

b. Token passing for the Token Ring network

c. **Both a & b**

d. None of these

90.The functions of the Network layer are

a. Logical addressing

b. Routing

c. Datagram encapsulation

d. Fragmentation and reassembly

e. **All of these**

91.The routing of network layer may be

a. Static

b. Dynamic

c. **Both a & b**

d. None of these

e.

92.The network layer uses which service for delivering packets across the network

a. Connection-oriented

b. Connectionless service

c. **Both a & b**

d. None of these

93.In broadcast network ,the routing problem is _____, so the network layer is often thin or even nonexistent

a. Complex

b. **Simple**

c. Both a & b

d. None of these

94.The transport layer provides the necessary function to enable communication between _____ processes on different computers

a. **Software application**
b. Hardware application
c. Both a & b
d. None of these
e.

95.The transport layer accepts data from the _____ and splits it up into smaller units so that it can be passed to the network layer

a. Network layer
b. **Session layer**
c. Presentation layer
d. Physical layer

96. Which protocol uses the transport layer

a. FTP
b. TFTP
c. HTTP
d. **TCP/IP**

97.The functions of transport layer are

a. Process-level addressing
b. Multiplexing and de-multiplexing
c. Segmentation, packaging and reassembly
d. Connection establishment , management and termination
e. Acknowledgements and retransmission
f. Flow control
g. **All of these**

98.The session layer is responsible for _____ the dialogues between communicating applications

a. Establishing
b. Maintaining

c. Arbitrating

d. **All of these**

e.

99. The session layer provides enhanced useful services in some applications such as

a. Remote login

b. Remote file transfer

c. **Both a & b**

d. None of these

100. Some examples of APIs are

a. NetBIOS

b. TCP/IP sockets

c. Remote Procedure Calls (RPCs)

d. **All of these**

101. Which enable an application to complete specified high level communications over the network successfully and easily with the help of a standardized set of services

a. RPCs

b. **APIs**

c. TCP/IP

d. All of these

102. The data link layer is also known as

a. **Link layer**

b. Data layer

c. Open layer

d. None of these

103. Some example of data link layers are

a. HDLC

b. Ethernet

c. **Both a & b**

d. None of these

104.Which provides link to many wireless and wired local area networking (LAN) like Ethernet ,FDDI, IEEE802.11 etc to function

a. Physical layer
b. **Data link layer**
c. Transport layer
d. Presentation layer

105.Which layer is responsible for the reliable transfer of data across the physical link

a. Physical layer
b. **Data link layer**
c. Transport layer
d. Presentation layer

106.The responsibility of data link layer include functions such as

a. Data flow control
b. Breaking the input data
c. Frame formatting
d. Transmission of the frame sequence
e. Error detection
f. Link management
g. **All of these**

107.Which layer performs functions relative to the syntax and semantics of the information transmitted

a. Physical layer
b. Data link layer
c. Transport layer
d. **Presentation layer**

108.The types of data handling issue that presentation layer provides are as follows

a. Translation
b. Compression
c. Encryption
d. **All of these**

109.In translation, different types of computers like _____in an Inter-network have many distinct characteristics and represent data in different ways

a. PCs
b. Macintoshes
c. UNIX systems
d. AS/400 servers
e. **All of these**

110.Which layer allows the user to use the network

a. Physical layer
b. Data link layer
c. **Application layer**
d. Presentation layer

111.The application layer provides network-based services to the user are

a. Distributed database
b. Electronic mail
c. Resource sharing
d. File transfer
e. Remote file access
f. Network management
g. **All of these**

112.Which layer provides user interface to communicate with a computer

a. Physical layer
b. **Application layer**
c. Transport layer
d. Presentation layer

113.The most popular application layer protocols are

a. HTTP, FTP
b. SMTP, DHCP
c. NFS, Telnet
d. SNMP, POP3

e. NNTP, IRC

f. **All of these**

114.Which model is considered the oldest protocol of all computer networks like the ARPANET and its successor, the Internet

a. **TCP/IP Reference model**

b. SMTP model

c. Telnet model

d. NNTP model

e.

115.Most users rely on _____ for the purpose of file transfers, electronic mail(e-mail) and remote login services

a. **TCP/IP**

b. SMTP

c. DHCP

d. NFS

e.

116.How many layers TCP/IP model has

a. 2

b. 3

c. **4**

d. 5

117.TCP/IP layer specifies the _____ layer

a. **Physical layer**

b. Application layer

c. Transport layer

d. Presentation layer

118.TCP/IP defines a four-layer model consisting of the

a. Internet layer

b. Transport layer

c. Application layer

d. Network interface layer

e. **All of these**

119.TCP/IP architecture is based on the three sets of interdependent processes are

a. Application-specific processes

b. Host-specific processes

c. Network-specific processes

d. **All of these**

120.Which TCP/IP standards define protocols for TCP/IP networks for layer two implementation to fill the gap between the network layer and the physical layer

a. Serial Line Internet Protocol(SLIP)

b. Point-to-Point Protocol(PPP)

c. **Both a & b**

d. None of these

121.The Internet layer of the TCP/IP matches with the which layer of the OSI model

a. **Network layer**

b. Physical layer

c. Session layer

d. Data link layer

122.The Packet format and protocol at internet layer is called

a. Network protocol

b. **Internet protocol**

c. OSI protocol

d. None of these

123.Which protocols are found in a Internet Layer of TCP/IP model

a. IP

b. ICMP

c. RIP

d. BGP

e. **All of these**

124.Which protocols are found in a Network interface Layer of TCP/IP model

a. Ethernet

b. FDDI

c. Token Ring

d. **All of these**

e.

125.Which protocols are found in a Transport Layer of TCP/IP model

a. TCP

b. UDP

c. FDDI

d. **Both a & b**

126.Which protocols are found in a Application Layer of TCP/IP model

a. FTP

b. TFTP

c. SMTP

d. NFS

e. TELNET

f. SNMP

g. **All of these**

h. None of these

127.The UDP Protocols are

a. Reliable

b. Connection-oriented

c. Connectionless

d. Unreliable

i. Both a & b

ii. **Both c & d**

iii. None of these

128.Which protocols are found in the application layer

a. **Numerous**

b. UDP

c. TCP

d. IP

129.Which other function include _____and identification of port number

a. Sequence control

b. Error recovery and control

c. Flow control

d. **All of these**

130.TCP layer is a

a. Service

b. **Connection type service**

c. Connectionless type service

d. None of these

131.The basic functions of application layer are _____ that wish to communicate with one another

a. To identify the source machine

b. To identify the destination machine

c. **Both a & b**

d. None of these

132.The Internet has definite standards for FTP that connects to a

a. Remote machine

b. Sends an arbitrary file

c. Fetches an arbitrary file

d. **All of these**

133.FTP addresses the

a. Issues of authentication

b. Listing of directory contents

c. ASCII or binary files

d. **All of these**

134.Another aspect of the application layer is to _____ ,this application is called telnet

a. **Login remotely**

b. Logout

c. Remotely

d. None of these

135.TCP connection with another location and then pass keystrokes from the _____

a. Remote host to local host

b. Local host to remote host

c. remote host to remote host

d. Local host to Local host

136.Similarly, there are many other applications such as NNTP enabling communication between a _____

a. News server

b. News client

c. Web(HTTP)-based protocol for communication on the WWW

d. **All of these**

137.FTP is among the oldest protocols used in the_____

a. Internet

b. Web

c. **Both a & b**

d. None of these

138.Which is a file server access protocol that enables a user to transfer files between two hosts

a. SMTP

b. TCP

c. **FTP**

d. NNTP

139.FTP is widely available on almost all-browsers indicating that all computing platforms, including _____

a. DOS

b. OS/2

c. UNIX and up to the mainframe level have this service available

d. **All of these**

140.Which dose not require any familiarity with the remote operating system

a. SMTP

b. TCP

c. **FTP**

d. NNTP

e.

141.Modern FTP servers known as _____

a. TCPD

b. **FTPD**

c. SMTD

d. CTPD

142.FTPD support two different TCP connections namely_____

a. Control connection

b. Data connection

c. **Both a & b**

d. None of these

e.

143.Which is invoked for the entire duration of transfer of file or FTP session

a. **Control connection**

b. Data connection

c. Both a & b

d. None of these

144.Which connection is establish as and when it is required

a. Control connection

b. **Data connection**

c. Both a & b

d. None of these

e.

145.The main function of data connection is to facilitate transfer of file and directory to and

from the_____

a. Clients at the server's request
b. **Clients at the client's request**
c. Server at the server's request
d. Server at the client's request

146.TFTP stands for

a. Transfer file trivial protocol
b. Transfer file transfer protocol
c. Trivial file trivial protocol
d. **Trivial file transfer protocol**

147.Which is also an internet service intended for the transfer of files from one computer to another over a network

a. TFTP
b. FTP
c. **Both a & b**
d. None of these

148.TFTP does not provide _____

a. Password protection
b. User directory capability
c. **Both a & b**
d. None of these

149.TFTP is simpler than the _____ but less capable

a. **FTP**
b. SMTP
c. NNTP
d. FTPD

150.Which is one of the most popular network services

a. Electronic message
b. **Electronic mail**
c. Electric mail

d. None of these

e.

151.Electronic mail works like an

a. Post mail

b. **Postal mail**

c. Post card

d. None of these

152.E-mail has two parts namely

a. User agent

b. Message Transfer agent

c. **Both a & b**

d. None of these

153.MTA stands for

a. Message Transmission Agent

b. Machine Transfer Agent

c. **Message Transfer Agent**

d. Mobile Transfer Agent

154.Which is a software package that transports the message created by a user to destination mailboxes possibly on remote machines

a. User agent

b. **MTA**

c. Both a & b

d. None of these

155.The MTA has to perform more complex jobs than other applications

a. MTA distinguishes between local and remote recipients

b. MTA needs to deliver copies of a message to several machines

c. MTA allows mixing of text, voice appending documents, files and video in a message

d. MTA handles temporary failures when a destination machine is temporarily unavailable

e. **All of these**

156.In MTA, e-mail address consist of the following components

a. Mailbox names

b. Symbolic names

c. Group names(mail exploders)

d. **All of these**

157.Which is the user interface to the mail system

a. **User agent**

b. MTA

c. Both a & b

d. None of these

158.Which refers to the name of a service rather than a specific user

a. Mailbox names

b. **Symbolic names**

c. Group names(mail exploders)

d. All of these

159.Which refers to an alias for a set of recipients, that consults an internal database to specify the mail addresses

a. Mailbox names

b. Symbolic names

c. **Group names(mail exploders)**

d. All of these

160.There are a number of e-mail packages available. Some of them are free like _____, while some are paid

a. Google mail

b. Yahoo mail

c. Hotmail

d. **All of these**

161.In MTA, all of them are also not alike but most of the e-mail software have common basic functionality these are

a. Send and receive mail messages

b. Save your messages in a file

c. Print mail messages

d. Forward a mail message to other recipients

e. Reply to mail messages

f. Attach a file to a mail message

g. **All of these**

162.E-mail address has three parts

a. A user identity or name

b. An 'at' sign(@)

c. The domain name, which basically specifies the address of the user's mail server

d. **All of these**

163.SMTP is the _____ standard for an electronic mail service provider

a. dee facto

b. **de facto**

c. de fact

d. none of these

164.SMTP uses _____ transport for the reliably delivery of mail messages

a. FTP

b. **TCP**

c. MTA

d. FTPD

165.The SMTP server also allows _____

a. NNTP

b. **Telnet service**

c. FTPD

d. none of these

166.SMTP can be considered as a complement of _____

a. UUDP

b. **UUCP**

c. UCCP

d. UCPD

167.SMTP commands consist of human-readable _____

a. EBCDIC strings

b. **ASCII strings**

c. Both a & b

d. None of these

168.MIME stands for

a. Multipurpose Internet Machine Extensions

b. Multiprogramming Internet Machine Extensions

c. **Multipurpose Internet Mail Extensions**

d. Multipurpose Internet Mail Exchange

169._____ standards were used to encode binary files for transfer through SMTP, which has now become a standard with its varied version

a. FTPD

b. FTP

c. **MIME**

d. UUCP

e.

170.POP3 stands for

a. Postal Office Protocol

b. **Post Office Protocol**

c. Post Office Program

d. Posting of Protocol

171.IMAP stands for

a. Internet Machine Access Protocol

b. **Internet Message Access Protocol**

c. Internet Multipurpose Access Protocol

d. Inkjet Message Access Protocol

172.Which one is a push kind of protocol

a. **SMTP**

b. POP3

c. IMAP

d. All of these

173.Which one is a pull kind of protocol

a. SMTP

b. POP3

c. IMAP

d. **Both b & c**

174.Telnet can also be used to connect other ports serving as _____

a. User-defined services

b. Well-known services

c. **Both a & b**

d. None of these

175.Telnet works as a _____ model where it establishes a virtual connection by using the TCP transport protocol

a. User-defined

b. Well-known

c. **Client-server**

d. All of these

e.

176.The Telnet program requires two arguments

a. The name of a computer on which the server runs

b. The protocol port number of the server

c. **Both a & b**

d. None of these

177._____ to support centralized terminal management can support

a. Transfer binary data

b. Support byte macros

c. Emulate graphics terminals

d. Convey information

e. **All of these**

178.Telnet service is unique in the manner that is _____ like other TCP/IP services

a. Platform-specific

b. **Not platform-specific**

c. Platform-service

d. None of these

179.0Some of the Telnet commands are as follows

Interrupt Process(IP)	It terminates the running program
Abort output(AO)	It refers to discarding of any buffered output
Are You there(AYT)	This command allows a client to send an out-of-band query to verify whether the remote end is still there
Erase character(EC)	It refers to the erasing of the previous character
Erase line(EL)	It deletes the entire current line
Synchronize	It clears the data path to the remote party
Break	It is equivalent to the BREAK or ATTENTION key

180.Novell NetWare is a _____ network operating system that was created by Novell, Inc

a. Client type

b. Server type

c. **Both a & b**

d. None of these

181.Novell NetWare uses a protocol stack having _____

a. 3 layers

b. 4 layers

c. **5 layers**

d. 6 layers

182. IPX stands for

a. Internet Packet Exchange

b. **Inter-network Packet Exchange**

c. Inter-network Protocol Exchange

d. Internet Package Exchange

183._____ is a networking protocol used by the Novell NetWare operating systems for performing connectionless communication

a. NVT

b. **IPX**

c. IP

d. FTP

184.The rise 1985 saw the rise of Novell NetWare when _____ were launched

a. NetWare 286 2.0a

b. Intel 80,286 16-bit processor

c. **Both a & b**

d. None of these

185.Two methods of operation were supported by NetWare 286 2.x namely are

a. Dedicated

b. Non-dedicated

c. **Both a & b**

d. None of these

e.

186.Beginning with NetWare 3.x, assistance for _____ protected mode was included, removing the 16MB memory limit of NetWare 286

a. 16-bit

b. **32-bit**

c. 64-bit

d. 128-bit

187.Which managed all functions and was activated at startup or at the time of requirement

a. **NLM(NetWare Loadable Module)**

b. FTP

c. SMTP

d. FTPD

188.A set of protocols used in the communication network can be termed as

a. Protocol
b. **Protocol stack**
c. Protocol layer
d. None of these
e.

189.According to RFC 1122 the TCP/IP consists of _____

a. 2 layers
b. 3 layers
c. **4 layers**
d. 5 layers
e.

190.The lowest layers of the TCP/IP establishes communication with

a. Upper layer
b. **Physical media**
c. Next layer
d. Protocol

191.When data travels downwards from upper the layer in TCP/IP, each upper layer attaches a

a. Footer
b. **Header**
c. Standard
d. None of these
e.

192.After the transmission of data in bit form to another machine it travels upward, _____ the header till data reaches the application layer

a. Stripping in
b. **Stripping off**
c. Tackling off
d. Tackling in

e.

193.In which year, Netware directory service were added to the Netware version 4

a. **1993**

b. 1996

c. 1998

d. 2001

194.In which year. Version 4.11 was launched by Novell

a. 1993

b. **1996**

c. 1998

d. 2001

195.In which year, NetWare5 was launched in October

a. 1993

b. 1996

c. **1998**

d. 2001

196.In which year, NetWare6 was launched

a. 1993

b. 1996

c. 1998

d. **2001**

e.

197.Every protocol with a certain from of contact is known as

a. Protocol stack

b. **Protocol suite**

c. Stack

d. Suite

198.Which is a file server access protocol that enables a user to transfer file between two hosts, across the network or Internet using TCP

a. FTPD

b. **FTP**

c. Telnet

d. PPP

199.Which is a remote terminal protocol that enables a user at one location to establish a TCP connection with another location

a. FTPD

b. FTP

c. **Telnet**

d. PPP

200.Which protocol is used by network computers operating system for sending error messages

a. FTPD

a. **FTP**

b. Telnet

c. **ICMP**

---

1. Which protocol was based on the specification called the Ethernet
   a. IEEE 802.3
   b. CSMA/CD
   c. **Both a & b**
   d. None of these
2. MAC(Medium Access Control)sub layer is between the
   a. Physical layer
   b. Data Link layer
   c. **Both a & b**
   d. None of these
3. Depending on the transmission media used, the Ethernet can be classified into following categories are
   a. Thick Ethernet or 10base5
   b. Cheaper Net or Thin Net(10base2)
   c. Star LAN(10baseT)
   d. Optical Fibre CSMA/CD LAN (10baseF)
   e. **All of these**
4. The characteristics of the Thick Ethernet cable are

a. Provides connectivity to max of 1024 stations
b. Cable supports a max distance of 500meters
c. Max distance covered by a network using Thick Ethernet is 2.5Km
d. Max no of stations supported by the Ethernet is 1024
e. **All of these**

5. A 10 Mbps cable is like a
   a. Blue hose
   b. **Yellow hose**
   c. Black hose
   d. None of these
6. All stations in a Thick Ethernet is connected to a
   a. Twisted pair cable
   b. **Coaxial cable**
   c. CSMA/CD
   d. Transceiver
7. A group of stations connected to a cable forms a
   a. Repeater
   b. Transceiver
   c. **Segments**
   d. Groups
8. Which device is used to link two network segments, which are separated by a long distance
   a. **Repeater**
   b. Transceiver
   c. Segments
   d. Groups
9. Each cable is connected to a Ethernet cable through a
   a. Repeater
   b. **Transceiver**
   c. Segments
   d. Groups
10. A repeater consists of _____ transceiver
    a. 1
    b. **2**
    c. 3
    d. 4
    e.
11. The functions performed by physical layer are
    a. Encoding the data
    b. Medium access

c. Data encapsulation
d. **Both a & b**

12. The functions performed by logical layer are
a. Data encapsulation
b. Link management
c. Medium access
d. **Both a & b**
e.

13. The computer or station is connected to a Ethernet card, Ethernet card consists of
a. Station interface
b. Data packet generator
c. A link management unit
d. **All of these**

14. The output of a Ethernet card is connected to the data encoder/decoder, which in turn is connected to the transmission cable through a
a. Repeater
b. **Transceiver**
c. Segments
d. Groups

15. The IEEE802.3 Ethernet frame format are
a. Preamble-7byte
b. Start of frame-1byte
c. Destination address-6byte
d. Source address-6byte
e. Length-2byte
f. Information field-46to 1500bytes
g. Frame check sequencer-4byte
h. **All of these**

16. The local area networks that do not require the capabilities of complete Ethernet system, the IEEE802.3 standard committee has created a new standard called
a. **Thin net**
b. Star LAN
c. Optical fibre CSMA/CD
d. None of these

17. The characteristics of thin net or cheaper net is
a. Max distance is up to 200meters
b. Max no of nodes is 30
c. Max stations per network is 1024
d. Node spacing is 0.5meters

e. Cable diameter is 0.25inches
f. BNC-T-connector is used to connect cables and N-series connector
g. **All of these**

18. The third variation of IEEE802.3 standard was a
    a. Thin net
    b. **Star LAN**
    c. Optical fibre CSMA/CD
    d. None of these
19. The characteristics of Star LAN are
    a. It operates data rate up to 1Mbps
    b. The configuration contains up to 5 upward levels of hubs
    c. Twisted pair cable already used in telephone lines for transmission media
    d. Each group of stations is connected to a local hub
    e. The hubs are connected in the form of tree
    f. **All of these**
20. The characteristics of optical fibre CSMA/CD LAN are
    a. Good immunity to the electromagnetic interference
    b. Low loss of power
    c. High bandwidth
    d. Less weight
    e. High transmission security
    f. **All of these**
21. The optical fibre version of CSMA/CD LAN has a no of advantage than the
    a. **Coaxial cable version of Ethernet**
    b. Twisted cable version of Ethernet
    c. Both a & b
    d. None of these
22. A token ring is a ring topology created by IBM in
    a. 1960
    b. 1990
    c. **1970**
    d. 1980
    e.
23. A stream of data is called a
    a. **Token**
    b. Frame
    c. Token Ring
    d. None of these
24. A central hub called _____ is used to connect each station in a star type of topology

a. **MSAU(Multi Station Access Unit)**
b. CSAU
c. SSAU
d. None of these

25. The advantage of Token ring mechanism is
    a. It prevents collision by ensuring that only one station at a time is transmitting
    b. Ensures delivery of frame
    c. **Both a & b**
    d. None of these
26. Which uses electromechanical relays to make the physical star into a logical ring
    a.
    b. **MSAU(Multi Station Access Unit)**
    c. CSAU
    d. SSAU
    e. None of these
27. NAUN stands for
    a. **Nearest Active Upstream Neighbour**
    b. Network Active Upstream Neighbour
    c. Network administrator Upstream Neighbour
    d. None of these
28. IBM token ring products were available with speeds of
    a. 4Mbps
    b. 16Mbps
    c. **Both a & b**
    d. None of these
    e.
29. High-Speed Token Ring(HSTR) technology is also available with speed of
    a. 100Mbps
    b. 1Gbps
    c. **Both a & b**
    d. None of these
30. The frame format of a token ring in a ring topology is
    a.
    b. Preamble
    c. Start Delimiter
    d. Frame Control
    e. Destination Address
    f. Source Address

g. Date
h. FCS
i. End Delimiter
j. Frame status
k. **All of these**

31. In a token ring , stations are connected to a
    a. Physical ring
    b. **Logical ring**
    c. Both a & b
    d. None of these
32. How many modes a ring interface can operate
    a. 1
    b. **2**
    c. 3
    d. 4
33. A ring interface can operate different modes
    a. Listen mode
    b. Talk mode
    c. **Both a & b**
    d. None of these
34. In physical layer of token ring , signal speed of this media is
    a. 1Mbps
    b. 4Mbps
    c. **Both a & b**
    d. None of these
35. IBM released a token ring version that can operate at a speed of _____
    a. 4Mbps
    b. 6Mbps
    c. 8Mbps
    d. **16Mbps**
36. Differential_____ encoding schema is used for encoding the digital data
    a. **Manchester**
    b. Multi programming
    c. Multi processor
    d. None of these
37. The MAC sub layer is on the____ of the physical layer
    a. Bottom
    b. Mid
    c. **Top**

d. None of these

38. When there is no traffic on the ring_____ token circulates continuously until some station grabs it

a. **3-byte**
b. 5-byte
c. 7-byte
d. 9-byte

39. The length of the frame_____

a. Short
b. Long
c. **May be long or short**
d. None of these

40. The maximum time a station is permitted to hold the token is known as_____

a. Token time
b. **Token holding time**
c. Token ring
d. None of these

41. The IEEE802.5 token frame format are

a. Start of frame and end of frame
b. Access control
c. Frame control
d. Source address and destination address
e. Checksum
f. **All of these**

42. The token ring management activities are

a. Monitor stations
b. Ring initialization
c. Lost tokens
d. Orphan frames
e. **All of these**

43. The stations crashed after transmitting a short frame form

a.
b. Monitor stations
c. Ring initialization
d. Lost tokens
e. **Orphan frames**
f. All of these

44. The FDDI network stands for

a. Fibre Distributed Data Incorporation

b. Fibre Distributed Data Institute
c. **Fibre Distributed Data Interface**
d. Fibre Distributed Dual Incorporation

45. The FDDI network is a
a. High-speed
b. High-bandwidth
c. **Both a & b**
d. None of these

46. The FDDI network is based on the
a. Physical transmission
b. **Optical transmission**
c. Logical transmission
d. None of these
e.

47. The characteristics of FDDI network are
a. It transport data at a rate of 100Mbps
b. It can support up to 500stations on a single network
c. This network is used for connecting high-end computers
d. Rapid transfer of large amount of data
e. FDDI network consists of two counter-rotating rings
f. It was designed to run through fibre cables or copper media
g. It was based on ring topology with token passing
h. It helps and support extend the capabilities of older LANs , such as Ethernet and token ring
i. It provides a reliable infrastructure for businesses ,moving even mission-critical applications to networks
j. Easier to maintain
k. Compatible to standard-based components and various operating systems
l. **All of these**

48. The ANSI began working on the FDDI-standard in
a. 1980
b. 1981
c. **1982**
d. 1983

49. The FDDI specification was released in
a. 1982
b. 1983
c. 1984
d. **1986**

50. The most key elements of FDDI was defined in
    a. 1986
    b. 1982
    c. 1985
    d. **1989**
51. The FDDI considered as a _____ of IEEE802.5standard
    a. Predecessor
    b. **Successor**
    c. Tool
    d. None of these
    e.
52. FDDI network comprises 2 bottom layer in ISOs OSI model namely
    a. Physical layer
    b. Data link layer
    c. **Both a & b**
    d. None of these
    e.
53. The physical layers are
    a. PMD
    b. PHY
    c. **Both a & b**
    d. None of these
    e.
54. The ANTC stands for
    a. **Advanced Network Test Center**
    b. American National Test Center
    c. American National Token Center
    d. None of these
55. The word EANTC stands for
    a. **European ANTC**
    b. Easily ANTC
    c. Efficient ANTC
    d. None of these
56. The FDDI is
    a. More than LAN
    b. Less than WAN
    c. Less than LAN
    d. **Both a & b**
57. The FDDI network can easily be added to network topologies such as

a. Ethernet
b. Token ring
c. **Both a & b**
d. None of these

58. The FDDI supports four different types of cables as
a. Multimode fibre optic cable
b. Single mode fibre optic cable
c. Unshielded twisted-pair copper wiring
d. Shielded twisted-pair copper wiring
e. **All of these**

59. The PMD stands for
a. **Physical Medium Dependent**
b. Physical Medium Distance
c. Physical Media Dependent
d. Permitting Medium Dependent

60. For optical fibre media , which PMD is used
a. TP-PMD
b. **Fibre PMD**
c. Both a & b
d. None of these
e.

61. For copper media , which PMD is used
a. **TP-PMD**
b. Fibre PMD
c. Both a & b
d. None of these
e.

62. Other two significant PMD are
a. SMF-PMD(Single Mode Fibre-PMD)
b. LCF-PMD(Low Cost Fibre-PMD)
c. **Both a & b**
d. None of these

63. The fibre PMD-ANSI X3T9.5/48 describes the physical layer that uses
a. Fibre components
b. Optical components
c. **Both a & b**
d. None of these

64. The characteristics and parameters of the optical fibre cable allowed for FDDI are
a. Wavelength of light(normal is 1300nm)

b. Attenuation and bandwidth
c. Max bit error rate
d. Dispersion of optical media
e. Numerical aperture(normal is 0.275)
f. Intensity of light
g. Jitter of pulse
h. Allowed power between two stations
i. **All of these**

65. The PHY are
a. Data link layer protocol
b. **Physical layer protocol**
c. Network protocol
d. None of these

66. The micrometer graded index fibre are
a. 62.5/125
b. 85/125
c. 50/125
d. 100/140
e. **All of these**

67. The max number of PHYs pre FDDI are
a. 200
b. 500
c. **1000**
d. 1800
e.

68. The DAS stands for
a. Dual Access Station
b. **Dual Attachment Station**
c. Data Access Station
d. Data Attachment Station

69. SAS stands for
a. Single Access Station
b. Single Attachment Station
c. **Single Attached Station**
d. None of these

70. Which standard is applied in the LLC(Logical Link Control) layer
a. IEEE802.5
b. **IEEE802.2**
c. IEEE802.6

d. IEEE802.4

71. The MAC layer specifies how to handle
    a. Synchronous data traffic
    b. Asynchronous Data traffic
    c. **Both a & b**
    d. None of these

72. IEEE802.2 standard works on _____ modes
    a. Connectionless
    b. Connection-oriented
    c. **Both a & b**
    d. None of these

73. If the received data is damaged or lost, the destination machine to retransmit the data known as _____
    a. SNAP
    b. **ARQ**
    c. LLC
    d. MAC

74. ARQ stands for
    a. Array Repeat Request
    b. **Automatic Repeat Request**
    c. Automatic Request Repeat
    d. Acknowledgement Repeat Request

75. SNAP stands for
    a. Subnetwork Access Package
    b. Subnetwork Access Packet
    c. Structured Access Protocol
    d. **Subnetwork Access Protocol**

76. LLC header contains _____ additional eight-bit address fields known as service access points or SAPs to request SNAP service
    a. 1
    b. **2**
    c. 3
    d. 4

77. PDU stands for
    a. Packet Device Unit
    b. Protocol Device Unit
    c. **Protocol Data Unit**
    d. Protocol Data Universal

78. IEEE802.3 Ethernet has become one of the most used _____

a. WAN media
b. **LAN media**
c. MAN media
d. None of these

79. Around 1984, DIX(a consortium of Digital, Intel and Xerox) and IEEE created standards for Ethernet, which are popularly known as the _____

a. IEEE802.3
b. **IEEE802.1**
c. IEEE802.2
d. IEEE802.3

80. Which another group took the responsibility for developing medium access protocols

a. **DLMAC**
b. ARQ
c. LAN
d. SNAP

81. Ethernet is the _____ expensive high-speed LAN alternative

a. More
b. **Least**
c. None of these

82. Ethernet transmits and receives data at a speed of _____

a. 5 million bits per second
b. **10 million bits per second**
c. 15 million bits per second
d. 20 million bits per second

83. In Ethernet, Data is transferred between wiring closets using either a _____

a. Heavy coaxial cable
b. Thick net
c. Fibre optic cable
d. **All of these**
e.

84. Ethernet was first designed and installed by Xerox Corporation at its Palo Alto Research Center(PARC) in the mid _____

a. 1960s
b. **1970s**
c. 1980s
d. 1965s

85. In 1980, _____ came out with a joint specification which has become the de facto standard

a. DEC

b. Intel
c. Xerox
d. **All of these**

86. Ethernet frames travel at the data link layer of the OSI model and must be a minimum of _____

a. 32bytes
b. **64bytes**
c. 128bytes
d. 256bytes

87. Ethernet frames travel at the data link layer of the OSI model and must be a maximum of _____

a. 1515bytes
b. 1516bytes
c. 1517bytes
d. **1518bytes**

88. FCS stands for

a. Frame Check System
b. **Frame Check Sequence**
c. Frame Cyclic Sequence
d. Frame Checksum Sequence

89. Ethernet IEEE802.3 frame description of each field in _____

a. Preamble (P)
b. Start Frame Delimiter (SFD)
c. Destination Address
d. **All of these**

90. The need for devising a mechanism to avoid such deadlocks, some of the important methods are listed below:

a. CSMA/CD
b. CSMA/CA
c. Token passing
d. Polling
e. **All of these**

91. _____ cable is used widely as a backbone technology

a. TV
b. Fibre
c. **Fibre optic cable**

d. None of these

e.

92. Which are used to connect LANs and LAN segments in a campus environment

a. Microwave

b. Infrared systems

c. **Both a & b**

d. None of these

93. The advantages of coaxial cable include high bandwidth in the range of _____ and more, better error performance and lack of severe distance limitation

a. 200MHz

b. 300MHz

c. 400MHz

d. **500MHz**

94. The disadvantage of coaxial cable have been mitigated to a _____ through the development of new coaxial designs

a. Small extent

b. **Large extent**

c. Either large or small

d. None of these

e.

95. Which uses traditional thick baseband coaxial cable in a bus topology to connect multiple computers, this single line transmission is called a Segment

a. 10Base2(Thick Net/Yellow Ethernet)

b. **10Base5(Thick Net/Yellow Ethernet)**

c. 10Base2(Thin Net/Black Ethernet)

d. 10Base5(Thin Net/Black Ethernet)

96. A coaxial cable _____ in diameter known as thick coaxial cable is used as a transmission line

a. 5mm

b. **10mm**

c. 15mm

d. 20mm

97. A transceiver is used to connect a _____

a. Coaxial cable

b. Terminals

c. Transmitter

d. **Both a & b**

98. A transceiver cable also referred to as an _____ cable and is used to connect a transceiver and the NIC

a. ALU
b. **AUI(Attachment Unit Interface)**
c. LAN
d. MAN

99. In 10Base5(Thick Net/ Yellow Ethernet) the maximum length of this cable is _____, up to 100 transceivers can be connected to each segment

a. 40 metres
b. 45 metres
c. **50 metres**
d. 55 metres

100. In 10Base5(Thick Net/ Yellow Ethernet) the minimum allowable distance between transceivers is _____

a. 1.5 metres
b. **2.5 metres**
c. 3.5 metres
d. 4.5 metres
e.

101. 10Base stands for _____

a. 10Mbps
b. Baseband transmission system
c. **Both a & b**
d. None of these

102. The 5 of 10Base5 signify a maximum of _____ segment length

a. 50- metre
b. **500- metre**
c. 5000- metre
d. 550- metre

103. The 5 of 10Base5 segment may be extended up to _____ by using repeaters

a. 500 metres
b. 1000 metres
c. **1500 metres**
d. 2000 metres

104. Which uses thinner baseband coaxial cable in a bus topology so that multiple computers can be connected to a single transmission line

a. 10Base2(Thick Net/Yellow Ethernet)
b. 10Base5(Thick Net/Yellow Ethernet)
c. **10Base2(Thin Net/Black Ethernet)**
d. 10Base5(Thin Net/Black Ethernet)

105. In 10Base2(Thin Net/Black Ethernet) a coaxial cable of thinner gauge of _____ in

diameter

a. **5mm**
b. 10mm
c. 15mm
d. 20mm

106. The thinner cable is less costly to acquire and deploy, although its performance is less in terms of transmission distance because of its cost it is sometimes called _____

a. Chaplet
b. **Cheapnet**
c. None of these

107. 10Base2 signifies in the same manner as 10Base5 except 2 is signified here as _____ maximum segment length(actually 185 metres)

a. 100 metres
b. **200 metres**
c. 250 metres
d. 300 metres

108. BNC stands for

a. Bayonet Neil Connection
b. **Bayonet Neil Connector**
c. Bayonet Neil Connectionless
d. Bayonet Network Connection

109. Which is used to connect a cable and terminals or terminators

a. BNC
b. T-connector
c. **Both a & b**
d. None of these

110. Only up to _____ per segment can be connected to a T-connector

a. 10 nodes
b. 20 nodes
c. **30 nodes**
d. 40 nodes

111. The minimum allowable distance is ____ between consecutive connections

a. 0.2 metres
b. **0.5 metres**
c. 1.5 metres
d. 2.5 metres

112. UTP stands for

a. Universal Twisted Pair
b. **Unshielded Twisted Pair**

c. Universal Transmission Pair

d. Unique Twisted Pair

113. STP stands for

a. System Twisted Pair

b. **Shielded Twisted Pair**

c. System Twisted Panel

d. Subscriber Twisted Protocol

114. UTP has been proved to perform at very high data rates _____ over short distances

a. 50Mbps

b. **100Mbps**

c. 150Mbps

d. 200Mbps

115. 10BASET(twisted pair Ethernet) uses _____

a. Cat 3

b. Cat 4

c. 5 UTP

d. **All of these**

116. Ethernet Specifications

	10Base5	10Base2	10BaseT
Transmission speed	10Mbps	10Mbps	10Mbps
Transmission medium	Coaxial cable	Coaxial cable	UTP Cat 3,4,5
Maximum segment length	500 metre	185 metre	100 metre
Maximum node/segment	100	30	-
Minimum length between node	2.5 metre	2.5 metre	-
Repeaters/Series	4	4	4
Maximum network length	2500 metre	925 metre	500 metre

117. The two general types of token passing schemes are

a. Token ring

b. Token bus

c. **Both a & b**

d. None of these

118. A DQDB(Distributed Queue Dual Bus) provides service over cable interface for

a. LAN

b. **MAN**

c. WAN

d. All of these

e.

119. The DQDB supports _____ based on cell switching technology similar to Asynchronous Transfer Mode(ATM)

a. Data

b. Voice

c. Video transmission

d. **All of these**

120. The Asynchronous Transfer Mode(ATM) is an _____ for cell relay

a. **ITU-TSS(International Telecommunication Union-Telecommunication Standardization Sector)**

b. TIU-ESS

c. PTU-DSS

d. None of these

121. The ATM networks are

a. Connection-less service

b. **Connection oriented service**

c. Both a & b

d. None of these

122. The ATM cell has a fixed length of

a. 51bytes

b. 62bytes

c. **53bytes**

d. 63bytes

123. The cell is broken into the two main sections called

a. Header

b. Payload

c. **Both a & b**

d. None of these

124. Which sections of cell carries the actual information(voice, data or video)

a. Header

b. **Payload(48bytes)**

c. Both a & b

d. None of these

125. Which sections of cell is the addressing mechanism

a. **Header(5bytes)**
b. Payload(48bytes)
c. Both a & b
d. None of these
e.

126. The disadvantage of DQDB is to have

a. **Fluctuating data rate**
b. High bandwidth
c. High susceptibility to error
d. Fixed bandwidth distribution

127. The frame format of DQDB are

a. Header
b. ST(Segment Type)
c. MID(Message Identifier)
d. Information
e. LEN(Data Length)
f. CRC(Cyclic Redundancy Check)
g. **All of these**

128. GPS stands for

a. Global Partition System
b. General Partition System
c. **Global Positioning System**
d. General Positioning System

129. Which satellite communication involve a satellite relay station that is launched into a geostationary, geosynchronous, or geostatic orbit

a. Temporary
b. **Contemporary**
c. Permanent
d. None of these
e.

130. The contemporary satellite communication launched into a

a. Geostationary orbit
b. Geosynchronous orbit
c. Geostatic orbit
d. **All of these**

131. The contemporary satellite communication are called

a. **Geostationary satellite**

b. Geostatic satellite
c. Geosynchronous satellite
d. All of these

132. In case of satellite communication two different frequencies are used as carrier frequency to avoid interference b/w incoming and outgoing signals are
a. Uplink frequency
b. Downlink frequency
c. **Both a & b**
d. None of these

133. Which frequency is used to transmit signal from the earth station to satellite
a. **Uplink frequency**
b. Downlink frequency
c. Broadcast
d. None of these
e.

134. Which frequency is used to transmit signal from the satellite to earth station
a. Uplink frequency
b. **Downlink frequency**
c. Broadcast
d. None of these
e.

135. In which manner, satellite can serve a point-to-multipoint network requirement through a single uplink station and multiple downlink stations
a. Uplink frequency
b. Downlink frequency
c. **Broadcast**
d. None of these

136. The general properties of satellite communication_____
a. Each signal travel 36,000 km in each direction
b. The cost of satellite communication is quite high
c. Security must be imposed through encryption
d. Satellite provides increment in bandwidth
e. Satellite provides extensive error detection and correction capabilities
f. **All of these**

137. TDMA stands for
a. Time Division Multiplexing Access
b. Time Dynamically Multiple Access
c. **Time Division Multiple Access**
d. Time Division Multiple Assigning

138. The most commonly used satellite access schemes are
   a. TDM/TDMA
   b. Fixed assigned TDMA
   c. Slotted ALOHA
   d. Dynamic reservation
   e. **All of these**

139. The VSAT stands for
   a. Very Small Accessing Terminal
   b. Very Small Access Topology
   c. **Very Small Aperture Terminal**
   d. None of these

140. The VSAT technology is based on the
   a. Wired satellite technology
   b. **Wireless satellite technology**
   c. Both a & b
   d. None of these

141. The VSAT networks offer value added satellite based services capable of supporting the
   a. Internet
   b. Data
   c. Satellite based video
   d. Audio LAN
   e. Voice or fax communication
   f. Provide powerful, dependable, private and public network comm^{n} solutions
   g. **All of these**

142. The VSAT system operates in two different bands named
   a. Ku-band
   b. C-band
   c. **Both a & b**
   d. None of these
   e.

143. The VSAT system operates under C-band frequency are
   a. 5.925to 6.425 GHz
   b. 3.700to 4.200GHz
   c. **Both a & b**
   d. None of these

144. The VSAT system operates under Ext-Cband frequency are
   a. 6.725 to 7.025GHz
   b. 4.500 to 4.800GHz
   c. **Both a & b**

d. None of these

e.

145. The VSAT system operates under Ku-Band 1 frequency are

a. 4.000 to 14.500GHz

b. 10.950 to 11.700GHz

c. **Both a & b**

d. None of these

146. The Ku-band networks are commonly used in

a. **Europe and North America**

b. Asia and Africa

c. Latin America

d. Both a & b

147. The C-band networks are commonly used in

a. Europe and North America

b. Asia and Africa

c. Latin America

d. **Both b & c**

148. Which band of frequencies require the large VSAT antenna

a. Ku-band

b. **C-band**

c. Both a & b

d. None of these

149. Which band of frequencies require the smaller VSAT antenna

a. **Ku-band**

b. C-band

c. Both a & b

d. None of these

e.

150. The components of VSAT network are

a. Master earth station

b. Remote earth station

c. Satellite

d. **All of these**

151. The first component-master earth station is also known as

a. **Central hub station**

b. Central satellite

c. Backbone

d. All of these

152. The master earth station has a large _____ meter antenna

a. 3
b. **6**
c. 5
d. 4

153. The hub earth station consists of
a. Radio frequency(RF)
b. Intermediate frequency(IF)
c. Base-band equipment
d. **All of these**

154. The RF equipment consists of the following sub-systems are
a. Antenna
b. Low noise amplifier(LNA)
c. Down converter, up converter
d. High-power amplifier
e. **All of these**

155. The IF and base-band equipment consists of
a. IF combiner/divider
b. Modulator and demodulator
c. Customer equipment interface
d. Processing equipments
e. **All of these**

156. The customer equipment interface unit provides the interface to the
a. Customer host equipment
b. Protocol emulation
c. **Both a & b**
d. None of these

157. The remote earth station of VSAT comprises of
a. Outdoor unit(ODU)
b. Indoor unit(IDU)
c. Inter-facility link(IFL)
d. **All of these**

158. The outdoor unit is generally installed in the
a. Ground
b. Indoor unit
c. **Both a & b**
d. None of these

159. The VSAT outdoor unit consists of
a. Standard 1.8 meter offset feed antenna
b. Solid-state amplifier(SSPA)

c. Low Noise Amplifier(LNA)
d. Feed horn
e. **All of these**

160. The indoor unit functions as a
a. Amplifier
b. **Modem**
c. PCs
d. None of these

---

1. Data can be either
   a. Images
   b. Numbers
   c. Words
   d. **All of these**
2. The word 'Data' is derived from
   a. **Latin**
   b. Contextual
   c. DB
   d. None of these
3. How many types of data are
   a. 1
   b. **2**
   c. 3
   d. 4
4. The types of data are
   a. Qualitative
   b. Quantitative
   c. **Both a & b**
   d. None of these
5. Data are taken as _____ level of abstraction
   a. Highest

b. Middle

c. **Lowest**

d. None of these

6. Information are taken as _____ level of abstraction

a. Highest

b. **Middle**

c. Lowest

d. None of these

7. Knowledge are taken as _____ level of abstraction

a. **Highest**

b. Middle

c. Lowest

d. None of these

8. The quantitative data is expressed in

a. **Numerical form**

b. Non-numerical form

c. Both a & b

d. None of these

9. The qualitative data is expressed in

a. Numerical form

b. **Non-numerical form**

c. Both a & b

d. None of these

10. The qualitative data may be

a. **Things**

b. Words

c. Text

d. None of these

11. Which type of data is hard, rigorous, credible and scientific

a. Qualitative data

b. **Quantitative data**

c. Both a & b

d. None of these

12.Which data are rich, poor, tall, short, good, bad, better

a. **Qualitative data**

b. Quantitative data

c. Both a & b

d. None of these

13.Data type is thought of as a set of

a. Values

b. Operations on values

c. **Both a & b**

d. None of these

14.Data type as defined in programming language are

a. Integers

b. Floating-point numbers

c. Characters

d. Alphanumeric strings

e. **All of these**

15. The smallest addressable unit of data is defined as a group of ___ bits is known as a byte:

a. 4

b. **8**

c. 16

d. 32

16.The unit processed by machine code instructions is called a _____

a. **Word**

b. Number

c. Bit

d. Byte

17. The machine code unit may be _____ depending on the computer architecture:

a. 8 bit or 16 bit

b. 16 bit or 32 bit

c. **32 bit or 64 bit**

d. 64bit or 128 bit

18.In a 32-bit word it can represent unsigned integer values ranging from

a. **0 to $2^{32}-1$**

b. -2^{31} to $2^{31}-1$

c. 0 to $2^{64}-1$

d. 0 to $2^{31}-1$

19.In a 32-bit word it can represent signed integer values ranging from

a. 0 to $2^{32}-1$

b. **-2^{31} to $2^{31}-1$**

c. 2^{31} to $2^{64}-1$

d. 0 to $2^{31}-1$

20.A signal is an

a. Electric current

b. Electromagnetic field

c. Electronic current

d. **Both a & b**

21.A signal is used to convey data from

a. One place to another place

b. One system to another system

c. **Both a & b**

d. None of these

22.In case of PSTN, signaling between

a. A telephone user
b. The telephone network
c. **Both a & b**
d. None of these

23.A channel is defined as a path between

24.The path of channel may be

a. Physical
b. Logical
c. **Both a & b**
d. None of these

25.The path of channel may be

a. Hard wired
b. Wireless
c. **Both a & b**
d. None of these

26.Noise of channel noise_____ the quality of information and data

a. Upgrades
b. **Degrades**
c. Both a & b
d. None of these

27.In channel , the information may not be

a. Reproduced
b. Reach the receiver at all
c. **Both a & b**
d. None of these

28.In channel noise, data by affecting communications and files of all types including

a. Images
b. Audio
c. Text
d. Programs
e. Telemetry
f. **All of these**

29.Information and data may be treated as a signal in either

a. Electrical form
b. Electromagnetic form
c. **Both a & b**
d. None of these

30.The noise may be classified as _____ based upon the sources

a. Internal
b. External
c. **Both a & b**
d. None of these

31.The noise generated because of electricity or atmospheric disturbances is of the order of

a. **300kHz**
b. 300MHz
c. 300GHz
d. 300Hz

32.The noise generated which is lower than the high frequency range of ____ and may have more interface with the signal of information.

a. **300MHz**
b. 300kHz
c. 300GHz
d. 300Hz

33.External noise is generally picked up from electrical appliances existing _____

a. In the vicinity

b. From the atmosphere

c. From electrical transformers

d. Also from outer space

e. **All of these**

34.Internal noise is generated in the

a. Channels

b. Receivers

c. Transmitter

d. **Both a & b**

35.Internal noise is less dependent on frequency, but has a significant effect at:

a. **Higher frequency**

b. Low frequency

c. Middle frequency

d. No frequency

36.External noise has _____ effect on higher frequencies

a. More

b. **Less**

c. No

d. None of these

37.Internal noise is fairly low in case of

a. Digital signal processing

b. Fiber optics technology

c. **Both a & b**

d. None of these

38.Noise is measured in terms of the signal to noise ratio

a. S/N

b. SNR

c. S/M

d. **Both a & b**

39.The unit of noise is

a. **decibels**

b. Hertz

c. Micron

d. bits per second

e.

40._____ defined as the size of the range of frequencies that can be transmitted through a channel

a. **Channel Bandwidth**

b. Channel Data Transmission Rate

c. Channel noise

d. Channel capacity

41.In other words channel bandwidth may be define it as the volume of information per unit time that a _____

a. Computer

b. Person

c. Transmission medium can handle

d. **All of these**

42.Channel Bandwidth is measured in

a. decibels

b. **Hertz**

c. Micron

d. bits per second

43.Bandwidth is expressed as data speed in _____ digital systems:

a. decibels

b. Hertz

c. Micron

d. **bits per second**

44.In analog systems, bandwidth is expressed as the difference between the

a. Highest frequency

b. Lowest frequency

c. **Both a & b**

d. None of these

45._____ is determined by the maximum number of bits that can be transmitted per unit time through the physical medium.

a. Channel Bandwidth

b. **Channel Data Transmission Rate**

c. Channel noise

d. Channel capacity

46.Channel Data Transmission Rate is measured in

a. decibels

b. Hertz

c. Micron

d. **bits per second**

47.Which gave the maximum data rate of a noiseless channel

a. **H.Nyquist in 1924**

b. H.Nyquist in 1934

c. Peter Sain in 1932

d. None of these

48.Channel latency depends on the

a. Signal propagation speed

b. Media characteristics

c. Transmission distance

d. **All of these**

49._____ is the amount of time that is needed for the information to propagate from the source to destination through the channel.

a.

b. Propagation time

c. Channel Latency

d. Channel Utilization

e. **Both a & b**

50.Throughput may be defined as the number of _____ through a data communication system over a period of time:

a. bits

b. characters

c. blocks passing

d. **All of these**

51._____ may be defined as range of frequencies assigned to a channel

a. **Bandwidth**

b. Channel noise

c. Bit rate

d. Channel latency

52.Higher the Bandwidth,_____ will be the data transmission rate or throughput

a. **More**

b. Less

c. Medium

d. None of these

53.In transmission of a signal, the range of carrier frequencies depends on the

a. Nature of medium

b. Requirement of the applications supported

c. Nature of distance

d. **Both a & b**

54._____ may be defined as the range of frequencies being supported by a particular transmission medium

a. Frequency

b. **Frequency spectrum**

c. Carrier frequency

d. None of these

55.The actual range of frequencies supporting a given communication is known as

a. Baud rate
b. **Pass band**
c. Band data
d. Pass

56.Higher frequency signal offers _____ bandwidth

a. Lesser
b. **Greater**
c. Medium
d. None of these

57._____ refers to the minimum or maximum spatial separation between devices over a link, in the context of a complete, end to end circuit

a. Bandwidth
b. Channel
c. **Distance**
d. None of these

58._____ is the rate over network speed which is used to detect errors while transmitting data

a. **Bit rate**
b. Data rate
c. Baud rate
d. Pass band

59. What is the frequency range of gamma and cosmic rays

a. >1008GHz
b. <1018GHz
c. **>1018GHz**
d. <1008GHz

60.The most popular method for detecting errors in bit rate is _____ a parity bit alongside the data bit for a character

a. Deleting

b. **Inserting**

c. Modifying

d. Updating

61.TDM means

a. Total division multiplex

b. Time division modem

c. Time detect modem

d. **Time division multiplex**

62.FEC means

a. Formal Error Checking

b. **Forward Error Checking**

c. Forward Error Character

d. Formal Error Character

63.The net bit rate is also known as

a. Pass bit rate

b. Data bit rate

c. **Useful bit rate**

d. Network bit rate

64.The incorrect bit rate is also known as

a. Data bit rate

b. Useful bit rate

c. Network bit rate

d. **Parity bit**

65.The example of net bit rate are

a. TDM

b. FEC

c. Framing Bit

d. **All of these**

66.The speed of connection of bit rate is determined by

a. TDM

b. **FEC**

c. Framing Bit

d. All of these

67.The FEC is also refers to

a. Logical layer net bit rate

b. **Physical layer net bit rate**

c. Prefix layer net bit rate

d. None of these

68.The size of the multimedia file is the product of _____

a. **Bit rate in bytes**

b. Bit rate in kilobytes

c. Bit rate in gigabytes

d. None of these

69.The size of the multimedia file is the length of recording in seconds divided by:

a. 4

b. **8**

c. 12

d. 16

e.

70.The fundamentals of Bit rate:

a. The sample uses different number of bits

b. The data is encoded by different number of bits

c. The material is sampled at different frequencies

d. The information is digitally compressed by different algorithms

e. **All of these**

71.The bit rate is _____ for a specific network

a. Fixed

b. Uniform

c. **Fixed and Uniform**

d. None of these

72.The gross bit rate is the number of bits transmitted

a. **per second by an ideal transmitter**

b. per second by an ideal transistor

c. per min by an ideal transmitter

d. per min by an ideal transistor

73.The bit rate could be as high as

a. 1Gbit/s

b. **1Mbit/s**

c. 1Mbyte/s

d. 1Gbyte/s

74.Bit rate is used to calculate the speed of time to access the network

a. **Without getting error frames**

b. Getting error frames

c. Without getting error format

d. Getting error format

75.Bit rate is always _____ to the baud rate

a. Equal

b. More

c. **Equal or more**

d. None of these

76.Baud rate determines the bandwidth required to transmit the _____

a. **Signal**

b. Data

c. Symbol

d. None of these

77.Lesser bandwidth is required to move these signal units with _____ bits for an efficient system

a. Less

b. **Large**

c. Equal

d. None of these

78.A character set was designed by

a. **Jean-Maurice-Emile Baudot in 1874**

b. Jean-Maurice-Emile Baudot in 1885

c. John-Maurice-Emile Baudot in 1864

d. John-Merry-Emile Baudot in 1894

79.Character set system was implemented using keyboard having _____

a. 8-key

b. 6-key

c. **5-key**

d. 9-key

80.Who modified system using keyboard using 5-key

a. **Donald Murray in 1901**

b. Donald Merry in 1902

c. Donald Duck in 1904

d. Donald Murray in 1902

81.Donald Murray modification took a shape as

a. **International Telegraph Alphabet 1**

b. International Telephone Alphabet 1

c. International Television Alphabet 1

d. International Telegram Alphabet 1

82.International Telegraph Alphabet 1 was further developed to

a. ITA 1

b. **ITA 2**

c. ITA 3

d. ITA 4

83.In character code system, a 5-bit code is

a. 00011

b. 00101

c. **00010**

d. 10101

84.A 5-bit code is signified a

a. **Line Feed**

b. Light Feed

c. Line Format

d. None of these

85.The basic idea behind coding was really workable if number of characters it had to handle do not require more than

a. 8 characters

b. 16 characters

c. **32 characters**

d. 64 characters

86.For covering all the characters of alphabet with special

a. Characters

b. Punctuation marks

c. Other control characters

d. Other coding technique was needed

e. **All of these**

87.Encoding is done for data

a. **Inside computer**

b. Outside computer

c. Both a & b

d. None of these

88.The following data techniques are used

a. Binary Coded Decimal(BCD)

b. Extended Binary Coded Decimal Interchange Code(EBCDIC)

c. American Standard Code for Information Interchange(ASCII)

d. Unicode

e. Manchester Code

f. Differential Manchester Encoding(DME)

g. Return to Zero(RZ)

h. Non Return to Zero(NRZ)

i. Non Return to Zero Invertive(NRZ-I)

j. MLT-3

k. 4B/5B

l. 5B/6B

m. **All of these**

89.Unicode Examples are

a. UTF-7

b. UTF-8

c. UTF-16

d. UTF-32

e. UTF-EBCDIC

f. **All of these**

90.Binary Coded Decimal system makes use of a series of _____ to represent a decimal number

a. **4**

b. 8

c. 16

d. 32

e.

91.Nibble is known as series of ____

a. 8 bits

b. **4 bits**

c. 16 bits

d. 32 bits

92.Extended Binary Coded Decimal Interchange Code is developed by

a. **Parallel to ASCII, IBM in 1964**

b. Parallel to ASCII, IBM in 1974

c. Parallel to ASCII, IBM in 1962

d. Parallel to ASCII, IBM in 1964

93.EBCDIC is a coding system that uses

a. **8 bit**

b. 4 bit

c. 16 bit

d. 32 bit

94.A byte in EBCDIC system of coding contained ___ nibbles

a. 3

b. 4

c. **2**

d. 6

95.First nibble is known as

a. **Zone**

b. Digit

c. Byte

d. Bit

96.Second nibble is known as

a. Zone

b. **Digit**

c. Byte

d. Bit

97.First nibble represents category to which the _____

a. **Characters belong**

b. Integers belong

c. String belong

d. None of these

98.ASCII is a ___ bit coding for representing characters of English alphabets

a. 64 bit

b. **7 bit**

c. 16 bit

d. 32 bit

e.

99.ASCII was published in

a. 1964

b. 1965

c. **1963**

d. 1966

100.Unicode was developed by

a. **Unicode Consortium**

b. Unique Consortium

c. Unicode Constant

d. None of these

101.Unicode is appeared in

a. 1992

b. **1991**

c. 1993

d. 1994

102.The first version of Unicode

a. **Unicode 1.0**

b. Unicode 2.0

c. Unicode 3.0

d. None of these

103.Unicode version 5.0 appeared in

a. 2005

b. **2006**

c. 2007

d. 2004

104.In Unicode there were codes for representing characters and their basic graphical representation are known as

a. Graphical

b. **Graphemes**

c. Graphs

d. None of these

105.The first 256 code points belong to _____ for conversion to Roman Text

a. **ISO 5589-1**

b. ISO 5569-1

c. ISO 5579-1

d. ISO 5559-1

106.Unicode mapping methods are of two types, namely are

a. UTF(Unicode Transformation Format)

b. UCS(Unicode Character Set)

c. **Both a & b**

d. None of these

107.Every communication channel has a _____ which is defined as the frequency range

a. Channel

b. **Bandwidth**

c. Carrier

d. Data rate

108.The bandwidth is a _____ property of a transmission medium

a. **Physical**

b. Logical

c. Both a & b

d. None of these

109.A telephone wire has bandwidth of _____ for short distance

a. **1M**

b. 2M

c. 3M

d. 4M

110.Data rate that can be achieved using a channel depends on the _____ of a channel

a. Frequency

b. **Bandwidth**

c. Data rate

d. Capacity

111.The undesirable waveform is known as

a. Anti-Aliasing

b. **Aliasing**

c. Channel

d. Bandwidth

112.The word PCM stands for

a. Primary code mapping

b. **Pulse code modulation**

c. Primary channel modulation

d. None of these

113.How many way to communicate, display, store or manipulate information

a. 1

b. **2**

c. 3

d. 4

114.The way to communicate, display, store or manipulate information are

a. Analog

b. Digital

c. **Both a & b**

d. None of these

115.The analog form of electronic communication represents the information in

a. **Continuous electromagnetic wave form**

b. Discrete form

c. Both a & b

d. None of these

116.The digital form of electronic communication represents the information in

a. Continuous electromagnetic wave form

b. **Discrete form**

c. Both a & b

d. None of these

117.The word AM stands for

a. Analog Modulation

b. Analog Manipulation

c. **Amplitude Modulation**

d. Analog Modeling

118.The word FM stands for

a. **Frequency Modulation**

b. Fourier Manipulation

c. Frequency Manipulation

d. Frequency Modeling

119.The bandwidth of voice grade channel is approximately

a. **4000Hz**

b. 5000Hz

c. 6000Hz

d. 3000Hz

120.The bandwidth of CATV video channel is approximately

a. 2MHz

b. 4MHz

c. **6MHz**

d. 8MHz

121.The advantages of FM over AM are

a. Improved signal to noise ratio(about 25dB)

b. Less radiated power

c. Well defined service areas for given transmitter power

d. Smaller geographical interference between neighboring stations

e. **All of these**

122. The disadvantages of FM are

a. Much more bandwidth(as much as 20 times as much)
b. More Complicated receiver
c. More complicated transmitter
d. **All of these**

123.Computer are_____ in nature

a. Analog
b. **Digital**
c. Both a & b
d. None of these

124.SS7 means

a. Signal Source7
b. Signaling source7
c. **Signaling system7**
d. Signal system7

125.SS7 is a

a. System
b. Source
c. **Protocol**
d. None of these

126.The PSTN provides a _____ path between the destination and source

a. Logical
b. **Physical**
c. Both a & b
d. None of these

127.The functions of SS7 are

a. Controlling network
b. Set up and tear down the call
c. Handles the routines decision
d. **All of these**

128.SS7 uses voice switches known as

a. SSWs(Service Switching websites)
b. **SSPs(Service Switching Points)**
c. SSNs(Service Switching Networks)
d. SSDs(Service Switching Data)

129.SSPs uses Query Service Control Point (SCP) database using Packet switches called

a. **Signal Transfer Points(STPs)**
b. SSWs(Service Switching websites)
c. SSPs(Service Switching Points)
d. SSNs(Service Switching Networks)

130._____ refers to correct detection by receiving equipment at the beginning and end of data that was sent from sending equipment

a. Asynchronous
b. Synchronous
c. **Synchronization**
d. None of these

131.Synchronous systems can be classified into three categories:

a. Asynchronous systems
b. Character synchronous systems
c. Flag Synchronous systems
d. **All of these**

132.Asynchronous transmission is a _____ method of transmission in which a sign bit is added to the beginning:

a. Start
b. Stop
c. **Start-stop**
d. None of these

133.Manchester is also known as

a. **MPE(Manchester Phase Encoding)**
b. MPD(Manchester Phase Data)

c. MPN(Manchester Phase Network)

d. MPW(Manchester Phase Website)

134.Manchester coding is used in telecommunication by

a. Encoding standard 802.3

b. **Ethernet standard 802.3**

c. Ethernet standard 805.3

d. Encoding standard 805.3

135. For 10Mbps Ethernet carrier frequency is

a. 20MHz

b. 15MHz

c. **10MHz**

d. 5MHz

e.

136.The another name of DME(Differential Manchester Encoding)

a. **CDP(Conditioned Diphase Encoding)**

b. MPE(Manchester Phase Encoding)

c. SSWs(Service Switching websites)

d. SSPs(Service Switching Points)

137.In DME, logical values are indicated by _____ of transitions

a. Absence

b. Presence

c. **Both a & b**

d. None of these

138.In RZ, zero between each bit signifies a _____

a. Rest Condition

b. Neutral Point

c. **Both a & b**

d. None of these

139.The NRZ-pulses contain ____ energy in comparison to that of a RZ code

a. less

b. **more**

c. either less or more

d. none of these

140.NRZ has no ___ state

a. **Rest**

b. Zero

c. Neutral

d. None of these

141.MLT-3 is an encoding scheme in which ____ voltage levels are used

a. 2

b. **3**

c. 4

d. 5

142.Due to four transitions the maximum fundamental frequency requirement is reduced to ____

a. **One-fourth of the baud rate**

b. One-third of the baud rate

c. One-half of the baud rate

d. None of these

143.Who specified the committee scheme of coding

a. ANSI X3T9.7

b. ANSI X5T9.6

c. **ANSI X3T9.5**

d. ANSI X6T9.5

144.FDDI uses ANSI X3T9.5 for obtaining 100Mbps from a signal of _____

a. 32.25MHz

b. **31.25MHz**

c. 31.24MHz

d. 32.26MHz

145.4B/5B encoding scheme is also known as

a. **Block coding**

b. Bit coding

c. Byte coding

d. Block character

146.In 4B/5B scheme, we need a 125MHz clock for a signal of

a. 1000MHz

b. **100MHz**

c. 10MHz

d. 99MHz

147.The 5B/6B scheme encodes the scrambled 5-bit data pattern into predetermined _____ bit symbol

a. 5

b. 4

c. **6**

d. 3

148.Modulation is the technique used to translate

a. Information from source to destination

b. **Low frequency to higher frequency**

c. Source to higher frequency

d. Low frequency to destination

149.The low frequency signal are

a. Audio

b. Video

c. Music

d. Data

e. **All of these**

150.The modulation/demodulation is a

a. Linear process

b. **Non-linear process**

c. Both a & b

d. None of these

151.In character synchronous system ,_____ are added

a. **Special character**

b. Start bit

c. Stop bit

d. None of these

152.Special character are called

a. STN

b. **SYN**

c. SBN

d. SRN

153.The character string of the SYN character is

a. 01001111

b. 10001110

c. **00010110**

d. 00110011

154.The character synchronous system receives _____ as one character

a. 2bit

b. 4bit

c. **8bit**

d. 16bit

155.In the 4B/5B we need a 125MHz clock for a signal of

a. **100MHz**

b. 10MHz

c. 1000MHz

d. 10000MHz

156.5B/6B creates a data pattern that is placed with equal numbers of

a. 1

b. 0

c. **Both a & b**

d. None of these

157.How many encoding techniques we used today

a. 10

b. **100**

c. 1000

d. 10000

158.Modulation is the technique used to translate low-frequency(base-band) signals like _____ to a higher frequency

a. Audio

b. Music

c. Video

d. Data

e. **All of these**

159.Modulation/ demodulation is a non linear process where two different sinusoids are _____

a. Addition

b. Subtraction

c. **Multiplied**

d. Division

160.Angular frequency id defined as _____ the frequency of carrier signal

a. Once

b. **Twice**

c. Thrice

d. None of these

161.The frequencies that comprise the message (base band) are translated into a _____

range of frequencies

a. Lower
b. **Higher**
c. Zero
d. None of these

162.Modulation also reduces the size of antenna for higher frequencies with _____ frequency

a. Lower
b. **Greater**
c. Middle
d. None of these

163.The non-linearity results in several _____ harmonics

a. Even
b. Odd
c. **Both a & b**
d. None of these

164.Harmonics are the _____ of the frequency, that is the message frequency

a. Addition
b. Subtraction
c. **Multiply**
d. Division

165.The carrier frequency may be a _____

a. Radio wave
b. Light wave
c. **Both a & b**
d. None of these

166.The amplitude of carrier frequency _____ in accordance with the modulated signal

a. Can not change
b. **Change**
c. Either change or not

d. None of these

167. The frequency of the carrier _____and we get a complex wave

a. **does not changed**

b. Change

c. Either change or not

d. None of these

168.For demodulation, it needs the carrier frequency to be generated or derived at the receiving location known as

a. **DSB-SC**

b. DBS-CS

c. BDS-SC

d. BSD-CS

169.The full form of DSB-SC

a. Direct Side Band-Suppressed Carrier

b. Direct Side Base-Suppressed Carrier

c. **Double Side Band-Suppressed Carrier**

d. Double Slide Band-Suppressed Carrier

170.One more kind of analog modulation is called

a. **Vestigial side band modulation**

b. Vestigial side base modulation

c. Vestigial slide band modulation

d. Vestigial slide base modulation

171.Pulse code modulation is a method by which an audio signals are represented as

a. Direct data

b. **Digital data**

c. Device data

d. None of these

172.Pulse Code Modulation(PCM) requires bandwidth of _____

a. 32Kbps

b. **64Kbps**

c. 128Kbps

d. 256Kbps

173.PCM is a coding scheme used in digital communication because of _____ sensitive to noise

a. **Less**

b. Middle

c. High

d. None of these

174.In digital signal the main source of noise is _____, which introduces as the finite number of quantization levels during the conversion to PCM code

a. **Quantization noise**

b. Equalization noise

c. Digital noise

d. None of these

175.The main parameters in determining the quality of a PCM system are the

a. Dynamic range

b. Signal-to-Noise Ratio(SNR)

c. **Both a & b**

d. None of these

176.The maximum error occurs between the

a. Original level

b. Quantized level

c. **Both a & b**

d. None of these

177.The maximum error occurs when the original level falls exactly halfway between _____ quantized levels

a. **2**

b. 3

c. 4

d. 1

178.The dynamic range is the ratio of the

a. Largest possible signal magnitude
b. Smallest possible signal magnitude
c. **Both a & b**
d. None of these

179.For a six bits system the dynamic range will be approximately equal to ___

a. 34dB
b. **36dB**
c. 40dB
d. 38dB

180.In dynamic range, the largest voltage amplitude is _____ the smallest voltage amplitude

a. 32times
b. **64times**
c. 125times
d. 256times

181.The disadvantages associated with the Delta Modulation PCM is

a. Slope overload
b. Granular noise
c. **Both a & b**
d. None of these

182.Communication channels like _____ are usually analog media

a. **Telephone lines**
b. Television lines
c. Digital lines
d. None of these

183.Which is a bandwidth-limited channel

a. Digital media
b. **Analog media**
c. Both a & b

d. None of these

184.In the case of telephone lines, the usable bandwidth falls in the range of _____

a. 300Hz to 3000Hz

b. **300Hz to 3300Hz**

c. 30Hz to 3300Hz

d. 33Hz to 3300Hz

185.Digital information signals have the shape of pulse and represented by

a. 0

b. 1

c. **both a & b**

d. none of these

186.The following types of modulation are used in modems

a. ASK–Amplitude Shift Keying

b. FSK–Frequency Shifted Keying

c. PSK–Phase Shift Keying

d. DPSK–Differential Phase Shift Keying

e. BPSK–Binary Phase Shift Keying

f. QPSK–Quadrature Phase Shifted Keying

g. QAM– Quadrature Amplitude Modulation

h. **All of these**

187.The main advantage of this technique, it is easy to such

a. Signals

b. Also to detect them

c. **Both a & b**

d. None of these

188.Telephone lines limit amplitude changes to some _____ changes per second

a. **3000**

b. 3300

c. 3100

d. 3330

189.In the Frequency Shift keying, the frequency of the carrier signal is changed according to the data

a. Modulation

b. **Data**

c. Signals

d. None of these

190.In the Phase Shift Keying method a sine wave is transmitted and the phase of the sine wave carries the _____

a. Analog data

b. **Digital data**

c. Signal data

d. None of these

191.For a 0, a __ degrees phase sine wave is transmitted

a. **0**

b. 45

c. 90

d. 180

192.For a 1, a __ degrees phase sine wave is transmitted

a. 0

b. 45

c. 90

d. **180**

193.A sub method of the phase modulation is

a. **Differential phase modulation**

b. Direct phase modulation

c. Double phase modulation

d. None of these

194.Differential phase modulation technique is also called

a. Amplitude Shift Keying

b. **Phase Shift Keying**

c. Frequency Shift Keying

d. None of these

195.In the differential phase shift keying, For a 0 the modem shifts the phase of each succeeding signal in a certain number of degrees

a. 0

b. 45

c. **90**

d. 180

196.In the differential phase shift keying, For a 1 the modem shifts the phase of each succeeding signal and a different certain number of degrees

a. 0

b. 90

c. 180

d. **270**

197.In binary phase shift keying, the case of 4 different phase shifts, where each symbol represents ____, the modulation technique is called quadrature PSK(QPSK)

a. **2 bits**

b. 4 bits

c. 8 bits

d. 16 bits

198.In binary phase shift keying, the case of 8 different phase shifts, where each symbol represents ____, the modulation technique is called

a. QPSK

b. **8PSK**

c. 8QAM

d. 8FSK

199.Binary Phase Shift Keying is measured in

a. Decibel

b. **Baud**

c. Hertz

d. bits per second

200.In QPSK, the four angle are usually out of phase by

a. 0
b. 45
c. **90**
d. 180

201. The AM is considered as a

a. **Linear process**
b. Non-linear process
c. Both a & b
d. None of these

202.The FM is considered as a

a. Linear process
b. **Non-linear process**
c. Both a & b
d. None of these

203.The phase modulation is similar to the

a. Amplitude Modulation
b. **Frequency Modulation**
c. Angle Modulation
d. Pulse Code Modulation

204.In PM, _____ of the carrier wave changes

a. Frequency
b. **Phase**
c. Both a & b
d. None of these
e.

205.PCM requires bandwidth of

a. 21Kbps
b. 24Kbps
c. **64Kbps**

d. 65Kbps

206.In data communication using computers ,_____ signal are normally converted into PCM

a. **Analog**

b. Digital

c. Both a & b

d. None of these

207.The PCM is a coding scheme used in _____ communication because of less sensitive to noise

a. Analog

b. **Digital**

c. Both a &b

d. None of these

208._____ is a process where multiple analog message signals or digital data streams are combined into one medium over a shared medium

a. **Multiplexing**

b. Modulation

c. Encoding technique

d. De-multiplexing

209. The various ways to multiplex are

a. Frequency Division Multiplexing(FDM)

b. Time Division Multiplexing(TDM)

c. Code Division Multiplexing(CDM)

d. Wavelength Division Multiplexing(WDM)

e. **All of these**

210.In which , Multiple channels are combined onto a single aggregate signal for transmission

a. **Frequency Division Multiplexing(FDM)**

b. Time Division Multiplexing(TDM)

c. Code Division Multiplexing(CDM)

d. Wavelength Division Multiplexing(WDM)

211.In FDM , channels are separated in the aggregate by their

a. Bandwidth
b. Signal
c. **Frequency**
d. None of these

212._____ was the foremost multiplexing scheme to have the benefits of wide scale network deployment and till today, such systems are still in use and are used with analog transmission

a. **Frequency Division Multiplexing(FDM)**
b. Time Division Multiplexing(TDM)
c. Code Division Multiplexing(CDM)
d. Wavelength Division Multiplexing(WDM)

213.The two alternative technologies of multiplexing for digital sources are

a. Frequency Division Multiplexing(FDM)
b. Time Division Multiplexing(TDM)
c. Code Division Multiplexing(CDM)
d. Wavelength Division Multiplexing(WDM)
e. **Both b & c**
f. Both a & b
g. Both c & d

214._____ provides a means for merging data from the varied sources into a single channel to support communication over a microwave system , satellite system or a telephone lines

a. Frequency Division Multiplexing(FDM)
b. **Time Division Multiplexing(TDM)**
c. Code Division Multiplexing(CDM)
d. Wavelength Division Multiplexing(WDM)

215.The TDM are implemented in two ways are

a. Synchronous TDM
b. Asynchronous TDM
c. **Both a & b**

d. None of these

e.

216.In which type of TDM , a single channel is divided into time slots and each transmitting device is assigned for least one of the time slots for its transmission

a. **Synchronous TDM**

b. Asynchronous TDM

c. Both a & b

d. None of these

217.The Asynchronous TDM is properly known as

a. **Statistical TDM**

b. Static TDM

c. Dynamic TDM

d. None of these

218.Which ways of Multiplex are more flexible

a. FDM

b. **TDM**

c. CDM

d. None of these

219.In which way of multiplex ,the whole amount for a certain amount of time is provided to the user and all user uses the same frequency but at different time

a. FDM

b. **TDM**

c. CDM

d. None of these

220.To overcome the inefficiency of standard TDM, a technique known as

a. CDM

b. FDM

c. **STDM**

d. CDMA

221.The word UHF means

a. Ultra -High –Form

b. Ultra –Half-Form

c. **Ultra- High-Frequency**

d. Ultra-Half-Frequency

222._____ may be defined as the form of multiplexing where the transmitter encodes the signal using a pseudo random sequence

a. **CDM**

b. FDM

c. STDM

d. CDMA

223.The number of different frequency per bit are called

a. Bit rate

b. Data rate

c. Baud rate

d. **Chip rate**

224.If one or more bits are transmitted at the same frequency are called

a. Frequency doping

b. **Frequency hopping**

c. Frequency hoping

d. Frequency hipping

225.The main disadvantage of CDM is

a. Protection from interference

b. Tapping as only the sender know the spreading code

c. Tapping as only the receiver know the spreading code

d. **All of these**

226.The Code Division Multiple Access(CDMA) was widely introduced in

a. 1963

b. **1989**

c. 1979

d. 1958

227.In CDMA system ,all user transmit in the _____ bandwidth simultaneously

a. Different
b. **Same**
c. Both a & b
d. None of these
e.

228.The spread spectrum technology of CDMA is _____ than TDMA

a. More secure
b. Provides higher transmission quality
c. **Both a & b**
d. None of these
e.

229.A CDMA call starts with a standard rate of _____ bits per second

a. 9500
b. 9200
c. 9300
d. **9600**

230.The code used with the signal for spreading have

a. Low cross-correlation values
b. Unique to every user
c. Higher transmission quality
d. **Both a & b**

231.In spread spectrum technique, a receiver is only capable of selecting the desired signal if it has the knowledge about the code of the intended

a. Receiver
b. **Transmitter**
c. Both a & b
d. Signal

232.The major advantage of spread spectrum technique may be enumerated as

a. Low power spectral density

b. Interference limited operation

c. Privacy due to unknown random codes

d. Reduction of multi path affects

e. **All of these**

233. The word FHSS stands for

a. **frequency hopping spread spectrum**

b. file hopping spread spectrum

c. file hiding spread spectrum

d. frequency hopping special spectrum

234. The word DSSS stands for

a. digital sequence spread spectrum

b. **direct sequence spread spectrum**

c. digital sequence special spectrum

d. direct signal spread spectrum

235.The pattern of switching from one channel to another channel is known as

a. Hipping

b. Hyping

c. Harping

d. **Hopping**

236._____ is best known spread spectrum technique in which a pseudo random noise code multiples the signal

a. FHSS

b. FCSS

c. **DSSS**

d. DHSS

237.A pseudo random noise code is a sequence of chips valued_____ with noise-like properties

a. -1 and1(polar)

b. 0 and 1(non-polar)

c. **Both a & b**

d. None of these

e.

238._____ time is the time spent on a channel with certain frequency

a. FDM

b. **Dwell**

c. Dowel

d. Dowry

e.

239.FHSS includes_____ technology

a. FDM

b. TDM

c. CDM

d. **Both a & b**

e.

240. Individual channels are

a. Data

b. Audio

c. Video or their combination

d. **All of these**

241._____ a multi-channel system in which a number of individuals channels are multiplexed for transmission

a. System

b. Carrier

c. **Carrier system**

d. None of these

242.T-carrier signaling scheme was developed by

a. **Bell Laboratory**

b. Hell Laboratory

c. Dull Laboratory

d. None of these

243. T1 standards is widely used in

a. Japan

b. North America

c. **Both a & b**

d. None of these

244.T-carrier was digital signal 1, DS1 or DS-1 which is known as

a. **T1**

b. E1

c. DS0

d. DS1

245.DS-1 conveys the meaning of

a. Direct Service-Level 1

b. **Digital Service-Level 1**

c. Double Service-Level 1

d. Digital Slide-Level 1

246.E1 signifies another carrier system that finds use outside

a. North America

b. Japan

c. South Korea

d. **All of these**

247.A DS1 circuit comprises _____ , each of 8 bits

a. **24 channels**

b. 26 channels

c. 28 channels

d. 30 channels

248.24 channels are also called

a. Timeslots

b. DS0

c. **Both a & b**

d. None of these

249.DS0 channel is a _____ that is multiplexed

a. 68Kbit/s
b. **64Kbit/s**
c. 62Kbit/s
d. 70Kbit/s

250.DS1 is full-duplex circuit in which the circuit does concurrent transmission and reception at a data rate of ___

a. 1.533Mbit/s
b. **1.544Mbit/s**
c. 1.566Mbit/s
d. 1.555Mbit/s

251.By sampling each 8-bit frame for 8000 times per second, total bandwidth achieved is _____

a. 1.537Kbit/s
b. **1.536Kbit/s**
c. 1.538Kbit/s
d. 1.539Kbit/s

252.Framing schemes are of two types:

a. Super Frame(SF)
b. Extended Super Frame(ESF)
c. **Both a & b**
d. None of these

253.Framing channel has been divided into two each with _____ in Super Frame

a. 2Kbit/s
b. 3Kbit/s
c. **4Kbit/s**
d. 6Kbit/s

254.There are _____ contiguous frames of 193-bit each in a Super Frame

a. 10
b. **12**

c. 14

d. 16

255.There are _____ contiguous frames of 193-bit each in a Extended Super Frame

a. 20

b. 22

c. **24**

d. 26

256.Framing channel has been divided into two each with _____ in Super frame

a. 2Kbit/s

b. **4Kbit/s**

c. 6Kbit/s

d. 8Kbit/s

257.One is used for alignment of _____

a. **Terminal frame**

b. Signaling frame

c. Super frame

d. Switching frame

e.

258.Second is used for alignment of _____

a. Terminal frame

b. **Signaling frame**

c. Super frame

d. Switching frame

e.

259.Alignment of terminal is carried out with frames having _____ in the super frame

a. Even-number

b. **Odd-number**

c. Prime-number

d. None of these

260.A frame having _____ in the super frame is used for signaling alignment of frame

a. **Even-number**

b. Odd-number

c. Prime-number

d. None of these

261.T1 is recognized by its original _____ line rate

a. 1.566Mbit/s

b. **1.544Mbit/s**

c. 1.555Mbit/s

d. 1.533Mbit/s

262.T1 used the encoding technique _____

a. **AMI**

b. LAN

c. DS1

d. CEPT

263.AMI means

a. Analog Memory Interchange

b. Alternate Memory Interchange

c. **Alternate Mark Inversion**

d. Analog Mark Interchange

264.AMI requires less

a. **Bandwidth**

b. Signal

c. Both a & b

d. None of these

265.CEPT means

a. Conference European of Postal Telecommunications

b. **European Conference of Postal and Telecommunications**

c. European Control of Postal Telecommunications

d. None of these

266.CEPT after ten years of launch of T1 system used _____ for framing known as European

E1

a. 2bits
b. 4bits
c. **8bits**
d. 16bits

267.An E1 carrier carries digital information at _____

a. 2.084Mbps
b. **2.048Mbps**
c. 2.044Mbps
d. 2.088Mbps

268.An E1 circuit has been divided into ____ time slots

a. 30
b. **32**
c. 34
d. 36

269.32 time slots implements an individual communication channel supporting a bit rate of _____

a. 60Kbps
b. 62Kbps
c. **64Kbps**
d. 66Kbps

270.An E1 frame has a total of _____

a. 128bits
b. **256bits**
c. 64bits
d. 192bits

271.Which is used to exchange information over the E1 carriers that connect remote zones

a. Protocols Frame Relay
b. Cell Relay
c. **Both a & b**

d. None of these

e.

272.CEPT revised and improved the technology adopted by

a. **T-carrier system**

b. E-carrier system

c. Both a & b

d. None of these

e.

273.Which was taken by International Telecommunications Union Telecommunication Standardization Sector(ITU-T)

a. **T-carrier system**

b. E-carrier system

c. E1 system

d. T1 system

274.ITU-T finds wide use all over the world except three nations namely

a. UK, USA, Japan

b. **USA, Canada, Japan**

c. Japan, America, USA

d. Japan, America, Canada

275.PDH means

a. **Plesiochronous Digital Hierarchy**

b. Plasma Digital Hierarchy

c. Pointer Double Hard disk

d. Plasma Double Hierarchy

276. In 32 timeslots of E1, only ___ are used two of these are used for framing and signalling call setup

a. 20

b. 15

c. **30**

d. 40

277.High quality of call is ensured since transmission takes place with a constant

a. Latency
b. Capacity
c. **Both a & b**
d. None of these

278.Another timeslot is reserved for signalling purposes

a. **TS16**
b. TS15
c. TS14
d. TS13

279.Which is controlled some standard protocols in the field of telecommunications

a. Teardown
b. Call setup
c. **Both a & b**
d. None of these

280.E1 is different from earlier T-carrier systems since all ___ of every sampling are available for every call

a. 4bits
b. **8bits**
c. 16bits
d. 32bits

281.There are two general categories of transmission media

a. Bounded(guided) media
b. Unbounded(unguided) media
c. **Both a & b**
d. None of these

282._____ are bounded media

a. Twisted pair
b. Coaxial cable
c. Fibre optic cables

d. All of these

283._____ are known as unbounded transmission

a. microwave and satellite transmission

b. both travel through the air

c. which has no boundaries

d. **all of these**

284.Wireless transmission systems do not make use of a

a. Physical conductor

b. Guide to bind the signal

c. Logical conductor

d. **Both a & b**

285.Energy travels through the air rather than

a. Copper

b. Glass

c. **Both a & b**

d. None of these

e.

286.The transmission systems addressed under this category include

a. Microwave

b. Satellite

c. Infrared

d. **All of the above**

287.Which are used in radio transmission in one form or another

a. Radio

b. TV

c. Cellular phones

d. **All of these**

288._____ is the one example of long distance communication

a. Satellite signal

b. **Satellite relay**

c. Analog signal

d. Digital signal

289.The RF(Radio Frequency) is divided in different ranges starting from

a. Very low frequency(VLF)

b. Extremely high frequency(EHF)

c. **Both a & b**

d. None of these

290.Two transmitters cannot share the same frequency band because of

a. Mutual interference

b. Band usage is regulated

c. **Both a & b**

d. None of these

291.PDAs means

a. **Personal Digital Assistants**

b. Personal Double Assistants

c. Personal Digital Analogs

d. Power Digital Assistants

292.ADSL means

a. Analogs Digital Subscriber Lines

b. **Asymmetric Digital Subscriber Lines**

c. Assistants Digital Subscriber Lines

d. Asymmetric Digital Subscriber language

293.A pair of copper wires twisted together and wrapped with a plastic coating as a twisted pair and which has a diameter of _____:

a. 0.2-0.6

b. 0.4-0.7

c. 0.2-0.8

d. **0.4-0.8**

294._____ are the substances used for insulation purposes

a. Teflon(r)

b. Flouropolymer resin

c. Polyvinyl chloride

d. Polyethylene

e. **All of these**

f.

295.In modem data rate is restricted to approximately____:

a. 24Kbps

b. **28Kbps**

c. 30Kbps

d. 32Kbps

e.

296._____ was first used in telephone system by Alexander Graham Bell

a. **Copper medium**

b. Copper signal

c. Copper set up

d. None of these

e.

297.The unshielded twisted pair states the link between the end in the communication closet and the outlet which is further restricted to

a. 60metres

b. **90metres**

c. 100metres

d. 190metres

298.A UTP cable contains _____ twisted pairs

a. 2 to 240

b. **2 to 4200**

c. 2 to 2400

d. None of these

299. The major disadvantage of UTP is

a. Bandwidth is lower

b. Bandwidth is higher

c. **Bandwidth is limited**

d. Bandwidth is dynamic

300.STP stands for

a. **Shielded twisted pair**

b. Signal transmission pair

c. Shielding twisted process

d. Shielded transmission pair

301.150Ohms STP contains _____IBM connector or RJ45

a. 1 pair

b. **2 pairs**

c. 3 pairs

d. 4 pairs

302.100Ohm UTP contains _____ and 8-pin modular connector(ISDN)

a. 2 pairs

b. 3 pairs

c. **4 pairs**

d. 5 pairs

303._____ contains multi-mode fibre

a. 52.5/125

b. 72.5/125

c. **62.5/125**

d. 82.5/125

304.What are the biggest advantage of UTP

a. Flexibility

b. Cost-effective media

c. Usability of both data communication and voice

d. **All of these**

305.LED means

a. Light Emitting Device

b. **Light Emitting Diode**

c. Light Exchange Device

d. Light Exchange Diode

306.The effective capacity of coaxial cable depends on the

a. Spacing of amplifiers

b. The length of the circuit

c. The gauge of the centre conductor

d. Other intermediate devices

e. **All of these**

307.LANs function over coaxial cable to the _____ specifications

a. 10BASE5

b. 10BASE2

c. 10BASET

d. **All of these**

308.Coaxial cables are of two types

a. Baseband

b. Broadband

c. **Both a & b**

d. None of these

309.The gauge of coaxial cable is _____ than the twisted pair

a. **Thicker**

b. Thinner

c. Heavy

d. Bulky

310.Traditional coaxial cable is quite _____ of which Ethernet LAN 10Base5 is an example

a. Thick

b. Heavy

c. Bulky

d. **All of these**

311.Twin axial cables contains _____ such configurations within a single cable sheath

a. **2**

b. 3

c. 4

d. 5

312.The mechanical protections cover the _____

a. Secondary buffer coating

b. Primary buffer coating

c. **Both a & b**

d. None of these

313.The bandwidth is typically _____ over a length of one kilometer of fibre expressed as 'MHz-Km'

a. 10 to 20

b. **20 to 30**

c. 30 to 40

d. 40 to 50

314.In which multimode fibre, light is refracted by an increasing amount as it moves away from the core

a. Single mode fibre

b. Step index multimode fibre

c. **Graded index multimode fibre**

d. All of these

315.The actual bandwidth of graded index multimode fibre depends on

a. How well a particular fibre's index profile minimizes model dispersion

b. The wavelength of light launched into the fibre

c. **Both a & b**

d. None of these

316.The typical bandwidth of graded index multimode fibre range from

a. **100MHz-Km to over 1GHz-Km**

b. 200 MHz-Km to over 1GHz-Km

c. 300 MHz-Km to over 1GHz-Km

d. 150 MHz-Km to over 1GHz-Km

317.Which multimode fibre has a thinner inner core

a. **Single mode fibre/ Monomode fibre**

b. Step index multimode fibre

c. Graded index multimode fibre

d. All of these

318.In which multimode fibre , different wavelength of light travel at a different speeds

a. **Single mode fibre**

b. Step index multimode fibre

c. Graded index multimode fibre

d. All of these

319.The single mode fibers have the

a. Very broadest bandwidth

b. Lowest cost

c. Lowest attenuation of any optical fibre

d. **All of these**

320.The advantage of single mode fibre are

a. Small size and light weight

b. Large bandwidth

c. Flexibility and high strength

d. Secure against signal leakage and interference

e. No short circuit problems

f. **All of these**

321.The fibre optic systems consists of a

a. Light sources

b. Cables

c. Light detectors

d. **All of these**

322.In a fiber optic system, _____ are opto-electric devices

a. **Repeater**

b. EMI

c. RMI

d. RFI

323.EMI/RFI means

a. **Electro Magnetic Interference / Radio Frequency Interference**

b. Electronics Magnetic Interference/Redundancy Frequency Interference

c. Electro Minute Intrinsically/ Radio Fibre Interference

d. None of these

324.Monomode fibre optic systems routinely are capable of transmitting signal over distances in excess of

a. 250Km

b. 350Km

c. 225Km

d. **325Km**

325.CAD means

a. Computer aided distribution

b. Computer application design

c. **Computer aided design**

d. None of these

326.Bounded Media Comparison Chart

Media	Advantages	Disadvantage
Twisted pair cable	Inexpensive, well established, easy to add nodes	Sensitive to noise, short distances, limited bandwidth, security hazard because of easy interception
Coaxial cable (in comparison to twisted)	High bandwidth, long distances	Physical dimensions, noise immunity security is better in pair cable
Optical fibre cable	Very High bandwidth, long distances, noise immunity,	Connections, cost

	high security, small size	

327.In data communication the signal has to travel through the transmission media that may be

a. Wired
b. Wireless
c. **Both a & b**
d. None of these

328.There exist three causes of impairment in transmission errors

a. Attenuation
b. Distortion
c. Noise
d. **All of these**

329._____ is the loss of the signal power while traversing a transmission media including electronic circuitry

a. **Attenuation**
b. Distortion
c. Noise
d. None of these

330.Attenuation is measured in terms of

a. Hertz
b. Micro
c. **decibel**
d. Kilometer

331.Distortion is calculated as the ratio of the

a. Signal at two different points
b. Relative power of two signals at the same point
c. **Both a & b**
d. None of these

332.A negative value of decibel indicates _____ of signal strength

a. **Loss**

b. Gain

c. Either loss or gain

d. None of these

333.A positive value of decibel indicates _____ of signal strength

a. Loss

b. **Gain**

c. Either loss or gain

d. None of these

e.

334.The attenuation includes a number of factors like

a. Transmitting and receiving antennas

b. Transmitter powers

c. Modulation techniques

d. Frequency of the transmission

e. Atmospheric conditions

f. **All of these**

335.Distortion is proportional to the square of the _____

a. Atmospheric conditions

b. Modulation techniques

c. **Operating frequency**

d. Operating system

336.Equalizing devices are _____ at intermediate points to keep the shape of the signal intact

a. Created

b. **Inserted**

c. Modified

d. Deleted

337.Data processing and transmission systems experience errors due to several reasons

a. Electrostatic interference can be caused from circuits or machines lying close by

b. Inductance and capacitance, loss in transmission due to leakages, impulses from

static in the atmosphere, etc, lead to distortion

c. Resistance to current in a cable can be caused due to attenuation

d. All of these

338.The main constraints are due to the physical medium that produces

a. Noise

b. Distortion

c. Attenuation

d. Dropouts

e. **All of these**

339.The digital signals do not suffer from _____ but they are susceptible to dropouts

a. Noise

b. Distortion

c. **Both a & b**

d. None of these

340.The use of several parity bits are

a. Help to detect any error

b. Find if any bits are inverted

c. They should be re-inverted so that the original data is restored

d. **All of these**

341.SECDEC means

a. **Single error correction, double error detection**

b. Single exchange correction, double exchange detection

c. Single error code, double error detection

d. Single error character, double error detection

342.The types of errors are

a. Single Bit Errors

b. Burst Errors

c. **Both a & b**

d. None of these

e.

343.A transmission cable has

a. Inductance
b. Capacitance
c. Resistance
d. **All of these**

344.The inductance and capacitance tends to

a. Causes the amplitude of the signal to reduce
b. **Distort the shape of a signal**
c. Both a & b
d. None of these

345.The resistance tends to

a. **Causes the amplitude of the signal to reduce and therefore loss of power**
b. Distort the shape of a signal
c. Both a & b
d. None of these

346.Which type of error corrupt the single bits of transmission

a. Burst errors
b. **Single bit errors**
c. Both a & b
d. None of these
e.

347. Which type of error corrupt the multiple bits of transmission

a. **Burst errors**
b. Single bit errors
c. Both a & b
d. None of these

348.ENQ means

a. **Enquiry**
b. Encryptions
c. Enquire

d. None of these

349.BER stands for

a. Byte Enquiry Rate

b. **Bit Error Rate**

c. Burst Enquiry resistance

d. Burst Error Rate

350.NAK means

a. None Acknowledge

b. Noise Acknowledge

c. **Negative Acknowledgement**

d. Network Acknowledgement

351.The No of bits that get affected in burst errors depends upon the

a. Duration of the noise

b. Transmission time of the no of bits of the transmitted packet

c. **Both a & b**

d. None of these

352. The redundant bit enables

a. correction of errors

b. **detection of errors**

c. Redundancy check

d. All of these

353.The types of redundancy processes are

a. Parity check

b. Cyclic redundancy check

c. Checksum

d. **All of these**

e.

354._____ is the technique of providing a data string that is added to information packets used to detect errors in data packets

a. **CRC**

b. Parity check

c. Checksum

d. All of these

e.

355.Which redundancy process can detect the more than 95 per cent of all errors

a. **CRC**

b. Parity check

c. Checksum

d. All of these

356.CRC means

a. Circuit Redundancy Check

b. **Cyclic Redundancy Check**

c. Checksum Rail Check

d. None of these

357.The Two-dimensional parity check method can not

a. Correct the errors

b. Detect the errors

c. **Correct and detect the errors**

d. None of these

358.When signal amplitude degrades along a transmission medium , this is called

a. **Signal attenuation**

b. Signal bandwidth

c. Frequency

d. Data rate

359.The CRC is validated by using _____ conditions

a. 1

b. **2**

c. 3

d. 4

360.The two conditions of CRC are

a. It should possess exactly one bit less than the divisor
b. When CRC is appended to the end of the data stream
c. **Both a & b**
d. None of these

---

1. The device used for splits data into frames and then combines frames into data in frame relay is termed as
   a. FRAD(Frame Relay And Disassembly)
   b. Framing
   c. **Both a & b**
   d. Slipping Window Protocol
2. The Error controls involves
   a. Sequencing of control frame
   b. Sending of control frame
   c. **Both a & b**
   d. None of these
3. During communication, a channel that is noisy may causes
   a. Loss of bits from a frame
   b. Flips of bits
   c. Complete disappearance of frames
   d. Introduction of new bits in the frame
   e. **All of these**
4. The data link layer encapsulates each packet in a frame by adding
   a. Header
   b. Trailer
   c. **Both a & b**
   d. None of these
5. The Frame format of framing are

a. DLCI-10bits

b. EA-2location(First one is fixed at 0 and second at 1)

c. DE-1 is set for the part that can be discarded first when congestion occurs

d. Data size-vary up to 4096bytes

e. **All of these**

6. Which is a simple data link protocol based on certain ideal assumptions to explain the working of the data link layer

a. Stop ARQ

b. Wait ARQ

c. Go back-N ARQ

d. **Both a & b**

7. The assumptions of Stop and Wait ARQ are as

a. Infinite buffer size

b. Half Duplex

c. Does not produce any error

d. Network layers are always ready

e. **All of these**

8. The protocol based on the assumption are called

a. **Elementary data link protocol**

b. Data link protocol

c. Sliding Window Protocol

d. HDLC

9. The basic objective of computer communication in a network environment is to send an infinitely long message from the _____

a. Source node to the source node

b. Destination node to the destination node

c. **Source node to the destination node**

d. None of these

10. In stop and wait protocol

a. Sequence number are required

b. **Sequence number are not required**

c. Both a & b

d. None of these

11.The stop and wait protocol is

a. easy to Implement

b. Does not call for congestion

c. **Both a & b**

d. None of these

12.The disadvantage of stop and wait protocol is

a. Error free communication channel does not exist

b. Acknowledgement may get lost

c. Deadlock situation may occur

d. **All of these**

13. Which protocol enables the source machine to possess more than one outstanding frame at a time by using buffers

a. Stop ARQ

b. Wait ARQ

c. **Go back-N ARQ**

d. Both a & b

14. The Go back-N ARQ overcomes the problem of

a. **PAR**

b. PER

c. PRA

d. DAR

15.Another important issue in the design if the data link is to control the rate of data transmission between _____

a. Source and destination host

b. **Two source and destination host**

c. Three source and destination host

d. None of these

16.Which one is the important protocol used by the data link layer

a. Sliding protocol
b. **Sliding Window protocol**
c. Stop sliding approach
d. None of these

17.The sender keeps a list o consecutive sequence numbers is known as

a. Window
b. **Sending window**
c. Stop and wait ARQ
d. Sliding window

18.Which protocol is for data transmission and is bi-directional, used in the data link layer that corresponds to layer 2 of OSI model

a. Sending window
b. **Sliding window protocol**
c. Stop and wait ARQ
d. Sliding window

19.Sliding window protocol keeps record of frame sequences sent and acknowledged when communication takes place between _____

a. Users
b. **Two users**
c. More users
d. None of these

20.Sliding window protocol is also used by most of the _____

a. Connection oriented protocols
b. **Connection oriented network protocols**
c. Connection network protocols
d. None of these

21.Which is used by many users to establish their home PC to the Internet via a phone-line connection

a. FTP

b. **PPP**

c. OSI

d. PAR

e.

22. Sliding window protocol works on _____ in which there is simultaneous two-way communication

a. no duplex

b. half duplex

c. **full duplex**

d. single duplex

e.

23.Sliding window protocol makes use of two types of frames namely

a. Data frame

b. Acknowledgement frame

c. **Both a & b**

d. None of these

24.Another improvement is done over this 'stop and wait' type protocol by use of _____

a. Back

b. **Piggybacking**

c. Piggy

d. None of these

25.A technique in which acknowledgement is temporarily delayed and then hooked onto next outgoing frame is known as

a.

b. Back

c. **Piggybacking**

d. Piggy

e. None of these

26.RTT stands for

a. Robin time taken

b. **Round trip time**

c. Round time trip

d. Round time trip

27.The variants of sliding window protocol are

a. Go back n

b. Selective repeat

c. Selective reject

d. **All of these**

28.The sliding window protocol employs _____

a. A wait approach

b. A stop approach

c. **Both a & b**

d. None of these

29.HDLC is a _____ synchronous data link layer protocol

a. Bit-oriented

b. Byte-oriented

c. **Both a & b**

d. None of these

e.

30.HDLC provides

a. Switched protocol

b. Non- Switched protocol

c. **Both a & b**

d. None of these

31.HDLC is a superset of _____

a. ADCCP

b. **SDLC**

c. ISO

d. OSI

32.HDLC also has a subset of _____

a. **ADCCP**

b. SDLC

c. ISO

d. FRAD

33.Which is another subset of HDLC that finds use in packet switched networks of ITU-TS X.25

a. **ADCCP**

b. SDLC

c. **LAP-B(Link Access Protocol-Balanced)**

d. None of these

34.In HDLC three types of stations are specified by the data link layer

a. Primary Station

b. Secondary Station

c. Combined Station

d. **All of these**

35.HDLC works on three different types of configurations namely

a. Balanced configurations

b. Unbalanced configurations

c. Symmetrical configurations

d. **All of these**

36.Frames of secondary station are known as _____ are sent only on request by the primary station

a. Response

b. Responses frame

c. **Both a & b**

d. None of these

37.Which is a unit of data transmission

a. **Frame**

b. Stop and wait ARQ

c. HDLC

d. Frame relay

38.A configuration has at least two combined stations in which every station has equal and complimentary responsibility known as _____

a. **Balanced configurations**

b. Unbalanced configurations

c. Symmetrical configurations

d. None of these

39.Balanced configurations find use only in the such cases as given below

a. Operation: Full or half duplex

b. Network: Point to Point

c. **Both a & b**

d. None of these

40. A configuration has one primary station and at least one secondary station , and it exists as one station exercises control over other stations known as _____

a. Balanced configurations

b. **Unbalanced configurations**

c. Symmetrical configurations

d. None of these

41.Symmetrical configurations comprises of _____

a. Two independent

b. Unbalanced stations

c. Connected point to point

d. **All of these**

e.

42.Logically, every station is considered as _____ stations

a. 1

b. **2**

c. 3

d. 4

e.

43.The protocol and data are totally independent, this property known as _____

a. Transmission

b. **Transparency**

c. Transparent

d. Transport

44.In HDLC, problems like _____ do not occur

a. Data loss

b. Data duplication

c. Data corruption

d. **All of these**

45.How many modes of operations are defined for the HDLC protocol

a. 2

b. **3**

c. 4

d. 5

46.Three modes of operations are defined for the HDLC protocol

a. Normal Response Mode(NRM)

b. Asynchronous Response Mode(ARM)

c. Synchronous Balanced Mode(ABM)

d. **All of these**

47.In primary station initializes links for controlling the data flow between _____

a. Primary and secondary stations

b. Error control

c. Logical disconnection of the second stations

d. **All of these**

48.The ABM mode is suitable only to _____ environment

a. Point

b. **Point-to-point**

c. First-to-end-point

d. None of these

49.In the HDLC protocol, frame consists of _____

a. Three fields

b. Four fields

c. Five fields

d. **Six fields**

e.

50.A special eight-bit sequence _____ is referred to as a flag

a. 01111111

b. **01111110**

c. 11101110

d. 11101110

51.In the HDLC protocol, every frame consists of _____ with a flag

a. Starts

b. End

c. **Both a & b**

d. None of these

52.A 8-bit address is used when the total number of stations exceeds _____

a. 64

b. 128

c. **256**

d. None of these

53.Data can be arbitrarily _____

a. Long

b. Empty

c. Full

d. **Both a & b**

54.The HDLC procedure uses a flag synchronous system, these are

a. Bit order of transmission (information frame)

b. Bit order of transmission (supervisor frame)

c. **Both a & b**

d. None of these

55.FCS (frame check sequence) is a _____ sequence for error control

a. 4bit

b. **16bit**

c. 32bit

d. 64bit

56.The disadvantage of SLIP are as follows

a. No error check function is available

b. Protocols other than IP cannot be used

c. No function is available to authenticate link level connections

d. No function is available to detect loops

e. **All of these**

57.PPP has several advantages over non-standard protocol such as

a. SLIP

b. X.25

c. **Both a & b**

d. None of these

e.

58.PPP was designed to work with layer 3 network layer protocols including _____

a. IP

b. IPX

c. Apple talk

d. **All of these**

59.PPP can connect computers using _____

a. Serial cable, phone line

b. Trunk line, cellular telephone

c. Specialized radio links

d. Fiber optic links

e. **All of these**

60.Most dial-up access to Internet is accomplished by using _____

a. HDLC

b. **PPP**

c. IP

d. IPX

61.RAS has an important role in the proliferation of Internet based services in the form of _____

a. VoIP

b. Data over IP

c. **Both a & b**

d. None of these

62.Which is opening new challenges in the development of RAS where VoIP enabled RAS are the need of time

a. Voice convergence

b. Data convergence

c. Voice and data convergence

d. **None of these**

63.Remote access is possible through an _____

a. Internet service provider

b. Dial up connection through desktop

c. Notebook over regular telephone lines

d. Dedicated line

e. **All of these**

64.A remote access server also known as _____

a. Communication

b. **Communication server**

c. Layer

d. None of these

65.RAS technology can be divided into two segments _____

a. Enterprise

b. Infrastructure

c. **Both a & b**

d. None of these

66.VPN stands for

a. Virtual Public networking

b. **Virtual private networking**

c. Virtual package networking

d. Virtual packet networking

67.PPP provides three principal components

a. Encapsulating datagrams

b. Establishment, configurations and testing

c. Establishment and configurations

d. **All of these**

68.PPP is able to function across any _____ interface

a. DTE

b. DCE

c. **Both a & b**

d. None of these

69.PPP may include

a. RS232C

b. RS-423

c. **Both a & b**

d. None of these

e.

70.In PPP, the default maximum length of the information field is _____

a. 1000bytes

b. **1500bytes**

c. 2000bytes

d. 2500bytes

e.

71.The protocols that are differentiate PPP from HDLC are the

a. Link Control Protocol(LCP)

b. Network Control Protocol(NCP)

c. **Both a & b**

d. None of these

72.For terminate PPP ,the four steps are

a. Link establishment

b. Link configuration negotiation

c. Configuration acknowledgement frame

d. Configuration terminates

e. **All of these**

73.The LCP can terminates the link at any time is done by

a. **Request to the user**

b. Not Request to the user

c. Both a & b

d. None of these

74.The termination of link may happen

a. **Due to physical event**

b. Due to logical event

c. Due to window event

d. None of these

75.The three classes of LCP frames are

a. Link establishment frame

b. Link termination frame

c. Link maintenance frame

d. **All of these**

76.The NCP phase in PPP link connection process is used for establishing and configuring different network layer protocols such as

a. IP

b. IPX

c. AppleTalk

d. **All of these**

77.In NCP, The link traffic consists of any possible combination of

a. NCP

b. LCP

c. Network-layer protocol packets

d. **All of these**

78.The IP control Protocol(IPCP) is the

a. IP-specific LCP protocol

b. **IP-specific NCP protocol**

c. Both a & b

d. None of these

79.If the calling peer has an IP address, it tells the

a. **Called peer What it is**

b. The called peer can assign the caller one from a pool of addresses

c. Both a & b

d. None of these

80.If the calling peer does not have an IP address, it tells the

a. Called peer What it is

b. **The called peer can assign the caller one from a pool of addresses**

c. Both a & b

d. None of these

81.The authentication process involves transmission of password information between

a. RADIUS server

b. RAS(Remote Access Server)

c. **Both a & b**

d. None of these

82.The Authentication transaction used between a Remote access user and RAS can be divided into two categories are

a. PAP(Password Authentication Protocol)

b. CHAP(Challenge Handshake Authentication Protocol)

c. **Both a & b**

d. None of these

83.The digest is a

a. **One-way encryption**

b. Two- way encryption

c. Three- way encryption

d. Four- way encryption

84.The technology which is useful for creating Virtual Private Networks (VPNs) has been developed by

a. Microsoft Corporation

b. U.S. Robotics

c. Several remote access vendor companies, known as PPTP forum

d. **All of these**

85.PPTP means

a. **Point-to-Point Tunneling Protocol**

b. Point-to-Point Termination Protocol

c. Private-to-Private termination protocol

d. Private-to-Private Tunneling Protocol

86.The PPTP is used to ensure that message transmitted from one VPN node to another are

a. Not secure

b. **Secure**

c. Networks

d. IPX

87. What is the extension of PPTP

a. PPP

b. RAS

c. **L2TP(Layer Two Tunneling Protocol)**

d. None of these

88.The two main components that make up L2TP are the

a. L2TP Access Concentrator(LAC)

b. L2TP Network Server(LNS)

c. **Both a & b**

d. None of these

89.A user connects to NAS through

a. ADSL

b. Dialup POTS

c. ISDN

d. Other service

e. **All of these**

90.Which is a platform on which Internet service providers(ISP) and other service providers enables their user to access the various internet based services

a. **RAS**

b. TCP

c. ARQ

d. SLIP

---

1. A computer network permits sharing of

   a. Resources

   b. Information

   c. **Both a & b**

   d. None of these

2. The first operational computer network in the world was the _____ for the United States Department of Defense

   a. **ARPANET**

   b. ERNET

   c. SKYNET

   d. DARPANET

   e.

3. ATM stands for

a. Automatic taller machine

b. **Automated teller machine**

c. Automatic transfer machine

d. Automated transfer machine

4. _____ is the technology that connects the machines and people within a site in a small area

a. **LAN**

b. MAN

c. WAN

d. None of these

5. _____ is a network that covers geographic areas that are larger, such as districts or cities

a. LAN

b. **MAN**

c. WAN

d. None of these

e.

6. _____ is a network that this technology connects sites that are in diverse locations

a. LAN

b. MAN

c. **WAN**

d. None of these

7. _____ is a collection of point-to-point links that may form a circle

a. LAN

b. MAN

c. WAN

d. **Ring topology**

8. _____ refers to tone signals used for various control purposes via the telephone network

a. SMS

b. **DTMF**

c. GSM

d. None of these

9. LAN is a network that is restricted to a relatively

a. **Small area**

b. Large area

c. Both a & b

d. None of these

10.The components used by LANs can be categorized into

a. Hardware

b. Cabling protocols

c. Standards

d. **All of these**

e.

11.The various LAN protocols are

a. Ethernet

b. Token ring

c. **Both a & b**

d. None of these

12.The Institute of Electrical and Electronics Engineers established a project named IEEE project 802 during the year _____

a. 1990

b. 1970

c. **1980**

d. 1960

13.In 1985, the committee issued a set of ___ standards

a. 2

b. 3

c. **4**

d. 5

14.ISO revised these standards and reintroduced them as ISO 8802 standards during ____

a. 1977

b. **1987**

c. 1997

d. 1999

15.The following are the important standards proposed by IEEE

a. IEEE 802.1– overview and relationship among the various IEEE standards

b. IEEE 802.3 or CSMA/CD bus

c. IEEE 802.4 or token bus

d. IEEE 802.5 or token ring

e. IEEE 802.6 or MAN protocol

f. **All of these**

16.When compared with the OSI reference model, the IEEE standard contains the following layers:

a. Physical layer

b. Medium access control(MAC) equivalent to the lower part of the OSI data link layer

c. Logical link layer(LAC) equivalent to the upper part of the data link layer

d. Network layer, the OSI network layer, that performs some of the higher order layer functions

e. **All of these**

17.The 802.2 compatible interfaces provide two major types of services, which are

a. Unacknowledged

b. Connectionless

c. **Both a & b**

d. None of these

18.The _____ follows the ring topology

a. IBM of LAN

b. **LAN of IBM**

c. Both a & b

d. None of these

e.

19.In a token ring, the stations are connected to the _____

a. **Logical ring**

b. Physical ring

c. Both a & b

d. None of these

e.

20.A _____ preamble is used to synchronize the receiver's clock

a. Four-byte

b. Three-byte

c. Two-byte

d. **One-byte**

21.Start of frame and end of frame are used to _____ the frame boundaries

a. **Mark**

b. Modify

c. Delete

d. Find

22.Frame control is also used to specify the _____

a. Frame technique

b. **Frame type**

c. Both a & b

d. None of these

23.The destination address and source address field is similar to

a. **IEEE 802.3 or CSMA/CD bus**

b. IEEE 802.4 or token bus

c. IEEE 802.5 or token ring

d. IEEE 802.6 or MAN protocol

24.Info field is used to _____

a. Send messages

b. **Send data**

c. Delete data

d. Create data

25.The maximum length of this field is _____ when the address is _____

a. 8182 & 2 bits

b. **8182 & 2 bytes**

c. 8182 & 4 bits

d. 8182 & 4 bytes

26.The maximum length of this field is _____ when the address is _____

a. 8174 bytes & 6 bits

b. 8174 bytes & 6 bytes

c. 8174 bytes & 8 bytes

d. 8174 bits & 6 bytes

27.Check sum is used for

a. Error correction

b. **Error detection**

c. Both a & b

d. None of these

e.

28.Solicit-successor frame contains the address of the

a. Sending station

b. Successor

c. **Both a & b**

d. None of these

29.Government agencies and local libraries often use a MAN to connect to private

a. Industries

b. Citizens

c. **Both a & b**

d. None of these

e.

30.The geographical limit of a MAN may

a. Not span a city

b. **Span a city**

c. Either span or not

d. None of these

31.In MAN, different LANs are connected through a local _____

a. **Telephone exchange**

b. Computer wires

c. Both a & b

d. None of these

32.Some of the widely used protocols for MAN are

a. RS-232

b. X.25

c. Frame relay

d. Asynchronous transfer mode(ATM)

e. ISDN

f. OC-3lines(155 Mbps)

g. ADSL(asymmetric digital subscriber line)

h. **All of the above**

33. MAN stands for

a. Machine area network

b. **Metropolitan area network**

c. Metropolitan asynchronous network

d. Machine asynchronous network

34.WAN technologies function at the lower three layers of the OSI reference model

a. Physical layer

b. Data link layer

c. Network layer

d. **All of these**

e.

35.WAN also uses switching technology provided by _____

a. Local exchange

b. Long distance carrier

c. **Both a & b**

d. Small distance carrier

36. Packet switching technologies such as _____ are used to implement WAN along with statistical multiplexing

a. ATM

b. Frame relay

c. Switched multimeagabit data service

d. X.25

e. **All of these**

37.MAN uses only a

a. Long exchange

b. **Local carrier**

c. Both a & b

d. None of these

e.

38.In MAN, a network is accomplished using components

a. Hardware

b. Protocols

c. **Both a & b**

d. None of these

e.

39.In MAN, a network is accomplished using basic components

a. Hardware

b. Protocols(software)

c. Applications(useful software)

d. **All of the above**

40.The Internet(internetworking) ha become a potent tool for

a. Education

b. Productivity

c. Enlightenment

d. **All of these**

41.The Government of India had set up ERNET in _____ to provide TCP/IP connections for education and research communities in India

a. 1976

b. **1986**

c. 1996

d. 1999

42.The liberalized policies encouraged many private players like

a. DISHNET

b. JAINTV

c. Mantra online

d. **All of these**

43.The other government organizations like _____ to enter this field to bring the Internet to common people

a. NIC

b. VSNL

c. MTNL

d. **All of the above**

e.

44.The major network infrastructure available in the country has two types of WAN

a. Terrestrial WAN

b. VSAT WAN

c. **Both a & b**

d. None of these

e.

45.Following are different options for setting up the Intranet, education portal or e-commerce, etc…….

a. Leased line

b. Dial Up connection

c. VSAT

d. Radio link

e. **All of the above**

46. The networks can be broadly divided into three categories namely

a. LAN for a single building

b. MAN- single city

c. WAN-country, continent and planet

d. **All of the above**

47.The host to terminal connection is a conventional type of connection between

a. Main frame

b. Dumb terminals

c. **Both a & b**

d. None of these

48.TC means

a. Terminal Computer

b. **Terminal Controller**

c. Technical Computer

d. None of these

49.A collection of interconnected networks is known as

a. **Internetwork**

b. Internet

c. Network

d. None of these

e.

50.The type of packet format supported by X.25 are as follows

a. Control packet

b. Data packet

c. **Both a & b**

d. None of these

51.A terminal controller may be used to integrate two or more terminals for connection with

a

a. Low speed line
b. High speed line
c. Single WAN line
d. **Both a & b**

52.ISDN stands for

a. **Integrated Service Digital Network**
b. Interaction System Digital Network
c. Inexpensive System Digital Network
d. None of these

53.For LAN to LAN connection, which are mainly used

a. ISDN
b. Leased Line
c. Frame relay
d. **All of these**
e.

54.Which function allows selection of the appropriate route based on IP header information and sends packets through this route

a. **Forwarding function**
b. Filtering function
c. Both a & b
d. None of these

55.Which function allows dumping of invalid packets for a specific network instead of forwarding

a. Forwarding function
b. **Filtering function**
c. Both a & b
d. None of these

56.Routing in the same network may be termed as

a. **Local routing**

b. Static routing

c. Dynamic routing

d. Distributing routing

57.The routing table possessed by a router includes

a. Combination of destination address

b. Next hops that corresponds to that address

c. **Both a & b**

d. None of these

58.If there is a fixed route information to each router, is called

a. **Fixed routing**

b. Dynamic routing

c. Both a & b

d. Distributed routing

59.If routing information is automatically updated by routers when changes are made to the network configuration are called

a.

b. Fixed routing

c. **Dynamic routing**

d. Both a & b

e. Distributed routing

60.The processing required to transferring a packet from the source host to the destination host or to the relaying router are called

a. Fixed routing

b. Dynamic routing

c. **Local routing**

d. Distributed routing

e.

61.ARP stands for

a. **Address Resolution Protocol**

b. Address Routing Protocol

c. Address Routing Packet

d. Address Routing Program

62.If two or more routers are connected to the same subnet, the network administration determines which of the routers the messages should be sent to.. to eliminate this problem._____ are used

a. MAC messages

b. **ICMP messages**

c. INDP messages

d. IMCP messages

e.

63.If two or more routers are available in distributed routing, which route should be selected

a. High possible cost

b. Least possible cost

c. Link cost

d. **Both b & c**

64.If there is no any specific intention, the cost for a single link is usually set at ___

a. **1**

b. 2

c. 3

d. 4

65.Multi-path routing can be achieved in

a. Distance-vector type

b. Link-state type

c. **Both a & b**

d. None of these

66. If there are two or more routes to reach the same destination at the same cost, which method is applicable to determine how to select this route

a. Round robin method

b. Random selection method

c. Mixed method

d. **All of these**

67.The Mixed method remains _____ for the amount of processing required

a. Effective

b. **Ineffective**

c. Both a & b

d. None of these

68. A set of networks interconnected by routers within a specific area using the same routing protocol is called

a. **Domain**

b. Backbone

c. Inter-domain router

d. All of these

69.A network composed of inter-domain router is called

a. Domain

b. **Backbone**

c. Inter-domain router

d. All of these

70.A router within a specific domain is called

a. Domain

b. Backbone

c. **Inter-domain router**

d. All of these

71.Two or more domains may be further combined to form a

a. Domain

b. Backbone

c. Inter-domain router

d. **Higher-order domain**

72.Each domain is also called

a. **Operation domain**

b. Backbone

c. Inter-domain

d. All of these

e.

73.Routing protocol in such an internet system can be broadly divided into two types named

a. Intra- domain routing

b. Inter- domain routing

c. **Both a & b**

d. None of these

74.To communication between two or more domains, which are used

a. Intra- domain routing

b. Inter- domain routing

c. **Both a & b**

d. None of these

75.Some Intra-domain protocols are

a. RIP(Routing Information Protocol)

b. OSPF(Open Shortest Path First)

c. IS-IS(Intermediate System to Intermediate System)

d. **All of these**

76._____ are the algorithms are available to update contents of routing tables

a. Distance-Vector Protocol

b. Link-State Protocol

c. **Both a & b**

d. None of these

77.Distance vector protocols are

a. RIP

b. IGRP(Interior Gateway Routing Protocol)

c. **Both a & b**

d. None of these

78.RIP stands for

a. **Routing Information Protocol**

b. Routing Intra Protocol

c. Route Intermediate Protocol

d. Resolution Information Protocol

79.The Link state protocol are

a. OSPF(Open Shortest Path First)

b. IS-IS(Intermediate System to Intermediate System)

c. **Both a & b**

d. None of these

80.In link state protocol, the load on router will be

a. Small

b. **Large**

c. Medium

d. None of these

e.

81. For large load on router, the processing is

a. **Complex**

b. Simple

c. Both a & b

d. None of these

82.Which protocol are used in link state type routing protocol developed for use in large scale network

a. **OSPF(Open Shortest Path First)**

b. IS-IS(Intermediate System to Intermediate System)

c. Both a & b

d. None of these

83.The common part of OSPF packet format is

a. Packet type

b. Packet length

c. Router ID

d. Area ID

e. Authentication type

f. Authentication data

g. Version

h. Checksum

i. Individual information part

j. **All of these**

84.The router may be classified into three types named

a. Domain border router

b. Internal router

c. Area border router

d. **All of these**

85.OSPF is a hierarchical routing composed of

a. Intra-area routing

b. Inter-area routing

c. Inter-domain routing

d. **All of these**

86.The word SLIP stands for

a. **Serial Line IP**

b. Standard Line IP

c. Serial Link IP

d. Standard Link IP

87.The word PPP stands for

a. **Point to Point Protocol**

b. Packet to Packet Protocol

c. Point to Packet Protocol

d. Packet to Point Protocol

88._____ is used mainly for connection between LANs that are remotely located from one another

a. **SLIP**

b. PPP

c. Both a & b

d. None of these

e.

89. _____ is used for connection between routers or equipment that must be highly reliable

a. SLIP

b. **PPP**

c. Both a & b

d. None of these

90.The wireless LANs offers the obvious advantage of

a. Avoidance of cabling cost

b. Provide LAN capabilities in temporary quarters

c. **Both a & b**

d. None of these

91.The bandwidth of wireless radio LAN is

a. 24Mbps

b. 2 Mbps

c. **4 Mbps**

d. 8 Mbps

92.The frequency range of wireless LAN is

a. 900 MHz bands

b. 2GHz bands

c. 5 GHz bands

d. **All of these**

93. A hub antennae is located at a _____ from where line-of-sight can be established with the various terminal antennae.

a. Highest point

b. Lowest point

c. **Central point**

d. None of these

94.The effective throughput is more in the range of _____ per hub

a. **1 to 2 Mbps**

b. 2 to 3 Mbps

c. 3 to 4 Mbps

d. 4 to 5 Mbps

95.PDA stands for

a. Personal Device Assistant

b. Pointer Description Assistant

c. **Personal Digital Assistant**

d. Personal Description Analog

96.USB stands for

a. University System Bus

b. Universal System Board

c. University System Board

d. **University Serial Bus**

97._____ are wireless network standard with a data rate of only 2Mbps

a. **IEEE802.11a**

b. IEEE802.11b

c. IEEE803.11a

d. IEEE803.11b

98._____ are wireless network standard with a data rate of only11Mbps

a. IEEE802.11a

b. **IEEE802.11b**

c. IEEE803.11a

d. IEEE803.11b

99.IEEE802.11a and IEEE802.11b have a distance limitation up to _____ from the access point router

a. 1000feet

b. **100feet**

c. 101feet

d. 110feet

100.IEEE802.11a and IEEE802.11b uses _____ band

a. 1.4GHz

b. **2.4GHz**

c. 3.4GHz

d. 4.4GHz

101._____ technology allows speeds up to 54Mbps

a. **IEEE802.11g**

b. IEEE803.11a

c. IEEE803.11b

d. IEEE802.11a

e.

102._____ allows the movement of device with or without user

a. User mobility

b. **Device portability**

c. Both a & b

d. None of these

e.

103.A user can access to the same or similar telecommunication services at different places

a. **User mobility**

b. Device portability

c. Both a & b

d. None of these

e.

104.A number of mobile and wireless device are

a. Sensor

b. Mobile-phone

c. PDA

d. Embedded controller

e. Pager

f. Palmtop

g. Notebook

h. **All of these**

i.

105.The availability of _____ made the wireless communication popular among the masses.

a. Low cost microprocessor

b. Digital switching

c. **Both a & b**

d. None of these

106.Cellular radio has another popular names as

a. Cellular mobile

b. Cellular phone

c. **Both a & b**

d. None of these

107.Radio is basically a device, which has

a. Receiver

b. Transmitter

c. **Both a & b**

d. None of these

108.Wireless communication can be carried out

a. Use of radio

b. Without using radio

c. **Both a & b**

d. Without use of video

109.The term radio may be defined as consisting of _____ of the signal

a. Modulation

b. Radiation

c. **Both a & b**

d. None of these

e.

110.A transmitter and an antenna are used to _____ the modulated signal within radio spectrum

a. Modulate

b. Radiate

c. **Both a & b**

d. None of these

e.

111.In telephone system as we know that a voice with bandwidth of approximately ____ modulates the current of a telephone line

a. 2kHz

b. 3 kHz

c. **4 kHz**

d. 5 kHz

112.Wireless ca be defined as the _____ by means of high frequency electrical waves without a connecting wire

a. Radio transmission

b. Reception of signals

c. **Both a & b**

d. None of these

113.The frequency of a cell may be _____ after the interference zone

a. **Reused**

b. Used

c. Not be used

d. Not be reused

114.PSTN stands for

a. Public Switched Transport Network

b. Public System Transport Network

c. Public System Transfer Network

d. **Public Switched Telephone Network**

115.The radii of a cell may vary from _____ in a building to a city

a. One of meters to tens of kilometers
b. **Tens of meters to tens of kilometers**
c. Hundreds of meters to tens of kilometers
d. Hundreds of meters to hundreds of kilometers

116.The shape of cell mat not be a _____ and depends up on the environment

a. Hexagon
b. Circle
c. Pentagon
d. **Both a & b**

117.SDM stands for

a. System Division Multiple
b. System Division Multiplexing
c. **Space Division Multiplexing**
d. System Double Multiplexing

118.Frequencies for communication may vary from very high frequency to _____

a. Medium range
b. **Microwave range**
c. Digital range
d. None of these
e.

119.The signal may be analog or digital with _____

a. Amplitude
b. Frequency
c. Phase modulation
d. **All of these**

120.The multiplexing and access techniques are

a. SDM(Space Division Multiplexing)
b. FDM(Frequency Division Multiplexing)
c. TDM(Time Division Multiplexing)

d. CDM(Code Division Multiplexing)

e. **All of these**

121.The advantages of mobile communication may be looked into

a. Higher capacity

b. Higher number of users

c. Less transmission power needed

d. More robust

e. Decentralized base station deals with interference

f. Transmission area

g. **All of these**

122.The disadvantages of mobile communication are

a. Fixed network needed for the base stations

b. Handover(changing from one cell to another) necessary

c. Interference with other cells such as co-channel, adjacent-channel

d. **All of these**

123.The important issues on wireless communication are

a. Cell sizing

b. Frequency reuse planning

c. Channel allocation strategies

d. **All of these**

124.In the beginning around 1980, analog cellular telephone systems were developing in _____

a. USA

b. UK

c. **Europe**

d. Japan

125.The proposed system was expected to meet certain as mentioned as

a. Good subjective speech quality

b. Low terminal and service cost

c. Support for international terminals

d. Spectral efficiency

e. ISDN compatibility

f. **All of these**

126.ETSI stands for

a. **European Telecommunication Standards Institute**

b. European Telephone Standards Institute

c. European Telecommunication Systems Institute

d. European Telecom Standards Institute

127.GSM(Global System for Mobile Communication) is a _____ digital mobile telephones standard using a combination Time Division Multiple Access(TDMA) and FDMA(Frequency Division Multiple Access)

a. First generation

b. **Second generation**

c. Third generation

d. None of these

e.

128.GSM provides only _____ data connection

a. 8.6kbps

b. **9.6kbps**

c. 7.6kbps

d. 8.8kbps

129.The uplink and downlink frequencies for GSM are different and therefore a channel has a pair of frequencies _____ apart

a. 70MHz

b. **80MHz**

c. 90MHz

d. 60MHz

130.The separation between uplink and downlink frequencies are called

a. **Duplex distance**

b. Double distance

c. Triplex distance

d. None of these

131.In a channel the separation between adjacent carrier frequencies is known as channel separation which is _____ in case of GSM

a. 100kHz

b. **200 kHz**

c. 300 kHz

d. 400 kHz

132.The services supported by GSM are

a. Telephony

b. Fax and SMS

c. Call forwarding

d. Caller ID

e. Call waiting

f. **All of these**

133.GSM supports data at rates up to 9.6kbps on

a. POTS(Plain Old Telephone Service)

b. ISDN

c. Packet Switched Public Data Networks

d. Circuit Switched Public Data Networks

e. **All of these**

134.The access methods and protocols for GSM may be from

a. X.25

b. X.32

c. **Both a & b**

d. None of these

135.There are basic types of services offered through GSM are

a. Telephony or teleservices

b. Data or bearer services

c. Supplementary services

d. **All of these**

136.The supplementary services are used to enhance the features of

a. Bearer

b. Teleservices

c. **Both a & b**

d. None of these

e.

137.Dual tone signals are used for various control purposes via the

a. Telephone network

b. Different from dual pulses

c. **Both a & b**

d. None of these

138.SMS(Short Message Service) is a message consisting of a maximum of _____ alphanumeric characters

a. 150

b. **160**

c. 170

d. 180

139.GSM supports _____ Group 3 facsimile

a. CCIIT

b. **CCITT**

c. CCCIT

d. CCTTI

140.Call forwarding is a _____

a. Telephony or teleservices

b. Data or bearer services

c. **Supplementary services**

d. All of these

141.The other services of call forwarding are

a. Cell broadcast, voice mail, fax mail

b. Barring of outgoing and incoming calls conditionally

c. Call hold, call waiting, conferencing

d. Closed user groups

e. **All of these**

142.GSM consists of many subsystems, such as the

a. Mobile station(MS)

b. Base station subsystem(BSS)

c. Network and Switching subsystem(NSS)

d. Operation subsystem(OSS)

e. **All of these**

143.Which forms a radio subsystem

a. Mobile station

b. Base station subsystem

c. **Both a & b**

d. None of these

144.The generic GSM network architecture which is composed of three subsystem are_____

a. Radio subsystem (RSS)

b. Network and switching subsystem

c. Operation subsystem

d. **All of these**

145.The RSS is basically consisting of radio specific equipment such as _____ to control the radio link

a. Mobile station(MS)

b. Base station subsystem(BSS)

c. **Both a & b**

d. None of these

146.The chief components of RSS are

a. BSS

b. Cellular layout

c. Base station controller(BSC)

d. **All of these**

147.SIM stands for

a. System Identity Module

b. **Subscriber Identity Module**

c. Subscriber Identity Modem

d. Subscriber Input Modem

148.MS contains a SIM card in the form of a very _____ inside the equipment

a. Large chip

b. **Small chip**

c. Both a & b

d. None of these

149.Cell site is defined as the location where _____ are placed

a. Base station

b. Antennas

c. **Both a & b**

d. None of these

e.

150.Cells are the basic constituents of a cellular layouts with _____

a. **Cell sites**

b. Cell systems

c. Cell forwarding

d. None of these

151.A cell is simply represented by simple _____

a. Pentagon

b. **Hexagon**

c. Both a & b

d. None of these

e.

152.The size of cells in case of GSM and Personal Communication Service(PCS) are much

smaller in the range of _____

a. 5Kms

b. **10Kms**

c. 15Kms

d. 20Kms

153.The portions covered by the antenna are called

a. Portions

b. **Sectors**

c. Cell sector

d. None of these

154.The BTS or Base Transceiver Station is also called

a. **RBS**

b. PCS

c. GSM

d. SIM

155.BTS are housed with all radio equipments such as

a. Antennas

b. Signal processors

c. Amplifiers

d. **All of these**

e.

156.Base station may also be placed near center of cell and known as

a. Excited cell

b. **Center excited cell**

c. Center cell

d. None of these

157.The actual cell is the _____ hexagon, with the towers at the corners

a. Red

b. Blue

c. **Red and blue**

d. None of these

158.Antenna always transmits inward to each cell and area served depends on

a. Topography

b. Population

c. Traffic

d. **All of these**

159.Network and switching subsystem is composed of the _____

a. Mobile Services Switching Center(MSC)

b. Home Location Register(HLR)

c. Visitor Location Register(VLR)

d. **All of these**

160.The mobile stations(MS) communicates only via the

a. **BTS**

b. BSS

c. BSC

d. U_m

161.A BTS is connected to a mobile station via the

a. BTS

b. BSS

c. A_{bis} interface with BSC

d. U_m interface

e. **Both c & d**

162.The U_m interface basically consists of _____ for wireless transmission

a. FDMA

b. TDMA

c. CDMA

d. **All of these**

163.The FDMA involves the division up to the maximum of _____ bandwidth into 124 carrier frequencies spaced 200 kHz apart

a. **25MHz**

b. 35MHz

c. 24MHz

d. 20MHz

164.The FDMA channel are further divided in time with a burst period of approximately _____ using a TDMA technique

a. 0.277ms

b. 0.377ms

c. 0.477ms

d. **0.577ms**

165.The eight burst period are grouped into a TDMA frame which forms the basic unit for definition of

a. Physical channel

b. **Logical channel**

c. Both a & b

d. None of these

166. One _____ is one burst period per TDMA frame

a. **Physical channel**

b. Logical channel

c. Both a & b

d. None of these

167.The more channel increases the

a. GSM

b. **No of base station**

c. No of mobile station

d. Transmitter power

168.The more channel decreases the

a. GSM

b. No of base station

c. No of mobile station

d. **Transmitter power**

169.The other popular name for MSC(Mobile Switching Center) is

a. BS(Base Station)

b. MS(Mobile Switch)

c. MTSO(Mobile Telecommunication Switching Office)

d. **Both b & c**

170.MSC is connected to a _____ at one end

a. Mobile station

b. **Base station**

c. Transmitter station

d. None of these

171.MSC is connected to a _____ at other end

a. **MSCs**

b. PSTN

c. ISDN

d. None of these

172.MSCs acts as a _____

a. Switching

b. **Local Switching exchange**

c. Remote Switching exchange

d. None of these

173.The MSC also provides all the functionality such as

a. Registration

b. Handover

c. Authentication

d. Location updating

e. Call routing to a roaming subscriber

f. **All of these**

174.The MSC provided to establish link with other fixed networks termed as

a. Local MSC

b. Router MSC

c. **Gateway MSC**

d. Remote MSC

175.The main task of MSC are entrusted upon as

a. Interworking function(IWF)

b. Mobility management operations

c. Data service unit(DSU)

d. SS7

e. **All of these**

176.Name the two chief databases

a. Home location register(HLR)

b. Visitor location register(VLR)

c. **Both a & b**

d. None of these

177. Which has its main task as associated with MSC

a. **Home location register**

b. Visitor location register

c. Both a & b

d. None of these

e.

178.IMEI stands for

a. **International mobile equipment identity**

b. International mobile equipment information

c. Interworking mobile equipment information

d. Interworking management equipment information

179.Subscriber's all administrative information along with the current location in GSM network including in database of HLR are

a. IMEI number

b. Directory number

c. Current city

d. Last visited area

e. The class of service subscriber

f. **All of these**

180.HLR keeps the _____ of each mobile that belongs to the MSC to which it is interacting

a. Last location

b. First location

c. **Current location**

d. None of these

181.HLR performs the functions such as _____ to subscribers at their current locations by using user profile information

a. Delivery of calls

b. Information and messages

c. **Both a & b**

d. None of these

182.HLR maintains user information in the form of

a. Static information

b. Dynamic information

c. **Both a & b**

d. None of these

183.The static information is the

a. International Mobile Subscriber Identity

b. Service subscription information authentication key

c. Account status

d. **All of these**

184.The dynamic information is the _____ area of the mobile subscriber which is the identity of the currently serving VLR

a. Last location

b. First location

c. **Current location**

d. None of these

185.The HLR handles SS7 transactions with both

a. MSCs

b. VLR nodes

c. **Both a & b**

d. None of these

e.

186.VLR main tasks are association with

a. MSC

b. IMSI

c. TMSI

d. Roaming

e. **All of these**

187.In nutshell we can say that both the _____work together to provide local connections as well as roaming outside the local service area

a. HLR

b. VLR

c. **Both a & b**

d. None of these

e.

188.The operations and Maintenance Center oversees the all important for_____

a. Proper operation

b. Setup of the network

c. Provides Telecommunication Management Network(TMN)

d. **All of these**

189.Operation Subsystem also provides interface NSS via O-Interface that may be _____

a. **X.25 interface**

b. X.32 interface

c. X.23 interface

d. None of these

e.

190.Authentications Center(AuC) is used for

a. Authentication

b. Security by generating authentication algorithms

c. Cryptographic codes

d. **All of these**

191.AuC is responsible for maintaining all data needed to authenticate a call and to encrypt _____

a. Voice traffic

b. Signaling messages

c. **Both a & b**

d. None of these

192.EIR stands for

a. **Equipment Identification Register**

b. Equipment Identification Remote

c. Equipment Information Remote

d. Equipment Information Register

193.EIR fulfills the _____ requirement of GSM

a. Security

b. Authentication

c. **Both a & b**

d. None of these

194.SIM card has a secret key for _____ over the radio channel

a. Authentication

b. Encryption

c. **Both a & b**

d. None of these

e.

195.GSM network checks the _____ of a mobile device through EIR database

a. Type

b. Serial number

c. **Both a & b**

d. None of these

e.

196.EIR maintains a database of _____

a. Manufacturing devices

b. **Malfunctioning devices**

c. Functioning devices

d. None of these

197.U_m is the link between a

a. Mobile station

b. Base station

c. **Both a & b**

d. None of these

e.

198.GSM 900 operates on a frequency range of _____ for uplink

a. 890-910MHz

b. **890-915MHz.**

c. 890-901MHz

d. 890-911MHz

e.

199.GSM 900 operates on a frequency range of _____ for downlink

a. **935-960MHz**

b. 940-970MHz

c. 945-950MHz

d. 925-960MHz

200.FDM is used to _____ the available frequency band in GSM

a. Addition

b. **Divide**

c. Both a & b

d. None of these

201.The GSM has many burst types such as

a. Normal burst

b. Access burst

c. Synchronization burst

d. Frequency correction burst

e. Dummy burst

f. **All of these**

202. The normal burst period lasts

a. **Approximately 577ms or 15/26ms**

b. Approximately 572ms

c. Approximately 567ms

d. Approximately 578ms

203.Which is provided to avoid overlap with other burst

a. Frequency space

b. **Guard space**

c. Information space

d. Bandwidth space

204.Which is a dedicated time slots within a data or bit stream which repeats after a certain period of time

a. Frequency

b. Amplitude

c. **Channel**

d. Normal burst

205.The channel can be further divided into

a. Dedicated channel

b. Common channel

c. **Both a & b**

d. None of these

206.Both the dedicated and common channel are allocated to a

a. Base station
b. **Mobile station**
c. Mobile switch
d. All of these
e.

207.When a slot repeated every 4.615ms constitute a _____ channel which can be split into several logical channel

a. Logical
b. **Physical**
c. Both a & b
d. None of these

208. TDMA is used to split carrier frequency of 200kHz into_____ time slots

a. 4
b. **8**
c. 16
d. 24

209.GSM 900 has _____ physical full duplex channels

a. 125
b. **124**
c. 248
d. 247

210.GSM 900 has _____ physical half duplex channels

a. 125
b. 124
c. **248**
d. 247

211.Time slot is also known as

a. **Logical channel**
b. Physical channel

c. Both a & b

d. None of these

e.

212.A Traffic Channel(TCH) is defined for speech and data at a rates of

a. 9.6kb/s

b. 4.8kb/s

c. 2.4kb/s

d. **All of these**

e.

213.The length of 24 TDMA frames are kept

a. **120ms**

b. 130ms

c. 150ms

d. 160ms

214. How many frames are included for traffic in 26TDMA frames

a. 1

b. **24**

c. 25

d. 16

215.How many frames are included for Slow Associated Control Channel(SACCH) in 26TDMA frames

a. **1**

b. 24

c. 25

d. 16

216.How many frames are included for currently unused in 26TDMA frames

a. **1**

b. 24

c. 25

d. 16

217.Which are basically used to control the logical channels

a. **CCHs**
b. TCH
c. Both a & b
d. None of these
e.

218.Depending upon the task performed by the Control Channels(CCHs),they are categorized in

a. Broadcast Control Channels(BCCH)
b. Common Control Channels(CCCH)
c. Dedicated Control Channels(DCCH)
d. **All of these**

219.The different control channel are accessed by

a. Idle mode
b. Dedicated mode mobile
c. **Both a & b**
d. None of these

220.Which is a unidirectional downlink point to multi-point signaling channel from BTS to MS

a. **BCCH**
b. CCCH
c. DCCH
d. All of these

221.Which is bi-directional point to multi-point signaling channel that exchanges the signaling information for network access management and transport information regarding connection setup between MS and BTS

a.
b. BCCH
c. **CCCH**
d. DCCH
e. All of these

f.

222.Which is bidirectional and are multiplexed on a standard channel for registration, location updating and authentication in order to set up a call or TCH

a. BCCH

b. CCCH

c. **DCCH**

d. All of these

223.GSM specifies a multiplexing scheme to integrate several frames where a periodic pattern of 26 slots occurs in all TDM frames with a TCH , the combination of these frames are called

a. Multiframe

b. **Traffic-multiframe**

c. Multiprogramming

d. None of these

224.Out of 26 frames, 24 are used for traffic, one is used for the _____ and one is currently unused

a. **SACCH(Slow Associated Control Channel)**

b. FACCH(Fast Associated Control Channel)

c. BCCH

d. CCCH

225.GSM is already mentioned that the duration of one TDMA frame is

a. 4.516ms

b. **4.615ms**

c. 4.156ms

d. 4.165ms

226.Control multiframe comprises of 51 TDMA frame with a duration of _____

a. 234.5ms

b. 233.5ms

c. **235.4ms**

d. 235.3ms

227.2048 superframes constitute a _____

a. **hyperframe**

b. lowerframe

c. strongerframe

d. none of these

228.GSM has three functional layers

a. Physical layer

b. Data link layer

c. Layer three in correspondence with OSI model

d. **All of these**

229.In OSI model, the lower three layers usually terminate in the _____ but it is not true in case of GSM

a. Another node

b. **Same node**

c. Two nodes

d. None of these

230.In protocols, the RR part of layer three is spread over the

a. MS

b. BTS

c. BSC

d. MSC

e. **All of these**

231.Physical layer is the _____ which provides transfer of bit streams over the physical radio links through U_m interface

a. **Lowest layer**

b. Highest layer

c. First layer

d. None of these

232.Physical layer handles all radio specific functions such as _____

a. Creation of bursts

b. Multiplexing of bursts into TDMA frame

c. Synchronization with BTS

d. Channel coding, error detection and correction

e. Quality control on the downlink

f. **All of these**

233.The digital modulation and security related issues such as encryption of digital data are carried over the radio interface between _____

a. MS

b. BTS

c. **Both a & b**

d. None of these

e.

234.The communication on A_{bis} interface between _____ and BSC is established by using the standard LAPD

a. MS

b. **BTS**

c. MTS

d. None of these

235.A reliable data link service is provided between _____ through Message Transfer Part of SS7

a. BSC

b. MSC

c. **Both a & b**

d. None of these

e.

236.The layer three chiefly comprises of _____

a. RR(radio resource management)

b. MM(Mobility management)

c. CM(call control management)

d. **All of these**

237.What are the functions of mobility management

a. Location update
b. Authentication
c. Temporary Mobile Subscriber Identity
d. Reallocation
e. **All of these**
f.

238.CM performs

a. Establishment
b. Maintenance
c. Termination of a circuit-switched call
d. **All of these**
e.

239.CM performs other supporting

a. Supplementary service(SS)
b. Short Message Service(SMS)
c. **Both a & b**
d. None of these

240.The radio resource management sublayer terminates at the

a. BSC
b. **BSS**
c. MSC
d. MTS

241.The radio resource management is used to establish physical connections over the call-related signaling and traffic channels between the _____

a. BSC
b. BSS
c. MS
d. **Both b & c**

242.The RR layer is the part of RR layer is implemented in the BTS to provide functions

between the _____

a. BTS

b. BSC

c. MSC

d. **Both a & b**

243.The _____ is also responsibility of the layers

a. Handover

b. Handoff

c. **Both a & b**

d. None of these

244.Which uses signal strength measurements and cell congestion information to determine when a handoff should occur

a. MSC

b. BSS

c. BSC

d. **Both a & b**

245.Handoff notifications are sent to respective ____ which in turn forward them to HLRs

a. **VLRs**

b. VLCs

c. VCDs

d. LCDs

246.The mobility management sublayer on the _____ of the RR is terminated at the MSC

a. Low

b. **Top**

c. Center

d. First

247.MM is used to

a. Establish

b. Maintain

c. Release connections between the MS a

d. The network MSC

e. **All of these**

248. The Communication Management protocol controls _____ call establishment

a. first-to-end

b. **end-to-end**

c. end-to-first

d. first-to-first

249.CM protocols are used in GSM network, these are

a. Transaction Capabilities Application Part(TCAP) protocol

b. Mobile Application Part(MAP) protocol

c. **Both a & b**

d. None of these

250.MAP is used between _____in the form of query and response messages

a. MSC

b. VLR

c. HLR

d. AuC

e. **All of these**

251._____ Together with the MSC. Provide the call routing and roaming capabilities of GSM where a subscriber can roam nationally and even internationally

a. HLR

b. VLR

c. CLR

d. **Both a & b**

252.MSISDN stands for

a. **Mobile Subscriber ISDN Number**

b. Mobile Station ISDN Number

c. Mobile Switching ISDN Number

d. Mobile Standard ISDN Number

253.Which number caller used to reach a mobile subscriber

a. **MSISDN number**

b. IMSI number

c. TMSI number

d. MSRN

254.MSISDN number consists of

a. Country code(such as 91 for India)

b. National subscriber destination code

c. Subscriber number

d. **All of these**

255.Which number of MSISDN is the address of the GSM provider

a. Country code(such as 91 for India)

b. **National subscriber destination code**

c. Subscriber number

d. All of these

256.Which is a unique identification number allocated to each mobile subscriber

a. MSISDN Number

b. **IMSI Number**

c. TMSI Number

d. MSRN

257.It sits inside SIM card, which can be carried out anywhere and can be used in any MS

a. MSISDN Number

b. **IMSI Number**

c. TMSI Number

d. MSRN

258.The IMSI number consists of

a. MCC(Mobile Country Code consisting of three digits)

b. MNC(Mobile Network Code consisting of two digits)

c. MSIN(Mobile Subscriber Identity Number consisting of ten digits)

d. **All of these**

259.Which is used in the place of the IMSI for the definite identification and addressing of

the mobile station

a. MSISDN Number
b. IMSI Number
c. **TMSI Number**
d. MSRN

260.In TMSI nobody can determine the identity of the subscriber by listening to the _____

a. Video channel
b. **Radio channel**
c. Audio channel
d. None of these
e.

261.GSM used the _____ byte TMSI for local subscriber identification

a. 2
b. **4**
c. 6
d. 8

262.Which is a temporary location-dependent ISDN number assigned by the locally responsible VLR to each mobile station in its area

a. MSISDN Number
b. IMSI Number
c. TMSI Number
d. **MSRN**

263.The MSRN consists of

a. VCC(Visitor country code)
b. VNDC(Visitor national destination code)
c. The identification of the current MSC along with the subscriber number(SN)
d. **All of these**

264.GSM call may be classified into two types namely

a. MTC(Mobile Terminated Call)

b. MOC(Mobile Originated Call)

c. **Both a & b**

d. None of these

265._____ becomes necessary when mobile moves from area of one BSC into another area of the same or into another BSC

a. Handoff

b. **Handover**

c. Haddon

d. Handwork

266.Handover involves a number of procedures depending upon the location are

a. Intra-cell handover

b. Inter-cell, intra-BSC handover

c. Inter-BSC, intra-MSC handover

d. Inter MSC handover

e. **All of these**

267.Which involve the transfer of connections from one channel to another channel on the same BTS

a. **Intra-cell handover**

b. Inter-cell, intra-BSC handover

c. Inter-BSC, intra-MSC handover

d. Inter MSC handover

268.Which involve the transfer of the connection from one BTS to another BTS on the same BSC

a. Intra-cell handover

b. **Inter-cell, intra-BSC handover**

c. Inter-BSC, intra-MSC handover

d. Inter MSC handover

269.The connections is transferred between BTS belonging to two different BSCs within one MSC is called

a. Intra-cell handover

b. Inter-cell, intra-BSC handover

c. **Inter-BSC, intra-MSC handover**

d. Inter MSC handover

270.Which involve the transfer of a connection to a BTS between two cells within another MSC

a. Intra-cell handover

b. Inter-cell, intra-BSC handover

c. Inter-BSC, intra-MSC handover

d. **Inter MSC handover**

271.A collection of interconnected networks is known as

a. Internet

b. **Internetwork**

c. Network

d. Internetworking

272.The process of interconnecting different network is called

a. Internet

b. Internetwork

c. Network

d. **Internetworking**

273.The internetworking protocol is known as

a. SMTP

b. PPP

c. **TCP/IP**

d. NNTP

274.The Network element that connects individual network is known as

a. Gateway

b. Router

c. TCP/IP

d. **Both a & b**

275.If single computer network is divided into segments and router are added between them it forms an

a. Internet

b. **Internetwork**

c. Network

d. Internetworking

276.Which was used as original term for an internetwork which meant a method for connecting networks with disparate technologies

a. **Catenet**

b. Bridge

c. PANs

d. Novell netware

277. The computer network are of different types…some are

a. PANs(Personal Area Networks)

b. Novell Netware

c. **Both a & b**

d. None of these

278.The word Internet and internet are

a. **Different**

b. Same

c. Dependent on each other

d. None of these

279.Which signifies the specific network model

a. internet

b. **Internet**

c. Both a & b

d. None of these

280.Which means generic interconnection of networks

a. **internet**

b. Internet

c. Both a & b

d. None of these

e.

281.Which protocol provides a reliable data transfer

a. TCP
b. UDP
c. IP
d. **Both a & b**

282.Which protocol provides a unreliable data transfer

a. TCP
b. UDP
c. **IP**
d. Both a & b

283.Every computer has a unique address called

a. **IP**
b. UDP
c. TCP
d. None of these

284.The IP address lies between

a. 0 to 245
b. 0 to 254
c. **0 to 255**
d. 0 to 265
e.

285.DHCP stands for

a. **Dynamic Host Configuration Protocol**
b. Digital Host Communication Provider
c. Digital Host Communication Protocol
d. Dynamic Host Configuration Provider

286._____ is used for every computer needs one protocol stack for communicating on the Internet

a. **Protocol stack**

b. Protocol

c. Transmission protocol

d. None of these

287.Which protocol layer uses the protocols are WWW, HTTP, FTP, SMTP, e-mail etc

a. **Application Layer Protocol**

b. Transport Layer Protocol

c. Internet Layer Protocol

d. Hardware Layer

288.Which protocol uses TCP routes to an application on a computer by use of a port number

a. Application Layer Protocol

b. Transport Layer Protocol

c. Internet Layer Protocol

d. Hardware Layer

289.Which protocol moves IP packets to a specific computer by use of an IP address

a. Application Layer Protocol

b. Transport Layer Protocol

c. **Internet Layer Protocol**

d. Hardware Layer

290.Which contains network interface cards, modems for phones or wireless lines for converting binary packet data to network signals and vice versa

a. Application Layer Protocol

b. Transport Layer Protocol

c. Internet Layer Protocol

d. **Hardware Layer**

291.Hardware layer handle raw

a. Bytes of data

b. **Bits of data**

c. Both a & b

d. None of these

292.Where is the TCP layer is situated in the application layer in the protocol stack

a. **Below**

b. Top

c. Center

d. None of these

293.TCP uses port number to route correct application on the _____

a. Source computer

b. **Destination computer**

c. Both a & b

d. None of these

294.TCP is _____ in nature

a. Textual

b. **Not textual**

c. None of these

d.

295.TCP also contains a ___ checksum

a. **16bit**

b. 16byte

c. 32bit

d. 32byte

296.What is the port number of the HTTP

a. **80**

b. 25

c. 23

d. 20/21

297.What is the port number of the SMTP

a. **25**

b. 23

c. 20/21

d. 27960

298.What is the port number of the Telnet

a. 25

b. **23**

c. 20/21

d. 27960

299.What is the port number of the FTP

a. 25

b. 23

c. **20/21**

d. 27960

300.What is the port number of the Quake III Arena

a. 25

b. 23

c. 20/21

d. **27960**

301.TCP is _____

a. Connection-oriented

b. Reliable

c. **Both a & b**

d. None of these

e.

302.IP is _____

a. Connectionless

b. Unreliable

c. **Both a & b**

d. None of these

e.

303.IP does not ensure movement of a packet to its destination and have no knowledge of _____

a. Port numbers

b. Connections

c. **Both a & b**

d. None of these

e.

304.IP packets _____ arrive in the order in which it is sent

a. May

b. May not

c. **May or may not**

d. None of these

e.

305.SMDS stands for

a. Switched Multiple Data Services

b. **Switched Multimegabit Data Services**

c. Switched Multiple Double Services

d. Switched Multiple Data Subscriber

306.SMDS is a packet switched, high speed, connectionless public data service that extends

a. Local Area Network

b. Metropolitan Area Network

c. Wide Area Network

d. **All of these**

307.In SMDS, the service follows

a. **IEEE 802.6 DQDB(Distributed Queue Dual Bus)**

b. IEEE 802.5 DQDB(Distributed Queue Dual Bus)

c. IEEE 802.4 DQDB(Distributed Queue Dual Bus)

d. IEEE 803.6 DQDB(Distributed Queue Dual Bus)

308.The SMDS is defined for MAN under_____ standard

a. IEEE 802.5

b. IEEE 802.4

c. **IEEE 802.6**

d. IEEE 802.2

309.SMDS is capable of variety of technologies including

a. DQDB(Distributed Queue Dual Bus)

b. Broadband ISDN(B-ISDN)

c. **Both a & b**

d. None of these

310.North American implementation uses DQDB with DS1 at a data rate of

a. **1.5Mbit/s**

b. 45Mbits/s

c. 1.6Mbit/s

d. 46Mbit/s

e.

311.North American implementation uses DQDB with DS3 at a data rate of

a. 1.5Mbit/s

b. **45Mbits/s**

c. 1.6Mbit/s

d. 46Mbit/s

312.SMDS network also planned to link B-ISDN and SONET OC3 with a data rate of

a. 1.5Mbit/s

b. 45Mbits/s

c. **155Mbit/s**

d. 1.9Mbit/s

313.SMDS is a

a. **Data service**

b. Telephone service

c. Frame service

d. Video service

314.SMDS is a

a. Technology

b. Protocol

c. Both a & b

d. **None of these**

e.

315.The word CPE means

a. **Customer Premises Equipment**
b. Computer Premises Equipment
c. Customer Packet Equipment
d. Customer Protocol Equipment

316.The SMDS is designed to handle

a. Continuous traffic
b. Finite traffic
c. **Bursty traffic**
d. All of these

317.The telephone service is designed to handle

a. **Continuous traffic**
b. Finite traffic
c. Bursty traffic
d. All of these

318.In SMDS , the telephone number consists of

a. Country code
b. Area code
c. Subscriber code
d. **All of these**

319.The SMDS can serve

a. Only area
b. Only nationally
c. **Internationally**
d. None of these
e.

320.Address of source and destination in SMDS both consists of 4 bit code followed by a telephone no of max.

a. 12 decimal digits

b. 16 decimal digits

c. **15 decimal digits**

d. 20 decimal digits

e.

321.The SMDS is similar to which transfer mode

a. Synchronous transfer mode

b. **Asynchronous transfer mode**

c. Both a & b

d. None of these

322.SMDS make use of cell relay with _____ per cell

a. **53 octets**

b. 56 octets

c. 58 octets

d. 55 octets

e.

323.The data unit of SMDS can encapsulate frames of

a. IEEE802.3

b. IEEE802.5

c. FDDI

d. **All of these**

324.SMDS make use of

a. Copper

b. Fiber media

c. **Both a & b**

d. None of these

325.In SMDS, with a tick every 10msec user can send_____ on the average

a. **100,000 bytes/sec**

b. 10,000 bytes/sec

c. 100,0000 bytes/sec

d. 100,000,00 bytes/sec

326.Which means the network can expand with minimal investment

a. SNMP
b. **Scalability**
c. Screening
d. Simple
e.

327. Which is a network protocol that is based on UDP and is a component of the component of the Internet Protocol Suite, defined by IETF(Internet Engineering Task Force)

a. **SNMP**
b. Scalability
c. Screening
d. Multicasting
e.

328.The user can have access to high speed lines _____ connected to MAN

a. 32Mbits/s
b. 33Mbits/s
c. **34Mbits/s**
d. 35Mbits/s

329.The user can having access capacity of _____ connected to MAN

a. 151Mbits/s
b. 152Mbits/s
c. 154Mbits/s
d. **155Mbits/s**

330.The backbones of MAN has working data rate of _____

a. 139Mbits/s
b. **140Mbits/s**
c. 155Mbits/s
d. 134Mbits/s

331.User is charged for maximum rate of _____ bandwidth

a. 34Mbits/s

b. 4Mbits/s

c. 10Mbits/s

d. 16Mbits/s

e. 25Mbits/s

f. **Except (a) all are answers**

332.SMDS was primarily used for connecting

a. **LAN**

b. MAN

c. WAN

d. PAN

333.In SMDS, MAN interconnect

a. Ethernet

b. Token ring networks

c. **Both a & b**

d. None of these

334.SMDS networks have many underlying devices for supporting high-speed service are

a. Subscriber network interface(SNI)

b. Carrier equipment

c. Customer Premises Equipment (CPE)

d. **All of these**

335.CPE may be devices such as

a. PCs(Personal computers)

b. Intermediate nodes

c. Terminals

d. **All of these**

e.

336.Which are intermediate nodes provided by SMDS carrier

a. Multiplexers

b. Modems

c. Routers

d. **All of these**

337.PDUs contain

a. Source address

b. Destination address

c. **Both a & b**

d. None of these

338. Addressing in SMDS has provision for

a. Group addressing

b. Security features

c. **Both a & b**

d. None of these

339.In SMDS, there are two useful security features, namely

a. Source address validation

b. Address screening

c. **Both a & b**

d. None of these

340.CCITT stands for

a. Consultative Committee International for Telegraphy and Telephony

b. **International Consultative Committee for Telegraphy and Telephony**

c. International Consultative Committee for Telephony and Telegraphy

d. Consultative Committee International for Telephony and Telegraphy

341.X.25, it was developed for computer connections used for

a. Timesharing connection

b. Terminal connection

c. **Both a & b**

d. None of these

342.X.25 provides a virtual high-quality digital network at

a. **Low cost**

b. High cost

c. Medium cost

d. All of these

343.Which is another useful characteristics of X.25

a. Speed

b. Matching

c. **Speed matching**

d. None of these

344.In X.25 DTEs are not required to use the same line speed because of the

a. Store

b. Forward nature of packet switching

c. Excellent flow control

d. **All of these**

345. In X.25, A host connected at 56kbps and communicating with numerous remote sites can be linked with cheaper_____ lines

a. 18.2kbps

b. **19.2kbps**

c. 20.2kbps

d. 22.2kbps

346.In X.25 defines the protocols from

a. Layer 2 to Layer 3

b. Layer 1 to Layer 2

c. **Layer 1 to Layer 3**

d. Layer 3 to Layer 2

347.Based on X.25 rules, how many logical channel can be set on a single physical line

a. 256

b. 16

c. **4096**

d. 2556

e.

348.To enable control of 4096 logical channels in X.25, there are ____ channel groups

a. 256

b. **16**

c. 4096

d. 2556

349.Each logical channel group is divided into ____ logical channels

a. **256**

b. 16

c. 4096

d. 2556

350.The channel grouping in X.25 are known as

a. Logical channel group number(LCGN)

b. Logical channel number(LCN)

c. **Both a & b**

d. None of these

351.X.25 is a

a. **Protocol**

b. Data service

c. Telephone service

d. Technology

352.X.25 protocol was recommended by CCITT in

a. 1975

b. **1976**

c. 1977

d. 1978

353.X.25 protocol exchanged the data control information between

a. A node

b. A user device

c. **Both a & b**

d. None of these

354.The user device and node are properly referred to as

a. DTE

b. DCE

c. **Both a & b**

d. None of these

355.A terminal of 1.2kbit/s can communicate with host computer at _____ through the packet switched network

a. **9600bits/s**

b. 8600bits/s

c. 7600bits/s

d. 6600bits/s

356.The transmission speed of sender should be _____ as that of receiver in the X.25

a. **Same**

b. Different

c. Both a & b

d. None of these

357.X.25 make use of _____ service

a. Connectionless

b. **Connection-oriented**

c. Both a & b

d. None of these

358.PAD stands for

a. **Packet Assembly and Disassembly**

b. Procedure Assembly and Disassembly

c. Permanent Assembly and Disassembly

d. Package Assembly and Disassembly

359.X.25 supports two types of packet format named

a. Control packet

b. Data packet

c. **Both a & b**

d. None of these

e.

360.A X.25 packet make up the _____ of an HDLC frame

a. Frame field
b. Data field
c. Information field
d. **Both b and c are same**

361.Maximum packet sizes in X.25 vary from

a. 64bytes to 128bytes
b. **64bytes to 4096 bytes**
c. 64bytes to 256bytes
d. 32bytes to 64bytes

362.A X.25 protocol use

a. **Store and forward method**
b. Stop and wait method
c. Store and stop method
d. None of these

363.The advantage of X.25 are

a. Was developed to recover errors
b. Packet switching eases compatibility problems in communications between PCs
c. Packet switching cannot waste bandwidth
d. **All of these**

364.Frame relay constitutes of the OSI _____ layer

a. First
b. **Second**
c. Third
d. Fourth

365.Logical channels are identified by a number referred by

a. **DLCI(Data Link Connection Identifier)**
b. VLCI(Very Large Connection Identifier)
c. HDLC(High Level Data Link Control)
d. QLLC

366.DLCI can have a value between

a. 0 and 1025
b. 0 and 125
c. 0 and 256
d. **0 and 1023**
e.

367.The device which splits data into frames as well as combines frames into data is referred as

a. **FRAD(Frame relay and Disassembly)**
b. FDLC
c. HDLC
d. DLCI

368.Frame relay indicates network congestion using two flags namely _____ bits in data frames

a. Forward Explicit Congestion Notification(FECN)
b. Backward Explicit Congestion Notification(BECN)
c. **Both a & b**
d. None of these

369.Cell relay is data transmission services that uses transmission technology referred to as

a. **ATM(Asynchronous Transfer Mode)**
b. BTM
c. STM
d. DTM

370.The data transmission is a fixed length of data known as

a. **Cell**
b. Frame
c. Relay
d. Cell relay

371.Advantages of cell relay are

a. High-speed transmission

b. Multiplexing transmission

c. **Both a & b**

d. None of these

372.Disadvantages of cell relay are

a. Cell discarding occurs with congestion

b. High cost

c. **Both a & b**

d. None of these

373.The cell relay protocol corresponds to first ____ layer of OSI

a. One

b. **Two**

c. Three

d. Four

374.The part that corresponds to second layer, that is, data link layer is referred to as

a. DLC layer

b. **ATM layer**

c. STM layer

d. Protocol layer

375.In cell relay these logical channels are represented as

a. Virtual Channels(VCs)

b. Virtual Paths(VPs)

c. **Both a & b**

d. None of these

376.A VC is a virtual channel composed of

a. Frames

b. **Cells**

c. Relay

d. Protocol

377.VP is a bundle of

a. **VCs**

b. VCM

c. VCI

d. VIP

378.Identifiers are called _____ are used to identify VPS and VCs

a. VCIs

b. VIPs

c. **Both a & b**

d. None of these

379.In cell relay communication performed between

a. Two VP

b. **Two VC**

c. VP and VC

d. VP and VCI

380.ATM is an

a. International Telecommunication

b. International Telecommunication-Union

c. **International Telecommunication Union-Telecommunication Standardization Sector(ITU-T)**

d. International Telecommunication Union-Telecommunication

381.ATM networks are

a. Connectionless

b. Interconnected

c. **Connection oriented**

d. None of these

382.In today ATM, separate networks are used to carry _____ information mostly

a. Voice

b. Video

c. Data

d. **All of these**

383.Data traffic in ATM tend to be

a. Continuous

b. **Bursty**

c. Discontinuous

d. None of these

384.ATM cell has a fixed length of _____

a. 52bytes

b. **53bytes**

c. 54bytes

d. 55bytes

385.Which is a portion carries the actual information

a. **Payload(48bytes)**

b. Payment

c. Payroll

d. None of these

386.The purpose of ATM is to provide

a. High speed

b. Low-delay multiplexing

c. Switching networks

d. **All of these**

387.ATM is specifically designed as _____ technology for voice, video, and data

a. **Single**

b. Double

c. Multiple

d. None of these

388.ATM can support

a. Different speeds

b. Traffic types

c. Quality of service attached to applications

d. **All of these**

389.ATM cells coming from a user are guaranteed delivery at the other end with a

a. High probability

b. Low delay

c. **Both a & b**

d. None of these

390.The characteristics of ATM are as follows

a. The transport speeds of most ATM applications are most often 155Mbps and 622Mbps

b. ATM is a flexible service made possible by the size of the packets (cells).

c. The small cell size allows a variety of applications to run on ATM networks including voice, video and data

d. **All of these**

391.Narrow band ISDN provides for the following services

a. Circuit-switched voice

b. Circuit-switched data

c. Low-speed packet

d. High-speed packet

e. **All of these**

392.The cell relay is considered to be the _____ of the future

a. Transmission service

b. **Transport service**

c. Transfer service

d. None of these

393.ISDN is a group of _____ standards relating to digital transmission across conventional copper wire telephone lines, as also other media

a. CCITT

b. ITU

c. **Both a & b**

d. None of these

394.Narrow band ISDN is a digital service where the transport speeds are _____ (T1) or less

a. 1.533Mbps

b. **1.544Mbps**

c. 1.555Mbps

d. 1.552Mbps

395.The range of speeds for the broadband ISDN services usually range from _____ to the Gigabit range

a. 24Mbs

b. **25Mbs**

c. 26Mbs

d. 27Mbs

396.BRA stands for

a. **Basic Rate Access**

b. Basic Random Assembly

c. Bit Rate Assembly

d. Bursty Rate Assembly

e.

397.BRA affords an ISDN user with simultaneous access to two _____ data channels

a. 32kbps

b. **64kbps**

c. 128kbps

d. 256kbps

398.The ISDN Internetworking Equipment devices are

a. Terminal Adapters(TAs)

b. ISDN Bridges

c. ISDN Routers

d. **All of these**

399.Advantages of ISDN internetworking are

a. Quality

b. Economy

c. Availability

d. **All of these**

e.

400.ISDN connections mat be seen as very _____ digital conduits

a. High rate-of-error

b. **Low rate-of-error**

c. Both a & b

d. None of these

e.

401.Each channel in BRA is referred to as

a. A-channel

b. **B-channel**

c. C-channel

d. F-channel

402.The B-channel is capable of carrying both

a. Voice

b. Data

c. **Both a & b**

d. None of these

403.The Another channel in BRA(Basic Rate Access) is referred as D-channel Functions at

a. 12Kbps

b. 14Kbps

c. **16Kbps**

d. 18Kbps

404.The D-channel in BRA is used for sending and receiving signal between

a. User devices

b. ISDN

c. **Both a & b**

d. None of these

405.The total transmission rate of BRA workout to a combined total of

a. **144kbit/s**

b. 145kbit/s

c. 146kbit/s

d. 147kbit/s

406.BRA is also known as _____, as per CCITT

a. I.430

b. **I.420**

c. I.440

d. I.450

407.Which service provide up to thirty independent 64kbps B channels and a separate 64kbps D channel to carried the signaling

a. Basic rate access

b. **Primary rate access**

c. Both a & b

d. None of these

408.Primary rate access is also known as _____, as per CCITT

a. I.420

b. **I.421**

c. I.422

d. I.423

409.The CCITT eventually was reformed in to the group which is now called the _____

a. **ITU-T**

b. UIT-T

c. TIU-T

d. TUI-T

410.The two standards ISDN connectors are

a. RJ-45 type plug and socket uses unshielded twisted pair cable

b. One for accessing primary rate ISDN through a coaxial cable

c. **Both a & b**

d. None of these

411.ISDN can be accessed as per CCITT by using two service called

a. BRI(Basic Rate Interface)

b. PRI(Primary Rate Interface)

c. **Both a & b**

d. None of these

e.

412.BRI includes _____ B channels and _____ D channel

a. One , two

b. Two, three

c. **Two, one(may be written as 2B+D)**

d. Three, two

413.BRI providing data transmission speed of

a. 62kbps

b. 63kbps

c. **64kbps**

d. 65kbps

414.PRI is popularly referred to as _____ due to the number of channels as per CCITT

a. 20+D

b. **30+D**

c. 40+D

d. 50+D

415.PRI can carry up to 30 independent, _____ lines of data or voice channels

a. 62kbps

b. 63kbps

c. **64kbps**

d. 65kbps