CS601-Data Communication

MID TERM MCQS

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1)The original Ethernet technology with the data rate of 10Mbps is called_____?

a)Standard Ethernet

b)First Ethernet

C)Gigabit Ethernet

d)10 gigabit Ethernet

2)In pure ALOHA, vulnerable time is_____the frame transmission time.

a)same as

b)two times

c)three times

d)four times

3)Collisions in CSMA/CA are avoided through_____.

a)The interframe space

b)The contention window

c)Acknowledgement

d)All of the given

4)Which one of the following is a correct controlled access method?

a)Reservation

b)polling

c) token passing

d) all of the given

5)_____Works with topologies in which one device is designated as a primary station and other devices are secondary stations.

a)polling

b)token

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c) reservation

d) none of the given

6)In _____Each band is reserved for a specific station, time and it belongs to the station all the time.

a)FDMA

b)TDMA

c)CDMA

d)CSMA

7)In_____each station is forced to send a frame only at the beginning of time slot.

a)Pure Aloha

b) slotted Aloha

c) Fragmented Aloha

d) none of the given

8)A personal computer or workstation on an Ethernet network must have_____ card

a)TDI

b)NIC

c)PCI

d)None of the given

9)In the context of Ethernet implementations, maximum medium length of 10 Base F was_____ meters.

a)500

b)1000

c)2000

d)150

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10) What was the main drawback in Aloha Random-Access method?

a)Redundancy in data

b) inconsistent data rate

c) potential collision

d) all of the given

11)MAC address is of_____.

a)24 bits

b)36 bits

c)42 bits

d)48 bits

12) Collisions in CSMA/CA are avoided through _____.

a)The interframe space

b)Acknowledgements

c)The contention window

d)all of the given

13) Posts stand for

a)Plain old telephone set

b) plain old telephone service

c) plain old time sharing

d)Plain old telephone system

14)_____Random access method was initially designed for a radio wireless LAN but it Can be used on any shared medium now.

a)FDMA

b)CDMA/CD

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c)CDMA/CA

d)ALOHA

15) In _____ each station stands a frame whenever it has a frame to send.

a)Pure ALOHA

b)slotted ALOHA

c)Fragmented ALOHA

d)none of the given

16) In CSMA/CA, _____ is the amount of time divided into slots.

a)Contention window

b) interframe window

c) fragmented window

d) collided window

17) Normally the value of Kmax in pure ALOHA is _____ .

a)10

b)15

c)25

d)30

18) In which controlled-access method all data exchanges must be made through primary devices even when the ultimate destination is a secondary device?

a)Reservation

b)polling

c)Port forwarding

d)token passing

19)A personal computer or workstation on an Ethernet network must have _____ card

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a)TDI

b)NIC

c)PCI

d)none of the given

20)Which of the following is a Random-Access protocol?

a)CDMA/CA

b)ALOHA

c)CDMA/CD

d)TDMA

21)Transmission technology second(based on Ethernet) provides a data rate of 1 billion bits per second.

a)10Base-T Ethernet

b)standard ethernet

c)Fast Ethernet

d)Gigabit Ethernet

22)In Ethernet the source address field in the MAC frame is the _____address.

a)Sender's logical

b)Previous station's physical

c)Next destination's physical

d) sender's service port

23) _____was used as the medium in 10 Base-T.

a)thick coaxial cable

b)I thin coaxial cable

c)Twisted pair cable

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d) two mode fiber cable

24) In telephone network POP stand for_____?

a)Pride Of Place

b)Point Of Presence

c)Post order protocol

d)Proof Of Purchase

25)MAC address is of

a)24 bits

b)36 bits

c)42 bits

d)48 bits

26) In Ethernet frame, both destination and sender addresses are of length _____.

a)1byte

b)2 byte

c)4 byte

d)6 byte

27) When we represent the data in CDMA, if a ststement is idle then it sends_____ .

a)0

b)1

c)-1

d)infinity

28)_____ use fiber optic cable.

a)10Base 5

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b)10Base2

c)10Base-T

d)10BBase-F2

29)_____ Uses thick coaxial cable.

a)10 Base2

b)10Base5

c)10Base-T

d)10 Base-F

39)In _____ each station is allocated a time slot during which it can send data.

a)NDMA

b)FDMA

c)TDMA

d)CDMA

40)In_____ a station monitors the medium after it sends a frame to see if the transmission is successful.

a)CSMA/CD

b)CSMA/CA

c)CSMA

d)None of the given

41)Ethernet address is if _____ bytes.

a)4

b)6

c)8

d)12

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42) Fast Ethernet has data rate of _____Mbps.

a)10

b)100

c)1000

d)10000

43) In context of Ethernet address the source address is always a _____ address.

a)Unicast

b)Multicast

c)Broad-cast

d)128 bit address

44) In Hexadecimal notation of Ethernet address, each byte is separated by _____ symbol .

a)Question mark

b)Colon

c)Underscore

d)Hash

45) Normally the value of Kmax in pure ALOHA is _____

a)10

b)15

c)25

d)30

46) Possession of TOKEN gives the station the right to _____ .

a)Send data

b)receive data

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c)delete data

d)modify data

47) In _____ collision are avoided by differing transmission even if the channel is idle.

a)slotted frame

b)The deployment frame

c)The contention window

d)The interframe space

48)DSL stand for _____

a)digital subscribers line

b)digital switched line

c)data subscribers line

d) data switched line

49)_____ is the correct formula to calculate the total number of one system needed to connect in a mesh network.

a)N(N+1)

b)N-1

c)N+1

d)N×N

50) In transmission impairment _____ noise occurs from the random motion of electrons in a wire.

a)Induced noise

b)Thermal noise

c)Impulse noise

d)Cross talk

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51) Identify the correct formula to calculate propagation time.

a)propagation time = distance/propagation speed

b)propagation time = Bandwidth/propagation speed

c)propagation time =delay /propagation speed

d)propagation time = throughout/propagation speed

50)parabolic antenna is used for _____ communication.

a)micro wave

b)light wave

c)infrared wave

d)radio wave

51) At the application layer the object/information is in the form _____.

a)message

b)frame

c)segment

d)packet

52) During transmission _____ is the effect of one wire on the other .

a)Induced noise

b)Thermal noise

c)Crosstalk

d)impulse noise

53) If a digital transmission system is sending five bits in every half a second the bit rate of that system will be _____

a)10Hz

b)0.2bps

c)5bps

d)10bps

54) Two stations are connected via secure link in which messages are encrypted from source to the destination .This encrypted message is called_____.

a)message

b)plain text

c)protocol

d)cipher text

55)QAM stand for_____.

a)Quadrature amplitude modulation

b) Quadrature amplitude modifier

c) Quadrature amplitude modulator

d) Quadrature amplifier modulation

56) In _____ topology each computer is attached with other through a central device

a)Star

b)mesh

c)bus

d)Ring

57) When two peoples are talking with each other in a room then the transmission medium between them is _____.

a)No medium required

b)Air

c)wireless medium

d)cable

58) In baseband transmission, a digital signal is transmitted as _____

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a)digital signal

b)multiplexed signal

c)analog signal

d)modulate signal

59) In optical fiber a glass or a plastic core is surrounded by a _____.

a)insulator

b)outer conductor shield

c)Cladding

d)inner conductor shield

60) _____ signal completes certain pattern in specific amount of time .

a)APeriodic

b)periodic

c)non periodic

d) wavelength

61) The address of transport layer are in the form of _____.

a)Logical address

b)name

c)port numbers

d)link layer address

62) Which digital multiplexing technology is use to allow several connections to share the high bandwidth of a link?

a)FDM

b)ADM

c)TDM

d)WDM

63) In bidirectional communication each layer perform two _____ tasks in each direction.

a)opposite

b)similar

c)identical

d)complimentary

64)AMI is a popular _____ encoding method.

a)Polar

b)Bi-polar

c)Unipolar

d)substitution

65) In pulse code modulation the term sampling can also be referred as _____

a)Pulse amplitude modulation

b)pulse line modulation

c)pulse frequency modulation

d) pulse sampling modulation

66) Time taken by a periodic signal to complete one cycle is called _____.

a)period

b)routing

c)multiplexing

d)wavelength

67)_____ does not happen until all the data transferred and all the resources are freed.

a)Tear down

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b)acknowledgment

c)switching

d)resource allocation

68)_____ is the example of multipoint topology.

a)Mesh

b)Ring

c)Bus

d)Hub

69)A local telephone network use _____ network .

a)Line switched

b)bit switched

c)circuit switched

d)packet switched

70) _____ is the process of converting binary data to a digital signal.

a)ASK

b)QAM

c)Line coding

d)FSK

71)_____ category of coaxial cable is used for thick Ethernet.

a)RG-11

b)RG-58

c)RG-47

d)RG-58

72)_____ has less magnetic interface as compared to other guided medium.

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a)Unshielded twisted pair

b)Shielded twisted pair

c)Fiber optic

d)Coaxial

73)_____ relatively measure the strength of two signals.

a)decibel

b)signal rate

c)pulse rate

d)bit rate

78)_____ layer is responsible for creating datagrams .

a)physical

b)session

c)network

d)data link

79) Two PCs and one printer are connected in a network within a room, it is an example of _____

a)LAN

b)MAN

c)WAN

d)SONET

80) In _____ encoding scheme we use three levels positive, zero and negative.

a)polar

b)nonpolar

c)bipolar

d)multilevel

81) Which one of the following is not a bipolar encoding level?

a)Negative

b)one

c)positive

d)zero

82) According to stats fewer than _____ crossbar point can used at once.

a)14%

b)100%

c)30%

d)25%

83)TCP/IP protocol suite consists of _____ layers.

a)3

b)5

c)6

d)7

84) In single crossbar switch only_____ row(s) or column(s) is/are active at a time while others are not active .

a)four

b)two

c)one

d)three

85) We can have combination of_____ codes with a 5 bit code.

a)4

b)16

c)32

d)8

86) Bi polar uses _____ voltage level.

a)one

b)two

c)three

d)four

87) In statistical time division multiplexing, number of slots in frame are less than _____

a)output data rate

b)input lines

c)input frequency

d)multiplexed T lines

88) The communication at the Application, Transport and network layer is _____.

a)logical

b)physical

c)real

d)rational

89) If a digital signal has 'L' number of levels _____ is the number of bits required to represent each level.

a)log L

b)Log Base 2 L

c)L square

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d)Log (2*L)

90) Coaxial cables are categories by their _____ ratings.

a)EIA

b)FM

c)RG

d)AM

91) In frequency domain plot, which value is plot on Y axis.

a)time

b)frequency

c)amplitude

d)wavelength

92)A fiber optic cable transmit signal in the form of _____.

a)light

b)sound

c)wave

d) none of the given

93) In frequency modulation the frequency of the oscillator changes according to the _____.

a)output voltage

b)output frequency

c)input voltage

d)output phase

94) Routing is a function of _____ layer.

a)network

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b)physical

c)transport

d)datalink

95)BFSK stand for _____ .

a)Baud frequency shift key

b)Binary frequency shift key

c)Barrier frequency shift key

d)Bridge frequency shift key

96) There are _____ basic categories of multiplexing .

a)2

b)3

c)5

d)7

97) Most commonly used connector for twisted pair cable is_____ .

a)RJ-11

b)RJ-45

c)RJ-54

d)RJ-44

98)_____ technique does not follow analog to analog conversion .

a)QAM

b)AM

c)FM

d)PM

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99) In TDM based digital hierarchy used by the telephone companies, DS-0 is a single digital channel of _____.

a)1,544Mbps

b)128 kbps

c)64 kbps

d)32 kbps

100)A telephone line analog signal has got the bandwidth of _____.

a)8kHz

b)2kHz

c)16kHz

d)4kHz

101) In _____ TDM slots are dynamically allocated to the connected stations to improve bandwidth efficiency.

a)synchronous

b) statistical

c)Isochronous

d)none of the given

102)_____Is composed of thousands of interconnected network expanded over large geographical areas.

a)LAN

b)MAN

c)the internet

d)home network

103) We quantize the sampling out put into certain levels based on range of _____ and required accuracy.

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a)frequency

b)amplitude

c)time period

d) none

104) In serial data transmission _____ data transmission mode can be cheap but slower.

a)synchronous

b)Asynchronous

c)Isochronous

d)metaschrounous

105) In pulse code modulation technique technique, which approach will be the most appropriate for sampling _____

a)over sampling

b)under sampling

c)Nyquist sampling

d)Analog sampling

106)_____ signal is represented by the discrete values.

a)analog

b)digital

c)both

d)continuous

107) Which of the following techniques is use for analog to digital conversion?

a)PCM

b)DM

c)both PCM and DM

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d)BDM

108)_____ category of ciaxial cable is used for thin Ethernet .

<mark>a)RG-58</mark>

b)RG-59

c)RG-40

d)RG-1

109) Unipolar encoding scheme uses _____ voltage level.

a)one

<mark>b)two</mark>

c)three

d)four

110) In _____ scheme all the signal levels are on the side of time axis, either above or below .

<mark>a)polar</mark>

b)bipolar

c)unipolar

d)multiplexed coding

111)_____ mode of serial transmission guarantees fixed rate data.

a)synchronous

b)Asynchronous

<mark>c)Isochronous</mark>

d)Metaschrounous

112)electromagnetic waves ranging from 0z and 300GHz are called _____.

<mark>a)microwave</mark>

b)light wave

c)Infrared wave

d)radio wave

113)_____ is used where data speed is priority in data transfer.

a)serial data transmission

b)hybrid data transmission

c)parallel data transmission

d)both parallel and serial transmission

114) In transmission impairment _____ occur from a signal with a high energy and with a short period of time.

a)impulse noise

b)thermal noise

c)induced noise

d)cross talk

115) In star based network comprising of four computer and one switch total number of cables needed will be_____.

a)4

b)5

c)6

d)3

116) The most upper layer of TCP/IP protocol suite is the_____.

a)application

b)transport

c)network

d)data link

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117) In analogue hierarchy to carry voice channels, a group can carry _____ voice channels .

a)60

b)12

c)20

d)10

118) Bandwidth can be measured in_____.

a)Bps

b)phase

c)lambda

d)decibel

119) Unit of phase is _____.

a)bits per second

b)watts

c)baud

d)degree

120) _____ is sometimes called the bit rate.

a)signal rate

b)modulation rate

c)data rate

d)pulse rate

121) In _____ data moves faster and timing errors are less frequent because the transmitter and receivers time is synced.

a)Isochronous

b)synchronous

c)Asynchronous

d)Metaschrounous

122) Manchester encoding scheme achieves the same level of synchronization as _____.

a)RZ

b)differential Manchester

c)NRZ-1

d)NRZ

123) _____ is not the advantage of protocol lyring.

a)Modularity

b)reduced complexity

c)reduced cost

d)none

124) In TCP/IP model physical layer exchange data in the form of_____.

a)Packet

b)frame

c)bits

d)segments

125) In amplitude shift keying _____ remains constant .

a)Phase

b)frequency and amplitude

c)frequency and phase

d)amplitude

126) Multimode technology has _____ main type of light propagating .

a)two

b)three

c)four

d)five

127) Bandwidth in hertz is the range of _____ contained in a composite signal.

a)signal

b)frequencies

c)amplitude

d)phase

128) The size of the packet is determined by network and _____.

a)govern time

b)instructions

c)switching time

d)delay

129)_____ means loss of energy in signals.

a)attenuation

b)noise

c)delay

d)distortion

130) In circuit switching total delay is combination of connection time, data transfer time and_____.

a)connection tear down time

b)switching time

c)receiving time

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d)acknowledgment time

131) In circuit switched network we have low efficiency and minimal _____ .

a)speed

b)delay

c)throughout

d)errors

132) There is layer to layer connection between every peer station, this imaginary connection between each layer is termed as _____ .

a)Logical connection

b)Physical connection

c)Practical connection

d)None of the given

133) In virtual circuit approach when a frame enters a switch and when it leaves the circuit then its VCI _____ .

a)always changes

b)remain same

c)sometimes changes

d)remain the same

134) When data is received or sent using _____ the data bits are organized in a specific order, since only they can be sent or received one after another .

a)parallel data transmission

b)serial data transmission

c)hybrid data transmission

d)both parallel and serial transmission

135) Cellular telephone uses _____ waves for communication .

a)light wave

b)infrared waves

c)microwaves

d) Radio waves

136) According to the Fourier analysis frequencies obtained after decomposition of digital signals are_____.

a)continuous

b)discrete

c)homogeneous

d)bit length

137)_____ is a multiplexing technique which shift each signal to a different carrie frquency.

a)FDM

b)TDM

c)WDM

d)PDM

138) Packet switching operates on _____ layer.

a)network layer

b)physical layer

c)data link layer

d)application layer

139) When the bandwidth of a link is greater than the combined bandwidth of a signal we use _____ multiplexing .

a)wavelength division

b)time division

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c)frequency division

d)hybrid division

140) If 32 bits are sent in two seconds then the bitrate for that signal is _____.

a)8bps

b)16bps

c)32bps

d)64bps

141)_____ signal can take infinite level of intensity over time .

a)digital

b)discrete

c)analog

d)logical

142) Electromagnetic wave ranging in 3khz and 1gHz are called _____.

a)infrared waves

b)light wave

c) radio wave

d)microwave

143) Microwaves are _____.

a)unidirectional

b)bi directional

c)Omni directional

d)all directional

144)A fiber optic cable transmits signals in the form of _____.

a)light

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b)sound

c)wave

d)none of the given

145) Simultaneous transmission of multiple signals across a single data link is called_____.

a)Demultiplexing

b)multiplexing

c)modulation

d)demodulation

146) Multimode technology has _____ main type of light propagating .

a)two

b)three

c)four

d)five

147) Set of rules to be followed for effective communication is called _____.

a)Topology

b)protocol

c)switching

d)Encryption

148) Which multiplexing technique involves signals composed of light beam?

a)FDM

b)TDM

c)WDM

d)PDM

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149) Time division multiplexing technique is used in _____ system.

a)analog

b)hybrid

c)digital

d)automated

150) Which of the following technique is used for analog to digital conversion .

a)PCM

b)DM

c)BDM

d)both PC and DM

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HERE IS STARTING GRAND QUIZ FILE

Which one of following is a scrambling coding technique?

- o **B8ZS**
- o B8SZ
- o B08SZ
- o BZ8S

According to the Fourier analysis, frequencies obtained after decomposition of digital signals are_____.

- o Continuous
- o **Discrete**
- o Bit length
- o Homogeneous

Low pass channel has_____bandwidth between two stations.

- o Dedicated
  - **Shared**
- o Multiplexed
- o Infinite

_____is the heart of blocking code.

- o **Coding**
- o Division
- o Substitution
- o Multiplication

Wireless transmission can be divided into_____broad groups.

- o Two
- o **Three**
- o Four
- o Five

Wiring used for transmission modes depends upon_____.

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- o **Latency**
- o Data Stream
- o Data sniffing
- o Packet Tracing

If a digital transmission system is sending five bits in every half a second, the bit-rate of the system.

5 bps
- o 10 Hz
- o 0.2 bps
- o 10 bps

If the message going to pass through a packet-switched network, it can be divided into packets of_____.

- o Fixed size
- o Variable size
- o **Both fix and Variable size**
- o None

In an analogue hierarchy to carry voice channels, a group can carry____voice channels.

- o 60
- o **12**
- o 20
- o 10

1. **In optical fiber a glass or plastic core is surrounded by a_____.**
- o **Cladding**
- o Outer conductor shield
- o Inner Conductor shield
- o Insulator

In transmission impairments_____noise occurs from other sourcelike

- o Impulse
- o **Induced**
- o Cross talk
- o Thermal

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_____is a digital process that allows connections to share the high bandwidth of a link.

- o FDM
- o **TDM**
- o WDM
- o None of the choices is correct

Bandwidth in hertz in the range of_____contained in a composite signal.

- o Signals
- o Phases
- o Amplitudes
- o **Frequencies**

LAN stands for_____.

- o Logical area network
- o Long-distance Area Network
- o **Local Area Network**
- o Long Area Network

Demultiplexer is a_____device.

- o **One to many**
- o Many to many
- o One to one
- o Many to many

Mr. Asif while sitting in Lahore is linking with his friend in Dubai through Skype isa_____.

- o Local Area Network
- o Metropolitan Area Network
- o **Wide Area Network**
- o Home Based Network

In_____modulation, frequency and amplitude remain constant.

- o Phase
- o Frequency
- o **Amplitude**
- o Quadrature

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In TDM based digital hierarchy used by the Telephone companies, DS-0 is a single digitalchannel of_____.

- o 1.544 Mbps
- o 128 kbps
- o **64 kbps**
- o 32 kbps

The bandwidth-delay product defines the number of bits that can fill the_____.

Link
- o Network
- o Hub
- o Switch

If a digital-signals has four levels, then we need_____bits to represent each level.

- o **2**
- o 3
- o 4
- o 5

Routing is a function of_____layer.

Network
- o Physical
- o Transport
- o Datalink

_____relatively measure the strength of two signals.

- o Signal rate
- o Bit rate
- o **Decibel**
- o Pulse rate

Taking off the header from the message is called_____.

- o Layering
Encryption
- o Decapsulation
- o Stuffing

Which of the following is not a characteristic of a sine wave?

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- o Amplitude

Segmentation

- o Phase
- o Frequency

In frequency domain plot, which value is replaced with frequency?

Wavelength

- o Amplitude
- o Phase
- o Time

_____ is the process of converting binary data to a digital signal.

- o QAM
- o ASK
- o FSK
- o **Line coding**

Low pass channel with_____ bandwidth is not real and is used for theoretical modeling.

- o Multiplex
- o Infinite
- o Ethernet
- o **Narrow**

HDB3 falls under which coding scheme?

Bipolar

- o Bi phase
- o Line
- o Block

Unit of phase is_____.

- o Bits per second
- o Watts
- o Bauds
- o **Degree**

BFSK stands for_____.

- o Baud Frequency Shift Key

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- o **Binary Frequency Sif t Key**
- o Barrier Frequency Shift Key
- o Bridge Frequency Shift Key

_____is NOT an example of connecting device.

- o Bridge
- o Router
- o **TCP**
- o Switch

Coaxial cables are categorized by their_____ratings.

- o Electronic Industries Association (EIA)
- o Amplitude modulation (AM)
- o Frequency modulation (FM)
- o **Radio Government (RG)**

_____is Shannon capacity formula to determine highest theoretically data rate for a noisy channel.

- o Capacity=Bandwidth*(1+SNR)
- o Capacity=Bandwidth*log2(2+SNR)
- o Capacity=Bandwidth*log2(SNR)

Capacity=Bandwidth*log2(1+SNR)

Which one of the following is not among the required phases for the actual communicationin a circuit switched network?

- o Setup
- o Data transfer

Protocol

- o Connection teardown

A common bipolar encoding scheme is called_____.

AMI

- o NRZ
- o RZ
- o QAM

A telephone line analog signal has got the bandwidth of_____.

- o 8 kHz

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- o **2 kHz**
- o 16 kHz
- o 4 kHz

In_____systems, resources are allocated on demand.

- o Frequency switching
- o Line switching
- o **Circuit switching**
- o Packet switching

A fiber-optic cable transmit signals in the form of_____.

- o **Light**
- o Sound
- o Waves
- o None of the given

Composite wave can be used to send_____.

- o Bandwidth
- o Telephone
- o Amplitude
- o **Frequency**

Routing is the function of_____layer.

- o **Network**
- o Physical
- o Transport
- o Data link

A virtual-circuit network operates on_____layer.

- **Datalink**
- o Network
- o Physical
- o Application

In TCP\IP model, the Physical Layer exchanges data in the form of_____.

- o Packets
- o Frames
- o **Bits**

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o   Segments

_____ signal completes certain pattern in a specific amount of time.

o   Non-periodic
o   **Periodic**
o   A Periodic
o   Wavelength

Narrow bands of lights in wave division multiplexing are denoted by_____.

o β
o $\cap$
o α
o   ████████████████

If a digital signal has four levels, the we need_____bits to represent.

████████ **2** ████████
o   3
o   4
o   5

We can have combination of_____possible codes with a 5-bit code.
o   4
o   8
o   18

o   **32**

There are_____categories of multiplexing.

o   2
o   **3**
o   7
o   5

Top most organization that provides support for the Internet Standard process is called_____.

o   Internet Society (ISOC)
o   Internet Architecture Board (IAB)

IETF

o IRTF

If the message is going to pass through a packet-switched network, it can be divided into packets of_____.

o Fixed size
o Variable size
o **Both-fix and variable size**
o None

_____data moves faster and timing errors are less frequent because the transmitter and receiver time is synced.

o Synchronous
o Asynchronous
o **Isochronous**
o Metachronous

In frequency modulation, the frequency of the oscillator changes according to the_____.

o Output Voltage
o Output Frequency
o **Input Voltage**
o Output Phases

Binary Amplitude Shift Keying also called as:

o Dual Keying
o On-In Keying
  On-Off Keying
o In-Out Keying

_____signals can take infinite levels of intensity over time.

o Digital
o Discrete
o **Analog**
o Logical

Bi-polar uses_____voltage levels.

o One
o **Two**

- o Three
- o Four

In serial data transmission＿＿＿＿＿data transmission mode can be cheap but slower.

- o Synchronous
- o **Asynchronous**
- o Isochronous
- o Metachronous

In star-based network comprising of four computers and one switch, total number of cable needed will be＿＿＿＿＿.

- o **4**
- o 5
- o 6
- o 3

Parabolic antenna is used for＿＿＿＿＿communication.

- o Infrared waves
- o **Microwave**
- o Light wave
- o Radio wave

In circuit switching total Delay is combination of Connection Time and＿＿＿＿＿.

- o Switching time
- o Acknowledgement time
- o Receiving time
- o **Connection tear down time**

Guard bands are used in＿＿＿＿＿multiplexing technique, to avoid overlapping of frequency bands assigned to each user.

- o PDM
- o CSMA
- o TDM
- o **FDM**

Datagram switching is done on＿＿＿＿＿.

- o Application Layer
- o Datalink Layer

- Physical Layer
- **Network Layer**

Token Ring was devised by_____.

IBM

- OSI
- Dell
- NASA

In TDM based digital hierarchy used by the Telephone companies, DS-0 is a digital channelof_____.

- **1.544 Mbps**
- 128 kbps
- 64 kbps
- 32kbps   Repeated

_____can be published using Request for Coments (RFCs).

- Proposed Standard
- Draft Standard
- **Internet Draft**
- Internet Standard

In transmission impairments_____noise occurs from the random motion of electrons in a wire.

- **Thermal noise**
- Impulse noise
- Cross talk
- Induced noise

In ASK correct formula for calculating the bandwidth is as_____-.

- **B=(1*d)S**
- B=(d-1)S
- B=(d-5)S

Which one of the following is among the required phases for the actual communication in a circuit switched network?

- Setup
- **Data transfer**

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- o Protocol
- o Connection tear down

According to the Fourier analysis, frequencies obtained after decomposition of non-periodic digital signals are_____.

- o **Bit length**
- o Automatic
- o Heterogenous
- o Continuous

The most common type of connector used by the coaxial cable is_____.

- o **BNC**
- o RJ-45
- o RJ-11
- o RJ-57

When data is sent or received using_____the data bits are organized in a specific order, since they

- o Parallel data transmission
- o **Serial data transmission**
- o Hybrid data transmission
- o Both parallel and serial data transmission

_____have established standards for using these signals for communication between devices such as keyboards, mice, PCs, and printers.

- o Microwave
- o **Infrared waves**
- o Simple waves
- o Radio waves

In case of Frequency shift key, the difference between two frequency is representedas

_____.

- o **2Δ**

- o 3Δ

- o 6Δ

- o $2\times5\Delta$

_____category of coaxial cable is used for thin Ethernet.

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- o **RG-58**
- o RG-59
- o RG-1
- o RG-47

Cellular telephone uses_____waves for communication.

- o Light waves
- o Infrared waves
- o **Radio waves**
- o Microwaves

_____mode of serial transmission guarantees fixed rate data.

- o Synchronous
- o Asynchronous
- o **Isochronous**
- o Metasochronous

Router is a network device which operates on the_____layers of the TCP\IP protocolsuit.

- o Application
- o Transport
- o **Network**
- o Presentation

_____layer is responsible for the creating of the datagrams.

- o Physical
- o Data link
- o Session
- o **Network**

Narrow bands of light in waves division multiplexing are denoted by_____.

- o β
- o $\cap$
- o α
- o λ Repeated

In virtual circuit approach when a frame enters a switch and when it leaves a switch its VCI always_____.

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- o Always changes
- o Sometimes changes
- o Sometimes Remain Same
- o **Remain the same**

According to stats, fewer than_____crossbar points can be used at once.
 14%

- o 100%

- o 30%

- o **25%**

If data rate is to be 1 Mbps then what will be the minimum bandwidth required for NRZ-1 coding scheme?

- o 1Khz
- o 200Khz
- o 500Khz
- o 0.5khz

Data format used at Transport layer of TCP\IP protocol suit is called_____.

- o **Packet**
- o Frame
- o Bit
- o Segment

A virtual circuit network operates on_____layer.

- o Data link
- o Network
- o **Application**   Repeated

If 32 bits are sent in two seconds then the bitrate for that signal is_____.

- o 32 bps
- o 64 bps
- o 8 Hz
- o **16 bps**   Repeated

Cable TV networks use_____cables.

- o **Coaxial**

- o UTP
- o STP
- o Twisted pair   Repeated

_____normally used for long-distance data transfer.

- o Parallel data transmission
- o Serial data transmission
- o Hybrid data transmission
- o **Both parallel and Serial data transmission**   Repeated

_____is a block coding method.

- o NRZ
- o NRZ-1
- o **8B\10B**
- o 8B\12B

TCP\IP was chosen to be the official protocol of internet_____.

- o 1973
- o 1980
- o **1983**
- o 1988

To measure the data rate_____theoretically formula(s)Were developed.

- o One
- o Two
- o Three
- o **Four**   Repeated

In FSK, Baud rate is less than or equal to_____rate.

- o Signal
- o Decibel
- o Bit
- o **None of these Given**   Repeated

_____signal is represented by the discrete values.

- o Analog
- o **Digital**

- o Both
- o Continuous

Electromagnetic waves ranging in frequencies between 3 kHz and 1 GHz are called_____.

- o Infrared waves
- o **Radio waves**
- o PCLight waves
- o Microwaves

Suppose a signal is amplitude then the value od decibel will be_____.

- o 0
- o 1
- o Negative
- o **Positive**   Repeated

_____technique does not follows analog conversion.

- o **QAM**
- o AM
- o FM
- o PM
- o Repeated

In Pulse Code Modulation (PCM), the sampling is dependent on_____.

- o Time
- o **Amplitude**
- o Frequency
- o Signal Rate

_____is the sub type of Time Division Multiplexing Technique.

- o Amplitude TDM
- o Light TDM
- o **Statistical TDM**
- o Barrier TDM

Modulation of analog signal is needed if the medium is_____in nature.

- o **Bandpass**

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- o Low-pass
- o Bi-pass
- o High-pass

Quadrature Amplitude Modulation (QAM) is the combination of_____and
_____.

- o FSK-PSK
- o PSK-FSK
- o ASK-PSK
- o **ASK-FSK**

There_____components of data communication system.

- o 4
- o **5**
- o 6
- o 7

QPSK stands for_____.

- o Quality phase shift key
- o Queuing phase shift key
- o **Quadrature phase shif t key**
- o Quality physical shift key

To calculate the data rate for noisy channel_____formula is used.

- o **Shannon**
- o Nyquist
- o Propagation
- o Greedy

Most commonly used connector for twisted pair cable is_____.

- o RJ-11
- o **RJ-45**
- o RJ-44
- o RJ-52

Binary Amplitude Shift Keying is also called as:

- o Dual Keying
- o On-In Keying

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- o **On-Off Keying**
- o In-Out Keying

Some manufacturers provide a special port called the_____.

- o **IrDA**
- o Consol
- o Parallel
- o USB

To calculate the data rate for noiseless channel_____formula is used.

- o Ready
- o Shannon
- o **Nyquist**
- o Propagation

Two PCs and one printer are connected in a network within a room, it is an example of _____.

- o **LAN**
- o WAN
- o MAN
- o SONET

Analog the following cables given,_____cable provides highest bandwidth and less attenuation.

- o UTP
- o Coaxial cable
- o Coaxial cable
- o **Fiber optical**

To calculate the data for noisy channel_____formula is used.

- o **Shannon**
- o Nyquist
- o Propagation
- o Greedy

In circuit switched networks we have low efficiency but minimal_____.

- o **Delay**
- o Speed

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- o Throughput
- o Errors

Signals travel through fiber optic cable are in the form of_____.

- o **Light**
- o Bits
- o Electromagnetic
- o Bytes

Polar encoding scheme uses_____voltage level.

- o 0
- o **1**
- o 2
- o 3

TCP\IP protocol suit consists of_____layers.

- o 3
- o **5**
- o 6
- o 7

Bandwidth in hertz is the range of_____contained in a composite signal.

- o Signals
- o Phases
- o Amplitudes
- o **Frequencies**

_____is an example of a host in a network.

- o Router
- o **Computer**
- o Bridge
- o Hub

Set of rules to be followed for effective communication is called_____.

- o Topology
- o **Protocol**
- o Switching
- o Encryption

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_____is NOT an example of a connecting device.

- o Bridge
- o Router
- o **TCP**
- o Switch

When an antenna transmits radio waves, they are propagated in_____.

- o All directions
- o Left directions
- o Right directions
- o **Only up and down direction**

Which one of the following is not a bipolar encoding level?

- o Negative
- o **One**
- o Zero
- o Positive

_____and_____are the two types of addressing in virtual circuit approach.

- o **Local, Global**
- o Private, Public
- o Variable, Dynamic
- o   Dependent, Independent

In transmission implements_____noise occurs from other sources like motors and appliances etc.

- o Impulse
- o Inductive
- o **Cross talk**
- o Thermal

In computer network the stations are connected to each other in such a way that eachstation is connected to every other station through dedicated links. This makes_____.

- o **Bus**
- o Ring
- o Star
- o Mesh

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In scrambling coding scheme, the number of pulses replacing the bits will be_____?

o **Equal to pulses**
o Double the pulses
o Half of the pulses
o Triple the pulses

In the context of analog to analog signal conversation technique. "PM" Stands for_____.

o Pulse Modulation
o **Phase modulation**
o Parse modulation
o Popular modulation

_____relatively measurement the strength of two signals.

o Signals
o Bit rate
o **Decibel**
o Pulse rate

Datagram approach and circuit approach are two popular approaches which lead usto _____.

o Line switching
o Circuit switching
o Dynamic switching
o **Packet switching**

If data is to be 1 Mbps then what will be the minimum bandwidth required for NRZ-I coding scheme?

o 1Khz
o 200Khz
o 500khz
o 0.5khz

In virtual circuit approach when frame enters a switch and when it leaves a switch its VCi always_____.

o Always Changes
o Sometimes Changes

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- o Sometimes Remain Same
- o **Remain the Same**

A common bipolar coding scheme is called_____.

- o **AMI**
- o NRZ
- o RZ
- o QAM

_____means loss of energy in signal.

- o Noise
- o Delay
- o **Attenuation**
- o Distortion

The conversion of analog simple of the signal into digital form is called _____ process.

- o Quantizing
- o **Sampling**
- o Modulation
- o Quantizing and Sampling

A local telephone network use_____network.

- o Line switched
- o Packet switched
- o **Circuit switched**
- o Bit switched

In Amplitude Shift Keying._____of the signal is/are changed.

- o Amplitude and Frequency
- o **Amplitude**
- o Frequency and Amplitude
- o Phase

In frequency domain plot, which value is plot on Y-axis?

- o Time
- o Frequency
- o **Amplitude**

o   Wavelength

In pulse code modulation the term sampling can also be referred as_____.

o   **Pulse Amplitude Modulation**
o   Pulse sample Modulation
o   Pulse line modulation
o   Pulse Frequency Modulation

Switch is a network device which operates on the_____layer of TCP/IP protocolsuit.

o   Application
o   Transport
o   Presentation
o   **Data link**

In analog transmission of digital data, the required bandwidth is always proportional to the signal rate expect in_____a digital to analog conversion technique.

o   **ASK**
o   FSK
o   PSK
o   NSK

WDM stands for_____.

o   Wideband De-Modulation
o   Worst Data Manipulation
o   **Wavelength Division Multiplexing**
o   None of the Choices is correct

_____does not follows analog to analog conversion.

o   **QAM**
o   AM
o   FM
o   PM

On a communication link, different channels are separates by unused strips of bandwidth called as_____.

o   Base band
o   Broad band

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- o Null band
- **o Guard band**
- o

_____layer converts frames coming from Data Link Layer into bits and sends

Them on the transmission medium.

- o Application
- o **Physical**
- o Network
- o Transport

Wavelength binds the_____of a simple sine wave to the propagation speed of the medium.

- o Phase
- o **Period of the frequency**   book page 61
- o Amplitude
- o Bandwidth

The bandwidth delay product define the number of bits that can fill the_____.

- o Link
- o **Network**
- o Hub
- o Switch

The size of the packet determined by the network and_____.

- o Delays
- o Switching
- o Instructions
- **o Governing protocol**
- o

To improve the performance of line coding_____coding was……?

- o **Block coding**
- o MLT-3
- o 2BIQ
- o Double coding

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Which one of the following is not a sampling technique?

- o Flat Top Sampling
- o **Neutral sampling**
- o Natural sampling
- o Ideal sampling

_____is normally used where speed is priority in data transfer.

- o Serial data transmission
- o **Hybrid transmission**
- o Parallel transmission
- o Both parallel and serial transmission

In a computer network, five stations are connected to each other in such a way that each station is connected to every other station through dedicated links. This makes_____topology.

- o Bus
- o Ring
- o Star
- o **Mesh**

Some manufacturer provide a special port called the_____port that allows a wireless keyboard to communicate with a PC.

- o **IrDA**
- o Consol
- o Parallel
- o USB

Current technology supports_____modes for propagation of light.

- o **Two**
- o Three
- o Four
- o Five

We quantize the sampling output into certain levels based on range of_____and required accuracy.

- o Frequency
- o **Amplitude**
- o Time period

o None

_____ is the Nyquist bit rate formula for noiseless channel.

o **BitRate=2*Bandwidth*log2 L**
o BitRate=2*Bandwidth*logL
o BitRate=2*Bandwidth*log2L
o BitRate=2*Bandwidth*L

A frequency is called_____, if the rate of change in sine wave Is Instantaneous.

o **Infinite frequency**   book page 59
o Zero frequency
o Bandwidth
o Frequency hertz

Which multiplexing technique involves signals composed of light beams?

o FDM
o TDM
o **WDM**
o PDM

_____ is a multiplexing technique which shifts each signal to a different carrier frequency.

o **FDM**
o TDM
o WDM
o PDM

Entire band in United States is regulated by_____ authorities.

o **FCC**
o ITU
o NASA
o ANSI

Two stations are connected via a secure link in which messages are encrypted from source to the destination message is called------------------

o Plain text
o Cipher test

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- o   Message
- o   **Protocol (not confirm)**

Simultaneous transmission of multiple signal across a single data link is called-------

- o   Demultiplexing
- o   **Multiplexing**
- o   Modulation
- o   demodulation

in NRZ-1 the signal is inverted if----------- is encountered.

- o   0
- o   **1**
- o   00
- o   11

--------------- Protocol suite is being used by the modern internet communication.

- o   OSI
- o   **TCP/IP**
- o   ARPANET
- o   Telnet

In the frequency shift keying, ------------ remain(s) constant.

- o   Frequency
- o   **Amplitude**
- o   Both amplitude and phase
- o   Both phase and frequency

In ---------- signal changes its shape or form.

- o   Thermal noise
- o   **Distortion**
- o   Impulse noise
- o   Attenuation

-------------- coding scheme are useful for LAN but not for long ranges.

- o   **Biphase   book page 113**
- o   Line
- o   Vector
- o   Serial

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In --------------TDM, each input connection has an allotment in the output even if is not sending data.

o Asynchronous
o Statistical
o **Synchronous (Book page 164)**
o Isochronous

-------------------- is a type of serial transmission in which data bits are transmitted as a continues stream in time with a master clock. Start bits, stop bits, and gaps are not used. Transmitter and receiver time is sync.

o Synchronous
o Asynchronous
o **Isochronous**
o Metasochronous

------------- Relative measures the strength of two signals.

o Signal rate
o Bit rate
o **Decibel**
o Pulse rate

When the bandwidth of a link is greater than the combined bandwidths of the signals, we use----------------multiplexing.

o Wavelength division
o **Frequency division**
o Time division
o Hybrid division

------------ is an example of host in a network.

o Router
o **Computer**
o Bridge
o Hub

On a communication link, different channels are separated by unused strips of bandwidth called as ....

o Base band
o Broad band

- o Null
- o **Guard band**

The conversion of analog sample of the signal into digital form is called ------------process.

- o Quantizing
- o Sampling
- o Modulation
- o **Quantizing and sampling (Book pages 115 to 116)**

In star based network comprising of four computers and on switch, total number of cables needed will be ----------

- o **4**
- o 5
- o 6
- o 3

The logical connection between the peer layers is -----------connection.

- o Physical
- o **Direct   (no strong reference but as per book explanation layer to layer isdirect)**
- o Indirect
- o Tangible

According to stats, lower than --------------- crossbar point can be used at once .

- o 14%
- o 100%
- o 30%
- **o 25%**

-------------- Category of coaxial cable is used for cable TV.

- o RG-58

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- o **RG-59**
- o RG-11
- o RG-47

-------------- is sometimes called the bit rate.

- o Signal rate
- o Modulation rate
- o **Data rate**
- o Pulse rate

Uni polar, polar and bipolar are the types of --------------

- o Line
- o Differential Manchester
- o **NRZ-I**
- o Block

Router is a network device which operates on the -------------layer of the TCP/IP protocol.

- o Application
- o Transport
- o **Network**
- o Presentation

According to the Fourier analysis, frequencies obtained after decomposition of no period.

- o Bit length
- o Automatic
- o Heterogeneous
- o **Continuous** (Fourier analysis can be used to decompose a digital signal. Ifthe digital signal is
    periodic, which is rare in data communications, the decomposed signalhas a frequencydomain

    representation with an infinite bandwidth and discrete frequencies. Ifthe digital

    signal is nonperiodic, the decomposed signal still has an infinitebandwidth, but the frequencies

    are continuous page 70 Data communication Book 5th generation)

When the bandwidth of a link is greater than combined bandwidths of the

- o Wavelength division
- o **Frequency division**
- o Time division

o Hybrid division

The -------------- technique expands the bandwidth of a signal by replacing each data bit with n bits using a spreading code.

o FDM
o FHSS
o TDM
o **DSSS**

----------- Cable is used in wavelength division multiplexing.

o Twisted pair
o Coaxial
o **Fiber optic**
o Ethernet

VCI address is -----------address in virtual circuit approach.

o Private
o Variable
o Local
o **Global**

In baseband transmission, a digital signal is transmitted as ------------.

o Analog signal
o **Digital signal**
o Modulation signal
o Multiplexed signal

telephone network use----------------- network.

o Line switched
o Packet switched
o **Circuit switched**
o Bit switched

Entire band in United states is regulated by--------------- authorities.

o **FCC**
o ITU
o NASA
o ANSI

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-------------- are used for multicast communication, such as radio and television.

o   Microwaves
o   **Radio waves**
o   Light waves
o   Infrared waves

To calculate the data rate foe noiseless channel------------- formula is used-

o   Reedy
o   Shannon
o   **Nyquist**
o   propagation

In an analogue hierarchy to carry voice channels, a super group_____bandwidth.

o   240 kHz
o   240 Hz
o   120 kHz
o   **60kHz**