Data Communication (CS601)

Multiple Choice Questions (MCQs)

1. **Error correction is more _____ than the error detection.**

    1. Easy
    2. Useless
    3. Informal
    4. **Difficult**

2. **Analog To Analog Conversion Methods include _____.**

    1. AM, PM and FM
    2. AM, FSK and PM
    3. AM, PM and QAM
    4. None of the given

3. **Which of the following is not a characteristic of a sine wave?**

    1. Amplitude
    2. Segmentation
    3. Phase
    4. Frequency

4. **The transmission medium that carries the message is referred to as the _____.**

    1. send and receive device
    2. communication channel
    3. protocol
    4. gateways

5. **If the Hamming distance between sent and received code word is _____, then it shows that received data is corrupted.**

1. ≠ 0
2. = 0
3. ≠ 1
4. = 1

6. **Two or more computers connected so that they can communicate with each other and share information is called a _____.**

    1. satellite
    2. protocol
    3. broadcast
    4. network

7. **In Pure ALOHA, the vulnerable time is _____ the frame transmission time.**

    1. Same as
    2. Two times
    3. Three times
    4. Four times

8. **Line Configuration refers to the way two or more devices attach to a _____.**

    1. Path
    2. Circuit
    3. Link
    4. Router

9. **Which one is not the function of data link layer?**

    1. Line discipline
    2. Flow control
    3. Error control
    4. Network control

10. **In analog transmission, the base signal is called the_____.**

    1. Carrier Signal

2. Analog signal
3. Digital signal
4. Modulated signal

11. _____ mode of serial transmission guarantees fixed rate of data.

1. Synchronous
2. Asynchronous
3. Isochronous
4. Metasochronous

12. In TCP/IP protocol suite, the process of adding header at each layer on sending side is known as _____.

1. Encapulation
2. De-encapulation
3. Packetizing
4. Framing

13. To make sure that source does not overwhelm destination by sending data faster than it can be handled and processed is called?

1. Addressing & Routing
2. Exchange Management
3. Flow Control
4. Recovery

14. S-frames in High-Level Data Link Control (HDLC) are only used to transfer _____ information.

1. User data
2. Control
3. Redundant
4. Original

15. Radio wave transmission utilizes _____ different types of propagation.

1. Two

2. Three
3. Four
4. Five

16. Asynchronous TDM is efficient only when the size of the time slot is kept relatively _____.

1. Large
2. Small
3. Medium
4. Zero

17. Like Data link layer, _____ is also responsible for Flow control.

1. Transport Layer
2. Session Layer

18. Error detection and correction are the services provided by _____ layer.

1. Data link layer
2. Application layer
3. Physical layer
4. Session layer

19. Sampling means measuring _____ of signal at equal intervals

1. Amplitudes
2. Frequencies
3. Phases
4. None of the given

20. There are _____ basic categories of multiplexing.

1. 2
2. 3
3. 7
4. 5

21. In an analog hierarchy to carry voice channels, a group can carry _____ voice channels.

1. 60
2. 12
3. 20
4. 10

22. _____ is used in the Stop-and-Wait protocol to overcome the issue of duplication.

1. Frame sequencing
2. Acknowledgement numbering
3. Counter and Timer reset
4. Frame sequencing and Acknowledgement numbering

23. What is the Bandwidth of a periodic signal if it is decomposed into 4 sine waves with frequencies 300, 600, 900 and 1200?

1. 100
2. 900
3. 300
4. 600

24. What is the period of a Sine wave having frequency of 2 Hz?

1. 0.2
2. 0.1
3. 0.5
4. 0.3

25. DLC in Data Link Layer stands for _____.

1. Divide Line Communication
2. Data Line Code
3. Data Link Control
4. Demand Link Coordination

26. CHAP is an Authentication Protocol, which uses _____ process to authenticate user information.

1. Two-way
2. Three-way
3. Four-way
4. Five-way

27. _____ category of coaxial cable is used for thin Ethernet.

1. RG-58
2. RG-59
3. RG-1
4. RG-47

28. The logical connection between the peer layers is _____ connection.

1. Physical
2. Direct
3. Indirect
4. Tengible

29. In frequency shift keying, _____ remain(s) constant.

1. Frequency
2. Amplitude
3. Both Amplitude and Phase
4. Both Phase and Frequency

30. Which of the following sublyer resolves the contention for the shared media.

1. MAC
2. LLC
3. Physical
4. None of the given.

31. Session layer is responsible for _____.

1. Reassembly of data
2. Maintaining the connection

32. The original Ethernet technology with the data rate of 10 Mbps is called _____?

1. Standard Ethernet
2. Fast Ethernet
3. Gigabit Ethernet
4. 10 Gigabit Ethernet

33. Collisions in CSMA/CA are avoided through _____.

1. The Interframe Space
2. The Contention Window
3. Acknowledgements
4. All of the given

34. Checksum is an error-detection technique that can be applied to a message of _____ length.

1. Exactly 4
2. Exactly 8
3. Exactly 32
4. Any

35. Time division multiplexing is used in _____ systems.

1. Analog
2. Hybrid
3. Digital
4. Automated

36. Low pass channel has _____ bandwidth between two stations.

1. Dedicated
2. Shared
3. Multiplexed
4. Infinite

37. In OSI model headers are added at layer _____.

1. 1,2,3 only
2. 6,5,7 only
3. 5,4,3 only
4. 6,5,4,3,2 only

38. _____ relatively measures the strength of two signals.

1. Signal rate
2. Bit rate
3. Decibel
4. Pulse Rate

39. The Internet is _____.

1. software for sending e-mail around the world
2. a government-owned agency that links computers
3. a global network of computers networks
4. a specialised form of local area network

40. In CRC there is no error if the remainder at the receiver is _____.

1. Equal to the remainder at the sender
2. Zero
3. Nonzero
4. The quotient at the sender

41. By using _____ system, change in the file contents during file transmission can be avoided.

1. Routing
2. Flow Control
3. Error Detection and Correction
4. Congestion Control

42. The _____ protocol uses both flow and error control.

1. TCP/IP
2. HDLC
3. ICMP

4. Stop-and-Wait

43. What is the period of a Sine wave having frequency of 5 Hz?

1. 0.2
2. 0.1
3. 0.5
4. 0.3

44. The level of signal is always positive in NRZ encoding.

1. true
2. false

45. _____ is responsible for governing node to node communication.

1. Application Layer
2. Session Layer
3. Data Link layer
4. Presentation Layer

46. In _____ a dedicated communication path is established between two stations through the nodes of the network

1. Circuit switching
2. Packet switching

47. Which of the following statement is correct?

1. Digital signals are less prone to Noise
2. Digital signals are highly prone to Noise
3. Analog Signals are less prone to Noise
4. Digital signals are not affected by Noise

48. _____ is correct formula to determine the total number of ports needed for one system connected in a mesh network.

1. N+1

2. N-1
3. N(N+1)
4. NxN

49. In _____, both peak amplitude and frequency remains constant as the phase changes.

1. PSK
2. QAM
3. Both PSK & QAM
4. None of the given

50. Is there any difference between Data communication and telecommunication are network?

1. Yes
2. No

51. Each computer on the Internet has a unique numeric address called a(n) _____.

1. domain address
2. protocol address
3. IP address
4. Web address

52. TROPOSHERE is the layer of atmosphere above the troposhere but below space

1. True
2. False

53. VCI address is _____ address in virtual circuit approach.

1. Private
2. Variable
3. Local
4. Global

54. AM signal requires _____ the BW of original signal

1. Twice
2. Half
3. Same
4. Three Times

55. What is the frequency of a sine wave if it completes one cycle in 5 seconds?

1. 0.5
2. 0.6
3. 0.3
4. 0.2

56. In ASK, Noise usually affects the _____.

1. Amplitude
2. Phase
3. Sample
4. Frequency

57. Flow control is needed to prevent _____.

1. Bit errors
2. Overflow of the sender buffer
3. Overflow of the receiver buffer
4. Collision between sender and receiver

58. _____ are used to exchange session management and control information between connected devices.

1. I-frames
2. U-frames
3. S-frames
4. N-frames

59. Switch is a network device which operates on the _____ layer of the TCP/IP protocol suite.

1. Application
2. Transport
3. Presentation

4. Data link

60. _____ is an Authentication Protocol, which uses two-step process to authenticate user information.

1. CHAP
2. LCP
3. PAP
4. ICMP

61. _____ is the process of converting digital data to digital signals.

1. CSMA/CD
2. CSMA/CA
3. Line coding
4. Segmentation

62. _____ is not a function of Data Link Control.

1. Framing
2. Modulation
3. Error Control
4. Flow Control

63. PSK is susceptible to the noise degradation.

1. True
2. False

64. A _____ modem is used to connect two DTEs directly.

1. 'NULL
2. Cable
3. DSL
4. None of the given

65. Which of the following is most affected by noise?

1. PSK
2. ASK

3. FSK
4. QAM

66. Quadrature Amplitude Modulation (QAM) is the combination of _____ and _____.

1. FSK, PSK
2. PSK, FSK
3. ASK, PSK
4. ASK, FSK

67. YMODEM has _____ Byte of data unit.

1. 1024
2. 256
3. 128
4. 512

68. Analog refers to something that is continuous in _____.

1. Time
2. Space
3. Frequency
4. None of the given

69. The _____ is the number of signal elements sent per unit time.

1. Data rate
2. Signal rate
3. Bit rate
4. Period

70. What is the Bandwidth of a periodic signal if it is decomposed into 4 sine waves with frequencies 200, 400, 600 and 800?

1. 100
2. 500
3. 300

4. 600

71. At the CRC generator, _____ added to the data unit before the divisional process.

1. 0s are
2. 1s are
3. a polynomial is
4. a CRC remainder is

72. What is the period of a Sine wave having frequency of 10 Hz?

1. 0.2
2. 0.1
3. 0.5
4. 0.3

73. A sine wave is _____.

1. periodic and discrete
2. aperiodic and discrete
3. periodic and continuous
4. aperiodic and continuous

74. WDM stands for _____.

1. Wave Division Multiplexing
2. Wrong Division Multiplexing
3. Well Division Multiplexing
4. West Division Multiplexing

75. _____ is sometimes called the bit rate.

1. signal rate
2. modulation rate
3. Data rate
4. pulse rate

76. In even parity check code, the value of syndrome is _____ if the number of 1s is even.

1. 1
2. 2
3. 0
4. 4

77. RZ stands for _____.

1. Return to Z
2. Retire a Zero
3. Return ot Zero
4. None of the given

78. A sine wave is defined by _____ characteristics.

1. 2
2. 3
3. 4
4. 5

79. A portion of the path that carries TX between a given pair of devices is known as _____.

1. Direct Point
2. Bridge
3. Channel
4. Access Point

80. _____ signal can take infinite levels of intensity over time.

1. Digital
2. Discrete
3. Analog
4. Logical

81. BSC supports _____ transmission using _____ flow control.

1. Full-duplex, Stop and wait ARQ
2. Half-duplex, Selective reject ARQ
3. Full-duplex, Selective reject ARQ

4. Half-duplex, Stop and wait ARQ

82. The _____ generates the data and passes it along with any control information to a _____.

1. DTE, DCE
2. DCE, DTE
3. DTE, DTE
4. DCE, DCE

83. dB is negative if a signal is _____.

1. Attenuated
2. Distorted
3. Amplified
4. Noisy

84. If a digital signal has "L" number of levels. _____ is the number of bits required to represent each level.

1. Log L
2. Log Base 2 L
3. L Square
4. Log(2*L)

85. In selective-reject ARQ, only the specific damaged or lost frame is _____.

1. Retransmitted
2. Forwarded
3. Selected
4. Rejected

86. Asynchronous transmission is _____.

1. Slow
2. Fast
3. Costly
4. None effective

87. Congestion Control is a feature of layer(s).

1. Data Link
2. Network
3. Transport
4. All mentioned

88. GO-BACK-N protocol is one of the _____ layer protocols, which is used to control the flow of data during the transmission.

1. Physical
2. Network
3. Presentation
4. Data link

89. Signals travel through fiber optic cable are in the form of _____.

1. Light
2. Bits
3. Electromagnetic
4. Bytes

90. _____ encoding is almost obsolete today

1. Bipolar
2. Unipolar
3. Polar
4. None of the given

91. Terminal, microprocessor, computer, printer or any other device that generates or consumes digital data is known as _____

1. DCE
2. DTE
3. DCE & DTE
4. None of the given

92. The flag in PPP is a byte that needs to be _____ whenever it appears in the data section of the frame.

1. Duplicated
2. Blocked
3. Cleaned
4. Escaped

93. Radio is an example of _____ signal conversion.

1. Analog to analog
2. Analog to digital
3. Digital to Digital
4. Digital to analog

94. There are three types of Hubs that exist. Which of the following options correctly describes these three?

1. Passive, dormant, special
2. Active , dormant , passive
3. Passive, Active, Turbo
4. Passive, Active, Intelligent

95. The most common type of connector used by coaxial cable is _____.

1. BNC
2. RJ-45
3. RJ-11
4. RJ-57

96. WDM stands for _____.

1. Wideband De-Modulation
2. Worst Data Manipulation
3. Wavelength Division Multiplexing
4. None of the given

97. STP is more expensive than UTP and is less susceptible to noise.

1. True
2. False

98. In statistical time division multiplexing, number of slots in frame are less than _____.

1. Output data rate
2. Input lines
3. Input frequency
4. Multiplexed T lines

99. Human voice is example of _____ signal.

1. Digital
2. Analog
3. Discrete
4. None of the given

100. No matter whether the link is dedicated or broadcast, data link control (DLC) layer provides services between _____.

1. Virtual LANs
2. Two adjacent nodes
3. Ethernet links
4. Source and destination PCs

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

1. PDM
2. CSMA
3. TDM
4. FDM

102. There are _____types of guided media.

1. 2
2. 3
3. 4
4. 5

103. Encoding digital data into digital signals is called _____.

1. Analog-to-Digital Conversion
2. Digital-to-Digital Conversion
3. Digital-to-Analog Conversion
4. None of the given

104. Baud rate is greater than or equal to the bit rate.

1. True
2. False

105. Which error detection method consists of a parity bit for each unit as well as an entire data unit of parity bits?

1. Checksum
2. Cyclic Redundancy Check (CRC)
3. Longitudinal Red Check (LRC)
4. Vertical Redundancy Check (VRC)

106. A fiber -optic cable transmit signals in the form of _____.

1. Light
2. Sound
3. Wave
4. None of the given

107. A broadcast signal is received by the orbiting satellites which rebroadcasts _____.

1. to the resender
2. to the sender
3. to the atmosphere
4. none of the given

108. Latency is made of _____ components.

1. Two

2. Three
3. Four
4. Five

109. If users must take turns using the link, then it is called Spatial Sharing.

1. true
2. false

110. The flag in PPP is a byte that needs to be _____ whenever it appears in the data section of the frame.

1. Duplicated
2. Blocked
3. Cleaned
4. Escaped

111. In ASK correct formula for calculating the bandwidth ia as _____.

1. B=(1+d)S
2. B=(1*d)S
3. B=(d-1)S
4. B=(d-5)S

112. In Pulse Code Modulation (PCM), the sampling is dependent on _____.

1. Time
2. Amplitude
3. Frequency
4. Signal Rate

113. We can have _____ different groups with a 4 bit block.

1. 4
2. 8
3. 16
4. 32

114. To calculate the data rate for noisy channel _____ formula is used.

1. Shannon
2. Nyquist
3. Propagation
4. Greedy

115. Central Hub in a Tree is an _____.

1. Active hub
2. passive hub

116. In Block coding scheme, number of code words is always _____ data words.

1. Less than
2. Equal to
3. Greater than
4. Same as

117. The extra bits added with the original data for error detection/correction are called _____.

1. Fault bits
2. Port numbers
3. Redundant bits
4. Process IDs

118. In circuit switched networks we have low efficiency but minimal _____.

1. Delay
2. Speed
3. Throughput
4. Errors

119. If we need to correct a single error in an 8-bit data unit, we need to consider _____ possible error locations.

1. 16

2. 2
3. 4
4. 8

120. Time domain shows changes in _____.

1. time w.r.t signal amplitude
2. signal amplitude w.r.t time
3. time
4. All of the given

121. The message 1110 sent by a source is received by a destination as 1011. This is _____ type of error.

1. Burst
2. Single-Bit
3. Uni-Bit
4. Hamming

122. In order to find the location of two errors in an eight bit stream, we have to see _____ different combinations.

1. 28
2. 16
3. 8
4. 4

123. Which layer is concerned with the syntax and semantics of info exchange between two systems?

1. Physical
2. Application
3. Session
4. Presentation

124. _____ is the rate of change with respect to time.

1. Voltage
2. Time

3. Frequency
4. Amplitude

125. _____ is an Authentication Protocol, which is used by the PPP to authenticate passwords.

1. CHAP
2. PAP
3. LCP
4. ICMP

126. The term _____means that only one bit of a given data unit is changed from 1 to 0 or from 0 to 1.

1. Packet Error
2. Burst Error
3. Single Bit Error
4. Character Error

127. Digital signals are refered to be _____.

1. Continuous
2. Discrete
3. All of the given
4. None of the given

128. If the window size is 63 in go-back N ARQ then what is the range of sequence number?

1. 0 to 63
2. 0 to 64
3. 1 to 63
4. 1 to 64

129. In Block coding we divide our message into blocks of k bits called as _____.

1. Code words
2. Data words
3. Passwords
4. Cross words

130. Data is transmitted using light through a _____ cable.

1. twisted pair
2. fiber-optic
3. coaxial
4. microwave

131. If duration of noise is decreased during a transmission over noisy channel, fixed data rate of the channel will cause _____ number of bits being impacted by the noise.

1. Constant
2. More
3. Less
4. Zero

132. Digitizing an Analog Signal is called _____.

1. Analog-to-Digital Conversion
2. Digital-to-Digital Conversion
3. Digital-to-Analog Conversion
4. None of the given

133. _____ category of coaxial cable is used for Cable TV.

1. RG-58
2. RG-59
3. RG-11
4. RG-47

134. Which of the following consist of just one redundant bit per data unit?

1. Two dimentional Parity check.
2. CRC
3. Simple Parity Check
4. Checksum

135. Quantization is a method of assigning _____ values in a specific range to sampled instances.

1. Negative
2. Positive
3. Binary
4. Integral

136. _____ of a signal is the collection of all the component frequencies it contains.

1. Time domain
2. Frequency domain
3. Frequency spectrum
4. None of the given

137. The logical connection between the peer layers is _____ connection.

1. Physical
2. Direct
3. Indirect
4. Tangible

138. In ASK, both _____ and _____ remain constant.

1. Amplitude, Frequency
2. Amplitude, phase
3. Frequency, Phase
4. Amplitude, Samples

139. _____ contains a repeater.

1. Active hub
2. Passive hub

140. In line discipline after the data transmission, the sending system finishes with an _____ frame.

1. EOT

2. EKT
3. ENT
4. ESP

141. In Synchronous TDM, Time slots are not same in number as input devices.

1. True
2. False

142. Which error detection method uses one's complement arithmetic.

1. Cyclic Redundancy Check (CRC)
2. Longitudinal Red Check (LRC)
3. Checksum
4. Simple Parity Check

143. To control and manage the transfer of data, a protocol called Point to Point Protocol (PPP) is used at the _____ layer.

1. Physical
2. Network
3. Presentation
4. Data link

144. Which level of the TCP/IP reference model routes data/information across a network channel?

1. Application Layer
2. Data Link Layer
3. Transport Layer
4. Network Layer

145. Following characteristics fully describe _____,
Amplitude
Period/Frequency
Phase

1. Sine Waves

2. Digital Signals
3. Aperiodic Signals
4. None of the given

146. Time domain plot show changes in signal phase with respect to time.

1. true
2. false

147. Mr. Asif while sitting in Lahore is talking with his friend in Dubai through Skype is an example of _____.

1. Local Area Network
2. Metropolitan Area Network
3. Wide Area Network
4. Home Based Network

148. Analog signals are refers to be _____

1. Continuous
2. Discrete
3. Periodic
4. Aperiodic

149. The inversion of the level at 1 bit is called as _____.

1. NRZ-L
2. NRZ-I
3. RZ
4. None of the given.

150. The inversion of the level represents a 1 bit in _____ encoding

1. NRZ-I
2. NRZ-L
3. RZ
4. Manchester

151. At the CRC checker, _____ means that the data unit is damaged.

1. A string of 0s
2. A string of 1s
3. A string of alternating 1s and 0s
4. A nonzero remainder

152. Like 10 Base 5, 10 Base 2 is a _____ topology LAN.

1. Ring
2. Mesh
3. Star
4. Bus

153. There are _____ types of serial transmission.

1. 3
2. 4
3. 2
4. None of the given

154. In _____, a signal is directed straight from antenna to antenna.

1. Line of sight propagation
2. Ground propagation
3. Space propagation
4. Tropospheric propagation

155. In the encoding where positive to negative transition is one and vice versa is zero.

1. Manchester
2. Differential Manchester
3. All of the given
4. None of given

156. _____ is normally used where speed is priority in data transfer.

1. Serial data transmission
2. Hybrid data transmission
3. Parallel data transmission
4. Both parallel and serial data transmission

157. Traditionally MANs have been implemented using one of the 2 technologies, Circuit Switching and Packet Switching

1. true
2. false

158. What is the frequency of a sine wave if it completes one cycle in 2 seconds?

1. 0.5
2. 0.6
3. 0.3
4. 0.2

159. Data Link layer provides services to the _____ layer.

1. Application
2. Transport
3. Network
4. Session

160. At the Application layer, object/information is in the form of _____.

1. Message
2. Packet
3. Segment
4. Frame

1.If the ASCII character H is sent the character I iis received the type of error is occurred

Single bi

2.At the CRC generator added to the data unit before the division process

A polynomial is

3.At the CRC checker means that the data unit is not damaged

Anonzero remindedr

4.IEE divided the baseband category in to standards

5

5.bandwidth required for equal to the band rate of the signal

ASK

6. At the beginning of transmission the receiver windows contains space for frame is sliding window mechanism

n-1

7.one multi station Access unit can support up tmin to station

8

8. A fiber optic signal are transmitted in the form of

Light

9.BNC connectors are used by cables

Coaxial

10. Measure the relative strength of the two signals or a signal at two different at two different point

Decibel

11.The very low frequency VLFand low frequency LF band used propagation for communication

Surface

12.An authorized access over a network is issue

Security

13. The hamming code is used for

Detection and correction of error

14.FDDI THT stands for

Token holding time

15.in fast ethernet the maximum supported data rate is

100Mbps

16.RARP stands for

Reverse Adress Resolution protocol

17. A telephone network is a example of network

Circuit switched

18. Bridge can decided a large in to smaller signal

Network

19. The rate of T-1 is

1.544Mbps

20 FTTc to the stand for

Fiber to the curb

21.in the process of CRC has not any importance is not attached with data at sender receiver size

Quotient

22. If CRC there is no error at the receiver size is

Zero

23. In the process of CRC quotient at the sender

Ignored

24. According to odd parity for error detection if the number of 1 s the data segment are then 0 number is attached

Even

Correct Option : 2 From : Lecture 16
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Question # 40

One factor in the accuracy of a reconstructed PCM signal is the _____.

1) : Number of bits used for quantization
2) : Signal bandwidth
3) : Carrier frequency
4) : Baud rate

Correct Option : 1 From : Lecture 16
MCQS Printed From Vulhr.com, Come Visit and Upgrade You Knowledge
Question # 41

In PCM, an analog-to- _____ conversion occurs.

1) : Analog
2) : Digital
3) : QAM
4) : Differential

Correct Option : 2 From : Lecture 16
MCQS Printed From Vulhr.com, Come Visit and Upgrade You Knowledge
Question # 42

If the maximum value of a PCM signal is 31 and the minimum value is -31, how many bits were used for coding?

1) : 4
2) : 5
3) : 6
4) : 7

Correct Option : 3 From : Lecture 16
MCQS Printed From Vulhr.com, Come Visit and Upgrade You Knowledge
Question # 43

Which quantization level results in a more faithful reproduction of the signal?

1) : 2
2) : 8
3) : 16
4) : 32

Correct Option : 4 From : Lecture 16
MCQS Printed From Vulhr.com, Come Visit and Upgrade You Knowledge
Question # 44

In _____ transmission, bits are transmitted over a single wire, one at a time.

1) : Asynchronous serial
2) : Synchronous serial
3) : Parallel
4) : (a) and (b)

Correct Option : 4 From : Lecture 17
MCQS Printed From Vulhr.com, Come Visit and Upgrade You Knowledge
Question # 45

In _____ transmission, a start bit and a stop bit frame a character byte.

1) : Synchronous serial
2) : Asynchronous serial
3) : Parallel
4) : (a) and (b)

Correct Option : 2 From : Lecture 17

Question # 46

If a symbol is composed of 3 bits, there are _____ data levels.

1) : 2
2) : 4
3) : 8
4) : 16

Correct Option : 3 From : Lecture 17

Question # 47

The Nyquist theorem specifies the minimum sampling rate to be_____.

1) : Twice the bandwidth of a signal
2) : Twice the highest frequency of a signal
3) : Equal to the lowest frequency of a signal
4) : Equal to the highest frequency of a signal

Correct Option : 2 From : Lecture 17

Question # 48

Pulse rate is always _____ the bit rate.

1) : Less than
2) : Less than or equal to
3) : Greater than
4) : Greater than or equal to

Correct Option : 2 From : Lecture 17

Question # 49

ASK, PSK, FSK, and QAM are examples of _____ conversion.

1) : digital-to-digital
2) : digital-to-analog
3) : analog-to-analog
4) : analog-to-digital

Correct Option : 2 From : Lecture 17

Question # 50

In QAM, both _____ of a carrier frequency are varied.

1) : frequency and amplitude
2) : phase and frequency
3) : amplitude and phase
4) : none of the above

Correct Option : 3 From : Lecture 17

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Question # 51

If the baud rate is 400 for a QPSK signal, the bit rate is _____ bps.

1) : 100
2) : 400
3) : 800
4) : 1600

Correct Option : 3 From : Lecture 17

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Question # 52

If the bit rate for an ASK signal is 1200 bps, the baud rate is _____.

1) : 300
2) : 400
3) : 600
4) : 1200

Correct Option : 4 From : Lecture 17

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Question # 53

If the bit rate for an FSK signal is 1200 bps, the baud rate is _____.

1) : 300
2) : 400
3) : 600
4) : 1200

Correct Option : 4 From : Lecture 17

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Question # 54

If the bit rate for a 16-QAM signal is 4000 bps, what is the baud rate?

1) : 300
2) : 400
3) : 1000
4) : 1200

Correct Option : 4 From : Lecture 17

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Question # 55

If the baud rate for a 64-QAM signal is 2000, what is the bit rate?

1) : 300
2) : 400
3) : 1000
4) : 12000

Correct Option : 3 From : Lecture 17

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Question # 56

Quadrature amplitude modulation (QAM) is a combination of _____.

1) : ASK and FSK
2) : ASK and PSK
3) : PSK and FSK

4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 57

_____ uses two carriers, one in-phase and the other quadrature.

1) : ASK
2) : PSK
3) : FSK
4) : QAM

Correct Option : 4 From : Lecture 17

Question # 58

Analog-to-analog conversion is needed if the available bandwidth is _____.

1) : low-pass
2) : band-pass
3) : either (a) or (b)
4) : neither (a) nor (b)

Correct Option : 2 From : Lecture 17

Question # 59

Which of the following is not an analog-to-analog conversion?

1) : AM
2) : PM
3) : FM
4) : QAM

Correct Option : 4 From : Lecture 17

Question # 60

In _____ transmission, the carrier signal is modulated so that its amplitude varies with the changing amplitudes of the modulating signal.

1) : AM
2) : PM
3) : FM
4) : none of the above

Correct Option : 1 From : Lecture 17

Question # 61

In _____ transmission, the frequency of the carrier signal is modulated to follow the changing voltage level (amplitude) of the modulating signal. The peak amplitude and phase of the carrier signal remain constant, but as the amplitude of the information signal changes, the frequency of the carrier changes correspondingly.

1) : AM
2) : PM
3) : FM
4) : none of the above

Correct Option : 3 From : Lecture 17

Question # 62

In _____ transmission, the phase of the carrier signal is modulated to follow the changing voltage level (amplitude) of the modulating signal.

1) : AM
2) : PM
3) : FM
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 63

In _____, the peak amplitude of one signal level is 0; the other is the same as the amplitude of the carrier frequency.

1) : PSK
2) : OOK
3) : FSK
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 64

The constellation diagram of 16-QAM has _____ dots.

1) : 4
2) : 16
3) : 8
4) : none of the above

Correct Option : 3 From : Lecture 17

Question # 65

The Federal Communications Commission (FCC) allows _____kHz for each AM station.

1) : 5
2) : 10
3) : 20
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 66

The Federal Communications Commission (FCC) allows _____ kHz for each FM station.

1) : 20
2) : 100
3) : 200
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 67

Which of the following is not a digital-to-analog conversion?

1) : ASK
2) : PSK
3) : FSK
4) : AM

Correct Option : 4 From : Lecture 18

Question # 68

In _____, the amplitude of the carrier signal is varied to create signal elements. Both frequency and phase remain constant.

1) : ASK
2) : PSK
3) : FSK
4) : QAM

Correct Option : 1 From : Lecture 18

Question # 69

In _____, the frequency of the carrier signal is varied to represent data. Both peak amplitude and phase remain constant.

1) : ASK
2) : PSK
3) : FSK
4) : QAM

Correct Option : 3 From : Lecture 18

Question # 70

In _____, the phase of the carrier is varied to represent two or more different signal elements. Both peak amplitude and frequency remain constant.

1) : ASK
2) : PSK
3) : FSK
4) : QAM

Correct Option : 2 From : Lecture 18

Question # 71

A constellation diagram shows us the _____ of a signal element, particularly when we are using two carriers (one in-phase and one quadrature).

1) : amplitude and phase
2) : amplitude and frequency
3) : frequency and phase
4) : none of the above

Correct Option : 1 From : Lecture 18

Question # 72

_____ conversion is the representation of analog information by an analog signal.

1) : Digital-to-analog
2) : Analog-to-analog
3) : Analog-to-digital
4) : Digital-to-digital

Correct Option : 2 From : Lecture 18

Question # 73

AM and FM are examples of _____ conversion.

1) : digital-to-digital
2) : digital-to-analog
3) : analog-to-analog
4) : analog-to-digital

Correct Option : 3 From : Lecture 19

Question # 74

Given an AM radio signal with a bandwidth of 10 KHz and the highest-frequency component at 705 KHz, what is the frequency of the carrier signal?

1) : 700 KHz
2) : 705 KHz
3) : 710 KHz
4) : Cannot be determined from given information

Correct Option : 1 From : Lecture 19

Question # 75

If the available channel is a ____ channel, we cannot send a digital signal directly to the channel.

1) : low-pass
2) : bandpass
3) : low rate
4) : high rate

Correct Option : 2 From : Lecture 20

Question # 76

For a _____ channel, the Nyquist bit rate formula defines the theoretical maximum bit rate.

1) : noisy
2) : noiseless
3) : bandpass
4) : low-pass

Correct Option : 2 From : Lecture 20

Question # 77

For a _____ channel, we need to use the Shannon capacity to find the maximum bit rate.

1) : noisy
2) : noiseless

3) : bandpass
4) : low-pass
Correct Option : 1 From : Lecture 20
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Top

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MCQS of Cs601
(MID Term)
Attention:

Question # 1
Data communication is the exchange of information one entity to other using a Transmission_____.
1) : Protocol
2) : Medium
3) : Signal
4) : All the above
Correct Option : 2 From : Lecture 1
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Question # 2
The _____ is the physical path over which a message travels.
1) : Protocol
2) : Medium
3) : Signal
4) : All the above
Correct Option : 2 From : Lecture 1
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Question # 3
The information to be communicated in a data communications system is the _____.
1) : Medium
2) : Protocol

3) : Message
4) : Transmission
Correct Option : 3 From : Lecture 1
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Question # 4
Medium twisted wire have speed to transform the information _____
1) : 300bps-10Mbps
2) : 256Kbps-100Mbps
3) : 56Kbps-200Mbps
4) : 500Kbps-10Gbps
Correct Option : 1 From : Lecture 1
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Question # 5
Medium Microwave have speed to transform the information _____
1) : 300bps-10Mbps
2) : 256Kbps-100Mbps
3) : 56Kbps-200Mbps
4) : 500Kbps-10Gbps
Correct Option : 2 From : Lecture 1
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Question # 6
Medium Coaxial Cable have speed to transform the information _____
1) : 300bps-10Mbps
2) : 256Kbps-100Mbps
3) : 56Kbps-200Mbps
4) : 500Kbps-10Gbps
Correct Option : 3 From : Lecture 1
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Question # 7
Medium Fiber Optic Cable have speed to transform the information _____
1) : 300bps-10Mbps
2) : 256Kbps-100Mbps
3) : 56Kbps-200Mbps
4) : 500Kbps-10Gbps
Correct Option : 4 From : Lecture 1
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Question # 8
A set of rules that govern on the flow of Data/information in a communication System is called_____
1) : Protocol
2) : Medium
3) : Signal
4) : Ring
Correct Option : 1 From : Lecture 1
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Question # 9

_____is a Communication dialog between network users or applications.

1) : Session
2) : Node
3) : Protocol
4) : Medium

Correct Option : 1 From : Lecture 1

Question # 10

Two or more devices connecting to each other to exchange the information is called _____

1) : Session
2) : Node
3) : Network
4) : Medium

Correct Option : 3 From : Lecture 1

Question # 11

In a network each attached device is called _____

1) : Session
2) : Node
3) : Network
4) : Medium

Correct Option : 2 From : Lecture 1

Question # 12

Mail services are available to network users through the _____ layer.

1) : Data link
2) : Physical
3) : Application
4) : Transport

Correct Option : 3 From : Lecture 10

Question # 13

Which of the following is an application layer service?

1) : Remote log-in
2) : File transfer and access
3) : Mail service
4) : All the above

Correct Option : 4 From : Lecture 10

Question # 14

Before data can be transmitted, they must be transformed to _____.

1) : periodic signals
2) : electromagnetic signals
3) : aperiodic signals
4) : low-frequency sine waves

Correct Option : 2 From : Lecture 11

Question # 15

A periodic signal completes one cycle in 0.001 s. What is the frequency?

1) : 1 Hz
2) : 100 Hz
3) : 1 KHz
4) : 1 MHz

Correct Option : 3 From : Lecture 11

Question # 16

Given two sine waves A and B, if the frequency of A is twice that of B, then the period of B is _____ that of A.

1) : one-half
2) : twice
3) : the same as
4) : indeterminate from

Correct Option : 2 From : Lecture 11

Question # 17

A sine wave is _____.

1) : periodic and continuous
2) : aperiodic and continuous
3) : periodic and discrete
4) : aperiodic and discrete

Correct Option : 1 From : Lecture 11

Question # 18

If the maximum amplitude of a sine wave is 2 V, the minimum amplitude is _____ V.

1) : 2
2) : 1
3) : -2
4) : between -2 and 2

Correct Option : 3 From : Lecture 11

Question # 19

Data can be _____.

1) : analog
2) : digital
3) : analog or digital
4) : none of the above

Correct Option : 3 From : Lecture 11

Question # 20

_____ data are continuous and take continuous values.

1) : analog
2) : digital
3) : analog or digital
4) : none of the above
Correct Option : 1 From : Lecture 11
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Question # 21
_____ data have discrete states and take discrete values.
1) : analog
2) : digital
3) : analog or digital
4) : none of the above
Correct Option : 2 From : Lecture 11
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Question # 22
Signals can be _____.
1) : analog
2) : digital
3) : either analog or digital
4) : neither analog or digital
Correct Option : 3 From : Lecture 11
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Question # 23
_____ signals can have an infinite number of values in a range.
1) : analog
2) : digital
3) : analog or digital
4) : none of the above
Correct Option : 1 From : Lecture 11
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Question # 24
_____ signals can have only a limited number of values.
1) : analog
2) : digital
3) : analog or digital
4) : none of the above
Correct Option : 2 From : Lecture 11
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Question # 25
Frequency and period are _____.
1) : inverse of each other
2) : proportional to each other
3) : the same
4) : none of the above
Correct Option : 1 From : Lecture 11
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Question # 26

_____is the rate of change with respect to time.

1) : Amplitude
2) : Time
3) : Frequency
4) : Voltage

Correct Option : 3 From : Lecture 11

Question # 27

_____ describes the position of the waveform relative to time 0.

1) : Frequency
2) : Phase
3) : Amplitude
4) : Voltage

Correct Option : 2 From : Lecture 11

Question # 28

In a frequency-domain plot, the horizontal axis measures the _____.

1) : peak amplitude
2) : frequency
3) : phase
4) : slope

Correct Option : 2 From : Lecture 12

Question # 29

In a time-domain plot, the horizontal axis is a measure of _____.

1) : signal amplitude
2) : frequency
3) : phase
4) : time

Correct Option : 4 From : Lecture 12

Question # 30

A sine wave in the _____ domain can be represented by one single spike in the _____ domain.

1) : time; frequency
2) : frequency; time
3) : time; phase
4) : phase; time

Correct Option : 1 From : Lecture 12

Question # 31

A _____ sine wave is not useful in data communications; we need to send a _____ signal.

1) : composite; single-frequency
2) : single-frequency; composite

3) : single-frequency; double-frequency
4) : none of the above
Correct Option : 2 From : Lecture 12
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Question # 32
The _____ of a composite signal is the difference between the highest and the lowest frequencies contained in that signal.
1) : frequency
2) : period
3) : bandwidth
4) : amplitude
Correct Option : 3 From : Lecture 12
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Question # 33
A(n)_____ signal is a composite analog signal with an infinite bandwidth.
1) : digital
2) : analog
3) : either analog or digital
4) : neither analog or digital
Correct Option : 1 From : Lecture 12
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Question # 34
Baseband transmission of a digital signal is possible only if we have a ____ channel.
1) : low-pass
2) : bandpass
3) : low rate
4) : high rate
Correct Option : 1 From : Lecture 12
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Question # 35
The _____ product defines the number of bits that can fill the link.
1) : bandwidth-period
2) : frequency-amplitude
3) : bandwidth-delay
4) : delay-amplitude
Correct Option : 2 From : Lecture 12
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Question # 36
If the bandwidth of a signal is 5 KHz and the lowest frequency is 52 KHz, what is the highest frequency?
1) : 5 KHz
2) : 10 KHz
3) : 10 KHz
4) : 57 KHz
Correct Option : 4 From : Lecture 13

Question # 37

What is the bandwidth of a signal that ranges from 1 MHz to 4 MHz?

1) : 4 MHz
2) : 1 KHz
3) : 3 MHz
4) : none of the above

Correct Option : 3 From : Lecture 13

Question # 38

As frequency increases, the period _____.

1) : decreases
2) : increases
3) : remains the same
4) : doubles

Correct Option : 1 From : Lecture 13

Question # 39

A signal is measured at two different points. The power is P1 at the first point and P2 at the second point. The dB is 0. This means _____.

1) : P2 is zero
2) : P2 equals P1
3) : P2 is much larger than P1
4) : P2 is much smaller than P1

Correct Option : 2 From : Lecture 13

Question # 40

If the frequency spectrum of a signal has a bandwidth of 500 Hz with the highest frequency at 600 Hz, what should be the sampling rate, according to the Nyquist theorem?

1) : 500 samples/s
2) : 1000 samples/s
3) : 200 samples/s
4) : 1200 samples/s

Correct Option : 4 From : Lecture 13

Question # 41

Block coding can help in _____ at the receiver.

1) : Synchronization
2) : Error detection
3) : Attenuation
4) : (a) and (b)

Correct Option : 4 From : Lecture 14

Question # 42

In _____ transmission, bits are transmitted simultaneously, each across its own

wire.

1) : Parallel
2) : Asynchronous serial
3) : Synchronous serial
4) : (a) and (b)

Correct Option : 1 From : Lecture 14

Question # 43

Unipolar, bipolar, and polar encoding are types of _____ encoding.

1) : Block
2) : Line
3) : NRZ
4) : Manchester

Correct Option : 2 From : Lecture 14

Question # 44

_____ encoding has a transition at the middle of each bit.

1) : RZ
2) : Manchester
3) : Differential Manchester
4) : All the above

Correct Option : 4 From : Lecture 14

Question # 45

Which encoding type always has a nonzero average amplitude?

1) : Polar
2) : Bipolar
3) : Unipolar
4) : All the above

Correct Option : 3 From : Lecture 14

Question # 46

_____ conversion is the process of changing one of the characteristics of an analog signal based on the information in the digital data.

1) : Digital-to-analog
2) : Analog-to-analog
3) : Analog-to-digital
4) : Digital-to-digital

Correct Option : 1 From : Lecture 14

Question # 47

Which encoding technique attempts to solve the loss of synchronization due to long strings of 0s?

1) : NRZ
2) : B8ZS
3) : AMI

4) : (a) and (b)

Correct Option : 2 From : Lecture 15

Question # 48

_____ encoding has a transition at the beginning of each 0 bit.

1) : Differential Manchester
2) : RZ
3) : Manchester
4) : All the above

Correct Option : 1 From : Lecture 15

Question # 49

Which of the following encoding methods does not provide for synchronization?

1) : Manchester
2) : NRZ-L
3) : RZ
4) : NRZ-I

Correct Option : 2 From : Lecture 15

Question # 50

Which encoding method uses alternating positive and negative values for 1s?

1) : Manchester
2) : AMI
3) : NRZ-I
4) : RZ

Correct Option : 2 From : Lecture 15

Question # 51

RZ encoding involves _____ signal levels.

1) : Five
2) : Four
3) : Three
4) : Two

Correct Option : 3 From : Lecture 15

Question # 52

PCM is an example of _____ conversion.

1) : Analog-to-analog
2) : Analog-to-digital
3) : Digital-to-digital
4) : Digital-to-analog

Correct Option : 2 From : Lecture 16

Question # 53

One factor in the accuracy of a reconstructed PCM signal is the _____.

1) : Number of bits used for quantization

2) : Signal bandwidth
3) : Carrier frequency
4) : Baud rate
Correct Option : 1 From : Lecture 16
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Question # 54
In PCM, an analog-to- _____ conversion occurs.
1) : Analog
2) : Digital
3) : QAM
4) : Differential
Correct Option : 2 From : Lecture 16
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Question # 55
If the maximum value of a PCM signal is 31 and the minimum value is -31, how many bits were used for coding?
1) : 4
2) : 5
3) : 6
4) : 7
Correct Option : 3 From : Lecture 16
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Question # 56
Which quantization level results in a more faithful reproduction of the signal?
1) : 2
2) : 8
3) : 16
4) : 32
Correct Option : 4 From : Lecture 16
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Question # 57
In _____ transmission, bits are transmitted over a single wire, one at a time.
1) : Asynchronous serial
2) : Synchronous serial
3) : Parallel
4) : (a) and (b)
Correct Option : 4 From : Lecture 17
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Question # 58
In _____ transmission, a start bit and a stop bit frame a character byte.
1) : Synchronous serial
2) : Asynchronous serial
3) : Parallel
4) : (a) and (b)
Correct Option : 2 From : Lecture 17
MCQS Printed From Vulhr.com, Come Visit and Upgrade You Knowledge

Question # 59

If a symbol is composed of 3 bits, there are _____ data levels.

1) : 2
2) : 4
3) : 8
4) : 16

Correct Option : 3 From : Lecture 17

Question # 60

The Nyquist theorem specifies the minimum sampling rate to be_____.

1) : Twice the bandwidth of a signal
2) : Twice the highest frequency of a signal
3) : Equal to the lowest frequency of a signal
4) : Equal to the highest frequency of a signal

Correct Option : 2 From : Lecture 17

Question # 61

Pulse rate is always _____ the bit rate.

1) : Less than
2) : Less than or equal to
3) : Greater than
4) : Greater than or equal to

Correct Option : 2 From : Lecture 17

Question # 62

ASK, PSK, FSK, and QAM are examples of _____ conversion.

1) : digital-to-digital
2) : digital-to-analog
3) : analog-to-analog
4) : analog-to-digital

Correct Option : 2 From : Lecture 17

Question # 63

In QAM, both _____ of a carrier frequency are varied.

1) : frequency and amplitude
2) : phase and frequency
3) : amplitude and phase
4) : none of the above

Correct Option : 3 From : Lecture 17

Question # 64

If the baud rate is 400 for a QPSK signal, the bit rate is _____ bps.

1) : 100
2) : 400
3) : 800
4) : 1600

Correct Option : 3 From : Lecture 17

Question # 65

If the bit rate for an ASK signal is 1200 bps, the baud rate is _____.

1) : 300
2) : 400
3) : 600
4) : 1200

Correct Option : 4 From : Lecture 17

Question # 66

If the bit rate for an FSK signal is 1200 bps, the baud rate is _____.

1) : 300
2) : 400
3) : 600
4) : 1200

Correct Option : 4 From : Lecture 17

Question # 67

If the bit rate for a 16-QAM signal is 4000 bps, what is the baud rate?

1) : 300
2) : 400
3) : 1000
4) : 1200

Correct Option : 4 From : Lecture 17

Question # 68

If the baud rate for a 64-QAM signal is 2000, what is the bit rate?

1) : 300
2) : 400
3) : 1000
4) : 12000

Correct Option : 3 From : Lecture 17

Question # 69

Quadrature amplitude modulation (QAM) is a combination of _____.

1) : ASK and FSK
2) : ASK and PSK
3) : PSK and FSK
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 70

_____ uses two carriers, one in-phase and the other quadrature.

1) : ASK
2) : PSK

3) : FSK
4) : QAM
Correct Option : 4 From : Lecture 17

Question # 71
Analog-to-analog conversion is needed if the available bandwidth is _____.
1) : low-pass
2) : band-pass
3) : either (a) or (b)
4) : neither (a) nor (b)
Correct Option : 2 From : Lecture 17

Question # 72
Which of the following is not an analog-to-analog conversion?
1) : AM
2) : PM
3) : FM
4) : QAM
Correct Option : 4 From : Lecture 17

Question # 73
In _____ transmission, the carrier signal is modulated so that its amplitude varies with the changing amplitudes of the modulating signal.
1) : AM
2) : PM
3) : FM
4) : none of the above
Correct Option : 1 From : Lecture 17

Question # 74
In _____ transmission, the frequency of the carrier signal is modulated to follow the changing voltage level (amplitude) of the modulating signal. The peak amplitude and phase of the carrier signal remain constant, but as the amplitude of the information signal changes, the frequency of the carrier changes correspondingly.
1) : AM
2) : PM
3) : FM
4) : none of the above
Correct Option : 3 From : Lecture 17

Question # 75
In _____ transmission, the phase of the carrier signal is modulated to follow the changing voltage level (amplitude) of the modulating signal.
1) : AM
2) : PM
3) : FM

4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 76

In _____, the peak amplitude of one signal level is 0; the other is the same as the amplitude of the carrier frequency.

1) : PSK
2) : OOK
3) : FSK
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 77

The constellation diagram of 16-QAM has _____ dots.

1) : 4
2) : 16
3) : 8
4) : none of the above

Correct Option : 3 From : Lecture 17

Question # 78

The Federal Communications Commission (FCC) allows _____kHz for each AM station.

1) : 5
2) : 10
3) : 20
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 79

The Federal Communications Commission (FCC) allows _____ kHz for each FM station.

1) : 20
2) : 100
3) : 200
4) : none of the above

Correct Option : 2 From : Lecture 17

Question # 80

Which of the following is not a digital-to-analog conversion?

1) : ASK
2) : PSK
3) : FSK
4) : AM

Correct Option : 4 From : Lecture 18

Question # 81

In _____, the amplitude of the carrier signal is varied to create signal elements. Both frequency and phase remain constant.

1) : ASK
2) : PSK
3) : FSK
4) : QAM

Correct Option : 1 From : Lecture 18

Question # 82

In _____, the frequency of the carrier signal is varied to represent data. Both peak amplitude and phase remain constant.

1) : ASK
2) : PSK
3) : FSK
4) : QAM

Correct Option : 3 From : Lecture 18

Question # 83

In _____, the phase of the carrier is varied to represent two or more different signal elements. Both peak amplitude and frequency remain constant.

1) : ASK
2) : PSK
3) : FSK
4) : QAM

Correct Option : 2 From : Lecture 18

Question # 84

A constellation diagram shows us the _____ of a signal element, particularly when we are using two carriers (one in-phase and one quadrature).

1) : amplitude and phase
2) : amplitude and frequency
3) : frequency and phase
4) : none of the above

Correct Option : 1 From : Lecture 18

Question # 85

_____ conversion is the representation of analog information by an analog signal.

1) : Digital-to-analog
2) : Analog-to-analog
3) : Analog-to-digital
4) : Digital-to-digital

Correct Option : 2 From : Lecture 18

Question # 86

AM and FM are examples of _____ conversion.

1) : digital-to-digital
2) : digital-to-analog
3) : analog-to-analog
4) : analog-to-digital

Correct Option : 3 From : Lecture 19

Question # 87

Given an AM radio signal with a bandwidth of 10 KHz and the highest-frequency component at 705 KHz, what is the frequency of the carrier signal?

1) : 700 KHz
2) : 705 KHz
3) : 710 KHz
4) : Cannot be determined from given information

Correct Option : 1 From : Lecture 19

Question # 88

The physical communication pathway that transfers data from one device to another is called _____

1) : Link
2) : Path
3) : Circuit
4) : Routing

Correct Option : 1 From : Lecture 2

Question # 89

End to End rout Within a Network is called _____

1) : Link
2) : Path
3) : Circuit
4) : Routing

Correct Option : 2 From : Lecture 2

Question # 90

In the original ARPANET, _____ were directly connected together.

1) : IMPs
2) : host computers
3) : networks
4) : routers

Correct Option : 1 From : Lecture 2

Question # 91

This was the first network.

1) : CSNET
2) : ANSNET
3) : ARPANET

4) : NSFNET

Correct Option : 3 From : Lecture 2

Question # 92

Well Designed Softwae can speed up the Process

1) : TRUE

2) : FALSE

3) :

4) :

Correct Option : 1 From : Lecture 2

Question # 93

There are 5 Factors on which performance depend. Chose one set

1) : Number of Users, medium type, Hardware, software and Network criteria

2) : Number of Users,Nodes, Hardware, software and Network criteria

3) : Number of Users,Nodes, Hardware, software and Network

4) : None of the Given

Correct Option : 1 From : Lecture 2

Question # 94

Frequency of failure and network recovery time after a failure is measures of the _____ of a network.

1) : Performance

2) : Reliability

3) : Security

4) : Feasibility

Correct Option : 2 From : Lecture 2

Question # 95

An unauthorized user is a network _____ issue.

1) : Performance

2) : Reliability

3) : Security

4) : All the above

Correct Option : 3 From : Lecture 2

Question # 96

Example of the Network application for Teleconferencing is _____

1) : Conferenc

2) : Video

3) : Video Conferencing

4) : None of the Given

Correct Option : 3 From : Lecture 2

Question # 97

The complete path between two terminals over which can communicate is called

_____

1) : Link
2) : path
3) : Circuit
4) : routing

Correct Option : 3 From : Lecture 2

Question # 98

Node can be a computer, printer or any other device capable of sending or receiving.

1) : TRUE
2) : FALSE
3) :
4) :

Correct Option : 1 From : Lecture 2

Question # 99

One Advantages of the Distributed processing is _____

1) : Collaborative Processing
2) : Multitasking
3) : Network
4) : Fast and Costly

Correct Option : 1 From : Lecture 2

Question # 100

If the available channel is a ____ channel, we cannot send a digital signal directly to the channel.

1) : low-pass
2) : bandpass
3) : low rate
4) : high rate

Correct Option : 2 From : Lecture 20

Question # 101

For a _____ channel, the Nyquist bit rate formula defines the theoretical maximum bit rate.

1) : noisy
2) : noiseless
3) : bandpass
4) : low-pass

Correct Option : 2 From : Lecture 20

Question # 102

For a _____ channel, we need to use the Shannon capacity to find the maximum bit rate.

1) : noisy

2) : noiseless
3) : bandpass
4) : low-pass
Correct Option : 1 From : Lecture 20
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Question # 103
The boundary between two pieces if equipment is called _____
1) : Interface
2) : Signal Genreation
3) : Network
4) : None of the Given
Correct Option : 1 From : Lecture 3
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Question # 104
Which one are the communication tasks _____
1) : Signal and sending data
2) : Addressing, Communicate, sending Data
3) : Interface, routing and Security
4) : There are not Tasks for Communications
Correct Option : 3 From : Lecture 3
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Question # 105
What , How to and when to communicated is defined bye
1) : Protocol
2) : Medium
3) : Signal
4) : Transmission
Correct Option : 1 From : Lecture 3
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Question # 106
Key elements of the Protocol are _____
1) : Signals, Semantic and Tuning
2) : Syntax, Semantic and Tuning
3) : Protocol, Interface and Tuning
4) : Tuning, Interface and Routing
Correct Option : 2 From : Lecture 3
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Question # 107
The Structure of format of data, meaning the order in which key are presented is known as _____
1) : Semantic
2) : Tuning
3) : Signals
4) : Syntax
Correct Option : 4 From : Lecture 3
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Question # 108

_____ Refer to the meaning of each section bits.

1) : Semantic
2) : Tuning
3) : Signals
4) : Syntax

Correct Option : 1 From : Lecture 3

Question # 109

When data should be sent and how fast it be sent is decided by_____

1) : Semantic
2) : Tuning
3) : Signals
4) : Syntax

Correct Option : 2 From : Lecture 3

Question # 110

_____ refers to two characteristics: when data should be sent and how fast it can be sent.

1) : Semantics
2) : Syntax
3) : Timing
4) : None of the above

Correct Option : 3 From : Lecture 3

Question # 111

There are two Main type of Standards_____

1) : De facto and De Law
2) : De facto and De jure
3) : Proprietary and De Facto
4) : No Proprietary and Proprietary

Correct Option : 2 From : Lecture 4

Question # 112

No Proprietary and Proprietary are subtype of _____

1) : Open
2) : De Law
3) : De Jure
4) : De Facto

Correct Option : 4 From : Lecture 4

Question # 113

Standards are developed mainly bye _____ entities:

1) : 6
2) : 4
3) : 3

4) : 2

Correct Option : 3 From : Lecture 4

Question # 114

There are _____ and they are slow moving and cannot co-op with the fast growing communication industry.

1) : Procedural Bodies
2) : Many Propels
3) : Some Engineers
4) : Many Engineers

Correct Option : 1 From : Lecture 4

Question # 115

International standard Organization includes representatives from _____ countries

1) : 82
2) : 150
3) : 83
4) : 68

Correct Option : 1 From : Lecture 4

Question # 116

V series, X Series and ISDN (integrated Services Digital Network) are Defined bay _____

1) : ISO
2) : ITU-T
3) : CCITT
4) : ANSI

Correct Option : 2 From : Lecture 4

Question # 117

___ submits Proposal to ITU-T

1) : USA
2) : ISO
3) : IEEE
4) : ANSI

Correct Option : 4 From : Lecture 4

Question # 118

_____ Is the World largest society of professional engineers.

1) : USA
2) : ISO
3) : IEEE
4) : ANSI

Correct Option : 3 From : Lecture 4

Question # 119

IEEE is stand for _____

1) : International Electrical and Electronics Engineers
2) : International Electrically and Electronics Engineers
3) : International Educated Electrically Engineers
4) : None of the Given

Correct Option : 1 From : Lecture 4

Question # 120

_____refer to the way two or more devices attach to a link

1) : Protocol
2) : Medium
3) : Line Configuration
4) : Transmission

Correct Option : 3 From : Lecture 4

Question # 121

A _____ connection provides a dedicated link between two devices.

1) : point-to-point
2) : multipoint
3) : primary
4) : secondary

Correct Option : 1 From : Lecture 4

Question # 122

In a _____ connection, more than two devices can share a single link.

1) : point-to-point
2) : multipoint
3) : primary
4) : secondary

Correct Option : 2 From : Lecture 4

Question # 123

In a _____ connection, two and only two devices are connected by a dedicated link.

1) : multipoint
2) : point-to-point
3) : (and (
4) : None of the above

Correct Option : 2 From : Lecture 4

Question # 124

In a _____ connection, three or more devices share a link.

1) : multipoint
2) : point-to-point
3) : (and (
4) : None of the above

Correct Option : 1 From : Lecture 4

Question # 125

If several devices can share the link simultaneously, its called spatially shared _____

1) : Spatial Shared
2) : Temporal Shared
3) : point-to-point
4) : multipoint

Correct Option : 1 From : Lecture 4

Question # 126

If user must take turns using the link, then it's called _____

1) : Spatial Shared
2) : Temporal Shared
3) : point-to-point
4) : multipoint

Correct Option : 2 From : Lecture 4

Question # 127

Which topology requires a central controller or hub?

1) : Mesh
2) : Star
3) : Bus
4) : Ring

Correct Option : 2 From : Lecture 5

Question # 128

Which topology requires a multipoint connection?

1) : Mesh
2) : Star
3) : Bus
4) : Ring

Correct Option : 3 From : Lecture 5

Question # 129

_____defines the physical or the logical outlook of the network.

1) : Typology
2) : Star
3) : Bus
4) : Ring

Correct Option : 1 From : Lecture 5

Question # 130

_____ refers to the physical or logical arrangement of a network.

1) : Data flow

2) : Mode of operation
3) : Topology
4) : None of the above
Correct Option : 3 From : Lecture 5

Question # 131
Devices may be arranged in a _____ topology.
1) : Mesh
2) : Ring
3) : Bus
4) : All of the above
Correct Option : 4 From : Lecture 5

Question # 132
Communication between a computer and a keyboard involves _____ transmission.
1) : simplex
2) : half-duplex
3) : full-duplex
4) : automatic
Correct Option : 1 From : Lecture 6

Question # 133
A television broadcast is an example of _____ transmission.
1) : simplex
2) : half-duplex
3) : full-duplex
4) : automatic
Correct Option : 1 From : Lecture 6

Question # 134
In _____ transmission, the channel capacity is shared by both communicating devices at all times.
1) : simplex
2) : half-duplex
3) : full-duplex
4) : half-simplex
Correct Option : 3 From : Lecture 6

Question # 135
Data flow between two devices can occur in a _____ way.
1) : simplex
2) : half-duplex
3) : full-duplex
4) : all of the above
Correct Option : 4 From : Lecture 6

Question # 136

A _____ is a data communication system within a building, plant, or campus, or between nearby buildings.

1) : MAN
2) : LAN
3) : WAN
4) : None of the above

Correct Option : 2 From : Lecture 6

Question # 137

A _____ is a data communication system spanning states, countries, or the whole world.

1) : MAN
2) : LAN
3) : WAN
4) : None of the above

Correct Option : 3 From : Lecture 6

Question # 138

_____ is a collection of many separate networks.

1) : A WAN
2) : An internet
3) : A LAN
4) : None of the above

Correct Option : 1 From : Lecture 6

Question # 139

There are _____ Internet service providers.

1) : Local
2) : Regional
3) : National and international
4) : All of the above

Correct Option : 3 From : Lecture 6

Question # 140

A _____ is a set of rules that governs data communication.

1) : Forum
2) : Protocol
3) : Standard
4) : None of the above

Correct Option : 2 From : Lecture 6

Question # 141

_____ is an idea or concept that is a precursor to an Internet standard.

1) : RCF

2) : RFC
3) : ID
4) : None of the above
Correct Option : 2 From : Lecture 6
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Question # 142
The _____ layer changes bits into electromagnetic signals.
1) : Physical
2) : Transport
3) : None of the above
4) : Data link
Correct Option : 1 From : Lecture 7
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Question # 143
The physical layer is concerned with the transmission of _____ over the physical medium.
1) : Programs
2) : Protocols
3) : Bits
4) : Dialogs
Correct Option : 3 From : Lecture 7
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Question # 144
Which layer functions as a liaison between user support layers and network support layers?
1) : Network layer
2) : Transport layer
3) : Physical layer
4) : Application layer
Correct Option : 3 From : Lecture 7
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Question # 145
The Internet model consists of _____ layers.
1) : Three
2) : Five
3) : Seven
4) : Eight
Correct Option : 2 From : Lecture 7
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Question # 146
The _____ layer is the layer closest to the transmission medium.
1) : Network
2) : Physical
3) : Data link
4) : Transport
Correct Option : 2 From : Lecture 7

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Question # 147

The _____ layer lies between the network layer and the application layer.

1) : Data link
2) : Physical
3) : Transport
4) : None of the above

Correct Option : 3 From : Lecture 8

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Question # 148

Layer 2 lies between the physical layer and the _____ layer.

1) : Data link
2) : Network
3) : Transport
4) : None of the above

Correct Option : 2 From : Lecture 8

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Question # 149

As the data packet moves from the lower to the upper layers, headers are _____.

1) : Added
2) : Rearranged
3) : Modified
4) : Subtracted

Correct Option : 4 From : Lecture 9

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Question # 150

As the data packet moves from the upper to the lower layers, headers are _____.

1) : Removed
2) : Added
3) : Rearranged
4) : Modified

Correct Option : 3 From : Lecture 9

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Question # 151

When data are transmitted from device A to device B, the header from A's layer 4 is read by B's _____ layer.

1) : Physical
2) : Application
3) : Transport
4) : None of the above

Correct Option : 3 From : Lecture 9

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Question # 152

What is the main function of the transport layer?

1) : Process-to-process delivery
2) : Node-to-node delivery
3) : Synchronization
4) : Updating and maintenance of routing tables

Correct Option : 1 From : Lecture 9

Question # 153

The process-to-process delivery of the entire message is the responsibility of the _____ layer.

1) : Physical
2) : Network
3) : Transport
4) : Application

Correct Option : 3 From : Lecture 9

Top

Question No: 1 (Marks: 1) - Please choose one

Dividing data into manageable parts or data chunks is called as

- ► packetizing
- ► framing
- ► both are true
- ► both are false

Question No: 2 (Marks: 1) - Please choose one

_____requires the maximum number of I/O ports.

- ► Bus
- ► Star
- ► Mesh
- ► Ring

Question No: 3 (Marks: 1) - Please choose one

Unidirectional traffic movement is overcome by dual ring technology.

- ► True
- ► False

Question No: 4 (Marks: 1) - Please choose one

Headers are added at layers 1 and 7 of OSI model.

- ► True
- ► False

Question No: 5 (Marks: 1) - Please choose one

Upper OSI layers are always implemented in _____

- ► software
- ► hardware
- ► both hardware and software

Question No: 6 (Marks: 1) - Please choose one

Internet with small “i” specifies the world wide Network the actual internet.

- ► True
- ► False

Question No: 7 (Marks: 1) - Please choose one

Data synchronization is a function related with _____

- ► session layer
- ► presentation layer
- ► transport

Question No: 8 (Marks: 1) - Please choose one

Session layer is responsible for segmentation and reassembly.

- ► True
- ► False

Question No: 9 (Marks: 1) - Please choose one

A periodic signal can always be decomposed into _____

- ► exactly an odd number of sine waves
- ► a set of sine waves

- ► set of sine waves, one of the which must have a phase of 00
- ► none of the given

Question No: 10 (Marks: 1) - Please choose one

The powerful carrier signal is called as the_____

- ► carrier frequency
- ► base signal
- ► carrier frequency and base signal
- ► none of given

Question No: 11 (Marks: 1) - Please choose one

In _____ transmission the timing of the signal is unimportant.

- ► Asynchronous
- ► Synchronous
- ► Polar
- ► Bi-polar

Question No: 12 (Marks: 1) - Please choose one

In case of uploading at the switching station, data is converted to digital signal using _____.

- ► TCP
- ► PCM

► ICP

► TDM

Question No: 13 (Marks: 1) - Please choose one

Transmission of data from ISP to the subscriber is called Downloading.

► True

► False

Question No: 14 (Marks: 1) - Please choose one

Transmission media are usually categorized as _____

► Fixed or Unfixed

► Guided or Unguided

► Determinate or Indeterminate

► Metallic or Nonmetallic

Question No: 15 (Marks: 1) - Please choose one

Category 1 UTP cable is most often used in _____ networks.

► Fast Ethernet

► Traditional Ethernet

► Infra-red

► Telephone

Question No: 16 (Marks: 1) - Please choose one

The inner core of an optical fiber is _____ in composition.

- ► Glass plastic
- ► Copper
- ► Bimetallic
- ► Liquid

Question No: 17 (Marks: 1) - Please choose one

Radio wave and microwave frequencies range from _____.

- ► 3 to 300 KHz
- ► 300 KHz to300 KHz to 3 GHz
- ► 3 KHz to 300 GHz
- ► 3 KHz to 3000 GHz

Question No: 18 (Marks: 1) - Please choose one

The _____ is an association that sponsors the use of infrared waves.

- ► IrDA
- ► EIA
- ► FCC
- ► PUD

Question No: 19 (Marks: 1) - Please choose one

Optical fibers are defined by the ratio of the _____ of their core to the diameter of their cladding.

- ► Diameter
- ► Radius
- ► Length
- ► Width

Question No: 20 (Marks: 1) - Please choose one

All of popular Fiber optic connectors are _____ shaped.

- ► Conical
- ► Barrel
- ► Circular
- ► Rectangular

Question No: 21 (Marks: 1) - Please choose one

Which media can support higher Bandwidths and higher data rates.

- ► Coaxial cable
- ► Optical fiber
- ► STP
- ► UTP

Question No: 22 (Marks: 1) - Please choose one

The VLF and LF bands use _____ propagation for communications.

- ► Ground
- ► Sky
- ► Line of sight
- ► Space

Question No: 23 (Marks: 1) - Please choose one

Middle frequency waves having range 300 KHz-3 MHz always use _____ propagation.

- ► Ground
- ► Sky
- ► Line of Sight
- ► Space

Question No: 24 (Marks: 1) - Please choose one

Which of the following are not used to measure the performance of TX Media.

- ► Throughput
- ► Propagation Speed
- ► Propagation Time

► none of the given

Question No: 25 (Marks: 1) - Please choose one

A portion of the path that carries TX b/w a given pair of devices is known as _____.

► Node

► Bridge

► Channel

► Gateway

Question No: 26 (Marks: 1) - Please choose one

A prism can deflect the light depending upon the angle of _____ and the frequency.

► Deviation

► Incident

► Refraction

► Reflection

Question No: 27 (Marks: 1) - Please choose one

In bit _____, MUX adds extra bits to a device.

► Stuffing

► Adding

- ► Multiplication
- ► Exchanging

Question No: 28 (Marks: 1) - Please choose one

Need for Addressing makes Asynchronous TDM inefficient for bit or byte _____.

- ► Interleaving
- ► Addition
- ► Substraction
- ► None of the given

Question No: 29 (Marks: 1) - Please choose one

_____ takes data from one high speed line and breaks it into portions.

- ► Multiplexing
- ► Inverse multiplexing
- ► Inverse subtraction
- ► Inverse addition

Question No: 30 (Marks: 1) - Please choose one

Multiplexing has long been used as an essential tool in the _____.

- ► Electronic industry

► Telephone industry

► Space science

► VLAN

Question No: 31 (Marks: 1) - Please choose one

The local loop has _____ cable that connects the subscriber telephone to the nearest end office.

► Twisted-pair

► Coaxial

► Fiber-optic

► None of the given

Question No: 32 (Marks: 1) - Please choose one

T Lines are _____ lines designed for digital data.

► Analog

► Digital

► Composite

► Telephone

Question No: 33 (Marks: 1) - Please choose one

In CRC there is no error if the remainder at the receiver is _____

- ► Equal to the remainder at the sender
- ► Zero
- ► Nonzero
- ► The quotient at the sender

Question No: 34 (Marks: 1) - Please choose one

Which error detection method involves the use of parity bits?

- ► Simple parity check & two dimensional parity check
- ► CRC
- ► Two-dimensional parity check
- ► Simple parity check

Question No: 35 (Marks: 1) - Please choose one

If odd parity is used for ASCII error detection, the number of 0s per 8-bit symbol is _____

- ► Even
- ► Odd
- ► Indeterminate
- ► 42

Question No: 36 (Marks: 1) - Please choose one

The Hamming code is a method of _____

- ► Error detection
- ► Error correction
- ► Error ecapsulation
- ► Error detection & Error encapsulation

Question No: 37 (Marks: 1) - Please choose one

Error control is both error _____ and error _____

- ► detection; correction
- ► detection; deletion
- ► detection; avoidance
- ► detection; forwarding

Question No: 38 (Marks: 1) - Please choose one

ENQ/ACK stands for_____

- ► Enquiry/ Acknowledgment
- ► Enque/ Acknowledgment
- ► Enquist/ Acknowledgment
- ► none of the given

Question No: 39 (Marks: 1) - Please choose one

In primary-secondary communication _____ is always the initiator of a session

- ► Primary
- ► Secondary
- ► Sender
- ► Receiver

Question No: 40 (Marks: 1) - Please choose one

Primary device uses _____ to receive transmission from the secondary devices.

- ► ACK
- ► ENQ
- ► POLL

Question No: 41 (Marks: 1) - Please choose one

In _____ ARQ, if a NAK is received, only the specific damaged or lost frame is retransmitted.

- ► Stop-and-wait
- ► Go-Back-N
- ► Selective repeat
- ► Stop-and-wait & Go-back-N

Question No: 42 (Marks: 1) - Please choose one

A timer is set when _____ is sent out.

- ► A data frame

► An ACK

► A NAK

Question No: 43 (Marks: 1) - Please choose one

For stop-and-wait ARQ, for N data packets sent, _____ acknowledgments are needed.

► N

► 2N

► N-1

► N+1

Question No: 44 (Marks: 1) - Please choose one

HDLC is an acronym for _____.

► High-duplex line communication

► High-level data link control

► Half-duplex digital link combination

► Host double-level circuit

Question No: 45 (Marks: 1) - Please choose one

The address field of a frame in HDLC protocol contains the address of the _____ station.

► Primary

► Secondary

► Tertiary

► Primary and Secondary

Question No: 46 (Marks: 1) - Please choose one

The DSAP and SSAP are addresses used by _____ to identify the protocol stacks.

► LLC

► MAC

► Network

Question No: 47 (Marks: 1) - Please choose one

IEEE divides the base band category into _____ standards.

► 5

► 4

► 3

► 6

Question No: 48 (Marks: 1) - Please choose one

Which of the following is a bus topology LAN that uses base band signaling and has a max. segment length of 500 meters

► 10 Base5

- ► 10 Base2
- ► 100 Base2
- ► 100 Base5

Question No: 49 (Marks: 1) - Please choose one

We need _____ to decompose a composite signal into its components.

- ► fourier transform
- ► nyquist theorem
- ► shannon capacity

Question No: 50 (Marks: 1) - Please choose one

Data from computer is in _____ form and the local loop handles _____ signals.

- ► Analog; analog
- ► Analog; digital
- ► Digital; digital
- ► Digital; analog

Question No: 51 (Marks: 2)

What is the relationship between the size of the CRC remainder and the divisor?

Question No: 52 (Marks: 2)

Stop-and- wait ARQ has two control variables S and R. What are their functions? [2]

Question No: 53 (Marks: 2)

What is meant by Transmission Impairments?

Question No: 54 (Marks: 3)

Write down names of the control frames in XMODEM. [3]

Question No: 55 (Marks: 3)

What are the fractional T Lines?

Question No: 56 (Marks: 3)

what is interleaving?

Question No: 57 (Marks: 5)

Name and discuss briefly the bits in the HDLC control field. [5]

Question No: 58 (Marks: 5)

What is the difference between Digital Data Service (DDS) and Digital Signal Service (DS)?

Question No: 59 (Marks: 10)

Give characteristics of switched analog services and leased analog services. [5+5]

Dear Students....
CS601 Current Paper.....

Time: 60 min

Marks: 42

Student Info	
Student ID:	
Center:	
Exam Date:	

For Teacher's Use Only									
Q No.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Total**
Marks									
Q No.	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	
Marks									
Q No.	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	
Marks									
Q No.	**25**	**26**	**27**						
Marks									

Question No: 1 (Marks: 1) - Please choose one

Effective network mean that the network has fast delivery, timeliness and

► high bandwidth

► duplex transmission

► accurate transmission

► low bandwidth

Question No: 2 (Marks: 1) - Please choose one

Which one best describes the given statement:

"To allow multiple users to share total capacity of a transmission medium"

► congestion control

► exchange management

► multiplexing

Question No: 3 (Marks: 1) - Please choose one

A_____ provides a model for development that makes it possible for a product to work regardless of the individual manufacturer.

► protocol

► standard

► topology

► system

Question No: 4 (Marks: 1) - Please choose one

_____ is a multipoint topology.

► Ring

► Mesh

► Tree

► Bus

Question No: 5 (Marks: 1) - Please choose one

_____requires the maximum number of I/O ports.

► Bus
► Star
► Mesh
► Ring

Question No: 6 (Marks: 1) - Please choose one

_____ topology tells us how networks communicate with one another and how data is transferred.

► logical
► physical
► logical and physical

Question No: 7 (Marks: 1) - Please choose one

Which topology requires a multipoint connection?

► Mesh
► Star
► Bus
► Ring

Question No: 8 (Marks: 1) - Please choose one

Headers are added at layers 1 and 7 of OSI model.

► True
► False

Question No: 9 (Marks: 1) - Please choose one

Internet with small “i” specifies the world wide Network the actual internet.

► True
► False

Question No: 10 (Marks: 1) - Please choose one

The internet model consists of _____ layers.

► three

► two

► five

► seven

Question No: 11 (Marks: 1) - Please choose one

As the data packet moves from the lower to the upper layers, headers are _____.

► added

► subtracted

► rearranged

► modified

Question No: 12 (Marks: 1) - Please choose one

Data link layer deals with mechanical and electrical specifications of transmission medium and interface

► True

► False

Question No: 13 (Marks: 1) - Please choose one

Which layer is responsible for source to destination delivery of entire message?

► transport layer

► network layer

► session layer

► application layer

Question No: 14 (Marks: 1) - Please choose one

The inversion of the level at 1 bit is called as _____

► NRZ-L

► NRZ-I

► RZ

Question No: 15 (Marks: 1) - Please choose one

Which of the encoding schemes have bandwidth problems?

► Differential Manchester

► AMI

► RZ

Question No: 16 (Marks: 1) - Please choose one

Bi phase encoding is a type of bipolar encoding in which we use two voltage levels.

► True

► False

Question No: 17 (Marks: 1) - Please choose one

ASK require a minimum bandwidth equal to its baud rate.

► True

► False

Question No: 18 (Marks: 1) - Please choose one

A 56k modem can download at a rate of _____ Kbps and upload at a rate of _____ Kbps.

► 33.6: 33.6

► 33.6: 56.6

► 56.6: 33.6

► 56.6: 56.6

Question No: 19 (Marks: 1) - Please choose one

In _____ transmission the timing of the signal is unimportant.

► Asynchronous

► Synchronous

► Polar

► Bi-polar

Question No: 20 (Marks: 1) - Please choose one

There are _____ basic functional units involved in the communication of data.

► 3

► 1

► 2

► 4

Question No: 21 (Marks: 1) - Please choose one

At the _____layer, a DCE takes data generated by a DTE.

► physical

► transport

► data link

► application

Question No: 22 (Marks: 1) - Please choose one

The last modified version of EIA-232 standard is _____

► EIA-232 D

► EIA-232 A

► EIA-232 B

► EIA-232 C

Question No: 23 (Marks: 1) - Please choose one

Traditional telephony lines carry frequencies btw 300 Hz and 3300 Hz giving them a bandwidth of 3000 Hz.

► 3100

► 3000

► 3200

► 3300

Question No: 24 (Marks: 1) - Please choose one

We need _____ to decompose a composite signal into its components.

► fourier transform

► nyquist theorem

► shannon capacity

Question No: 25 (Marks: 3)

At which layer synchronization of Bits occur and how?

Question No: 26 (Marks: 5)

What is meant by Zero Frequency and Infinite Frequency?

Question No: 27 (Marks: 10)

Describe functions of each layer of OSI Model briefly?

Top

MIDTERM EXAMINATION
Spring 2009
CS601- Data Communication (Session - 2)

Ref No: 448559
Time: 60 min
Marks: 40

For Teacher's Use Only									
Q No.	1	2	3	4	5	6	7	8	Total
Marks									
Q No.	9	10	11	12	13	14	15	16	
Marks									
Q No.	17	18	19	20	21	22	23	24	
Marks									

Question No: 1 (Marks: 1) - Please choose one

The last modified version of EIA-232 standard is _____

- ► EIA-232 D
- ► EIA-232 A
- ► EIA-232 B
- ► EIA-232 C

Question No: 2 (Marks: 1) - Please choose one

_____ require more bandwidth.

- ► FSK
- ► ASK
- ► PSK
- ► QAM

Question No: 3 (Marks: 1) - Please choose one

ASK, PSK, FSK and QAM are examples of _____ modulation.

- ► digital-to-digital
- ► digital-to-analog
- ► analog-to-analog
- ► analog-to-digital

Question No: 4 (Marks: 1) - Please choose one

Amplitude in ASK is more resistive to EMI and Noise.

- True
- False

Question No: 5 (Marks: 1) - Please choose one

The inversion of the level at 1 bit is called as _____

- ► NRZ-L
- ► NRZ-I
- ► RZ

Question No: 6 (Marks: 1) - Please choose one

Manchester is a type of _____encoding.

- ► biphase
- ► polar
- ► biphase & polar
- ► none of the given

Question No: 7 (Marks: 1) - Please choose one

Zero crossing bandwidth is also called as equivalent noise bandwidth.

- ► True
- ► False

Question No: 8 (Marks: 1) - Please choose one

A periodic signal can always be decomposed into _____

- ► exactly an odd number of sine waves
- ► a set of sine waves
- ► set of sine waves, one of the which must have a phase of 00
- ► none of the given

Question No: 9 (Marks: 1) - Please choose one

Data must be converted into_____ before transmission.

- signal
- wave
- electric pulse

Question No: 10 (Marks: 1) - Please choose one

A signal that repeats a pattern over a regular interval of time is called_____.

- ► periodic signal
- ► analog signal
- ► composite signal

Question No: 11 (Marks: 1) - Please choose one

Fourier transform tells us that any digital signal can be decomposed into infinite number of periodic signals

- ► True
- ► False

Question No: 12 (Marks: 1) - Please choose one

When data are transmitted from device A to device B, the header from A's layer 4 is read by B's _____ layer.

- ► physical
- ► transport
- ► application
- ► none of the given

Question No: 13 (Marks: 1) - Please choose one

_____ layer deals with syntax and semantics of information exchange.

- presentation
- session
- application
- physical

Question No: 14 (Marks: 1) - Please choose one

Which layer is responsible for source to destination delivery of entire message?

- ► transport layer
- ► network layer
- ► session layer
- ► application layer

Question No: 15 (Marks: 1) - Please choose one

Line configuration is the function of _____ layer

- ► data link
- ► network
- ► physical
- ► transport

Question No: 16 (Marks: 1) - Please choose one

_____representation of links that connect nodes is called as physical topology.

- ► geometrical
- ► logical
- ► physical

Question No: 17 (Marks: 1) - Please choose one

_____ topology tells us how networks communicate with one another and how data is transferred.

- ► logical
- ► physical
- ► logical and physical

Question No: 18 (Marks: 1) - Please choose one

_____requires the maximum number of I/O ports.

- ► Bus
- ► Star
- ► Mesh
- ► Ring

Question No: 19 (Marks: 1) - Please choose one

Which one is not among standard creation committee.

- ► internet society and IETF
- ► ITU-T
- ► IEEE

Question No: 20 (Marks: 1) - Please choose one

Frequency of a failure and network recovery time after a failure are measures of the _____ of a network.

- ► Performance

- Reliability
- Security
- Feasibility

Question No: 21 (Marks: 2)

What relationships are possible in a network?

Question No: 22 (Marks: 3)

When and why recovery techniques are required in data communication?

Question No: 23 (Marks: 5)

Differentiates between the following terms. [10 marks]

(a) Syntax and Semantics of protocol.
(b) Network management and exchange management.
(c) Monolithic and structured.

Question No: 24 (Marks: 10)

Compare time and frequency domain plots with suitable examples?

Top

/wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 1 of 10 (Start time: 11:37:44 AM) **Total Marks:** 1

For point-to-point configuration, addressing is needed

Select correct option:

- True
- False

Click here to Save Answer & Move to Next Question

/wEWBAKFvdSaD /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 2 of 10 (Start time: 11:38:27 AM) **Total Marks:** 1

In _____ ARQ, if a NAK is received, only the specific damaged or lost frame is retransmitted.

Select correct option:

- Stop and Wait
- Go-Back-N
- Selective repeat
- Stop-and-wait & Go-back-N

Click here to Save Answer & Move to Next Question

/wEWBgLBivmxC\ /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 3 of 10 (Start time: 11:39:07 AM) **Total Marks:** 1

Sliding window requires that data frames be transmitted _____

Select correct option:

- Sequentially
- Frequently
- Asynchronously
- Non of the given

Click here to Save Answer & Move to Next Question

/wEWBgKIr6CLBg /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 4 of 10 (Start time: 11:40:37 AM) **Total Marks:** 1

Which one is not the function of data link layer?

Select correct option:

- Line discipline
- Flow control

- Error control
- Network control

Click here to Save Answer & Move to Next Question

/wEWBgKWy4TPE /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 5 of 10 (Start time: 11:40:53 AM) **Total Marks:** 1

Flow control is needed to prevent _____.

Select correct option:

- Bit errors
- Overflow of the sender buffer
- Overflow of the receiver buffer
- Collision between sender and receiver

Click here to Save Answer & Move to Next Question

/wEWBgLYmOaZA /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 6 of 10 (Start time: 11:42:09 AM) **Total Marks:** 1

Error control in the data link layer is based on _____.

Select correct option:

- automatic repeat request
- automatic repeat acknowledgment
- automatic send acknowledgment
- automatic send request

Click here to Save Answer & Move to Next Question

/wEWBgKdh9uED /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 7 of 10 (Start time: 11:43:29 AM) **Total Marks:** 1

Data link protocols can be divided into _____ sub-groups.

Select correct option:

- two
- three
- four
- five

Click here to Save Answer & Move to Next Question

/wEWBgLm+qmr(/wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 8 of 10 (Start time: 11:43:50 AM) **Total Marks:** 1

For stop-and-wait ARQ, for n data packets sent, _____ acknowledgments are needed.

Select correct option:

- n
- 2n
- N-1
- N+1

Click here to Save Answer & Move to Next Question

/wEWBgL70P1IAr /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 9 of 10 (Start time: 11:45:20 AM) **Total Marks:** 1

In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence number?

Select correct option:

- 0 to 63
- 0 to 64
- 1 to 63
- 1 to 64

Click here to Save Answer & Move to Next Question

/wEWBgLvu6vVD /wEPDwUKMTY2N

Quiz Start Time: 11:37 AM

Question # 10 of 10 (Start time: 11:46:52 AM) **Total Marks:** 1

In data link layer, communication requires at least _____ devices working together.

Select correct option:

- 3
- 2
- 4
- 1

Click here to Save Answer & Move to Next Question

/wEWBgLFg9GvB /wEPDwUKMTY2N

Quiz Start Time: 11:52 AM

Question # 1 of 10 (Start time: 11:52:19 AM) **Total Marks:** 1

A timer is set when _____ is (are) sent out.

Select correct option:

- A data frame
- An ACK
- A NAK
- All of given

Click here to Save Answer & Move to Next Question

/wEWBgLzutK0Bg /wEPDwUKMTY2N

Quiz Start Time: 11:52 AM

Question # 3 of 10 (Start time: 11:54:31 AM) **Total Marks:** 1

Flow control is needed to prevent _____.

Select correct option:

- Collision between sender and receiver
- Overflow of the receiver buffer
- Overflow of the sender buffer
- Bit errors

Click here to Save Answer & Move to Next Question

/wEWBgKEmL6AA /wEPDwUKMTY2N

Quiz Start Time: 11:52 AM

Question # 4 of 10 (Start time: 11:55:39 AM) **Total Marks:** 1

In selective-reject ARQ, only the specific damaged or lost frame is_____.

Select correct option:

- retransmitted

Click here to Save Answer & Move to Next Question

/wEWBgLCoY/iAg /wEPDwUKMTY2N

Quiz Start Time: 11:52 AM

Question # 5 of 10 (Start time: 11:56:13 AM) **Total Marks:** 1

If the primary wants to receive data, it asks the second-arise if they have anything to send, this is called

Select correct option:

- POLLING
- SELECTING

Click here to Save Answer & Move to Next Question

/wEWBAK3upDD[/wEPDwUKMTY2N

Quiz Start Time: 11:52 AM

Question # 10 of 10 (Start time: 12:02:01 PM) **Total Marks:** 1

Data link control is composed of _____ important functions.

Select correct option:

- 2
- 3
- 4
- 5

Click here to Save Answer & Move to Next Question

/wEWBgLU+4+Fl /wEPDwUKMTY2N

Quiz Start Time: 12:10 PM

Question # 5 of 10 (Start time: 12:12:08 PM) **Total Marks:** 1

Which error detection method consists of just one redundant bit per data unit?

Select correct option:

- Simple parity check

- Two-dimensional parity check
- CRC
- Checksum

Click here to Save Answer & Move to Next Question

/wEWBgLNyd6bD /wEPDwUKMTY2N

Quiz Start Time: 12:10 PM

Question # 6 of 10 (Start time: 12:13:39 PM) **Total Marks:** 1

In Go-Back-N ARQ, if frames 4, 5 and 6 are received successfully, the receiver may send an ACK _____ to the sender.

Select correct option:

- 5
- 6
- 7
- Any of the given

Click here to Save Answer & Move to Next Question

/wEWBgLA/O+3C /wEPDwUKMTY2N

Quiz Start Time: 12:10 PM

Question # 7 of 10 (Start time: 12:14:36 PM) **Total Marks:** 1

If the data unit is 111111 and the divisor is 1010, what is the dividend at the transmitter?

Select correct option:

- 111111000
- 1111110000
- 111111
- 1111111010

Click here to Save Answer & Move to Next Question

/wEWBgKt+YqbD /wEPDwUKMTY2N

Quiz Start Time: 12:10 PM

Question # 8 of 10 (Start time: 12:16:06 PM) **Total Marks:** 1

ARQ stands for _____

Select correct option:

- Automatic repeat quantization
- Automatic repeat request
- Automatic retransmission request
- Acknowledge repeat request.

Click here to Save Answer & Move to Next Question

/wEWBgLAjPHDA /wEPDwUKMTY2N

Quiz Start Time: 12:10 PM

Question # 9 of 10 (Start time: 12:16:31 PM) **Total Marks:** 1

For a sliding window of size n-1 (n sequence numbers), there can be a maximum of _____ frames sent but unacknowledged.

Select correct option:

- 0
- N-1
- N
- N+1

Click here to Save Answer & Move to Next Question

/wEWBgLinpqjDgI /wEPDwUKMTY2N

Quiz Start Time: 12:18 PM

Question # 6 of 10 (Start time: 12:20:15 PM) **Total Marks:** 1

In Full-duplex, the initiator sends data while the responder waits

Select correct option:

- True
- False

Click here to Save Answer & Move to Next Question

/wEWBAKZmvbUE /wEPDwUKMTY2N

Quiz Start Time: 12:18 PM

Question # 10 of 10 (Start time: 12:21:10 PM) **Total Marks:** 1

In CRC there is no error if the remainder at the receiver is _____.

Select correct option:

- Equal to the remainder at the sender
- Zero
- NonZero
- The quotient at the sender

Click here to Save Answer & Move to Next Question

/wEWBgLb5LeHC /wEPDwUKMTY2N

Quiz Start Time: 12:22 PM

Question # 6 of 10 (Start time: 12:22:41 PM) **Total Marks:** 1

Error control in the data link layer is based on _____.

Select correct option:

- automatic repeat request
- automatic repeat acknowledgment
- automatic send acknowledgment
- automatic send request

Click here to Save Answer & Move to Next Question

/wEWBgKjtttQArI /wEPDwUKMTY2N

Quiz Start Time: 12:22 PM

Question # 8 of 10 (Start time: 12:23:17 PM) **Total Marks:** 1

Flow Control is the responsibility of _____

Select correct option:

- Network Layer
- Transport Layer
- Data Link Layer
- Physical Layer

Click here to Save Answer & Move to Next Question

/wEWBgLgxMW9I /wEPDwUKMTY2N

Quiz Start Time: 12:25 PM

Question # 2 of 10 (Start time: 12:26:03 PM) **Total Marks:** 1

The Hamming code is a method of _____.

Select correct option:

- Error detection
- Error correction
- Error encapsulation
- Error detection & error encapsulation

Click here to Save Answer & Move to Next Question

/wEWBgKmwvq2I /wEPDwUKMTY2N

Quiz Start Time: 12:25 PM

Question # 10 of 10 (Start time: 12:27:40 PM) **Total Marks:** 1

In _____ ARQ, if a NAK is received, only the specific damaged or lost frame is retransmitted.

Select correct option:

- Stop and Wait
- Go-Back-N
- Selective repeat
- Stop-and-wait & Go-back-N

Click here to Save Answer & Move to Next Question

/wEWBgKTsqnIBC

Top

CS 601 DATA COMMUNICATION
FALL 2009 – 12 FEB 2010

Question # 1 of 10

In FDDI, THT stands for:

- Token Hash Timer
- Tier Holding Timer
- Target Holding Timer
- **Token Holding Timer**

Question # 2 of 10

The DSAP and SSAP are addresses used by ____to identify the protocol stack.

- Network
- **MAC**
- LLC
- None of the above

Question # 3 of 10

Repeaters work on the ____Layer/Layers

- Data Link
- **Physical**
- Network
- All of the above

Question # 4 of 10

Bridge is _____ Layer Device

- **Data Link**
- Physical
- Network
- None of the above

Question # 5 of 10

On the transport layer of TCP/IP suit_____ protocols are used

- TCP & IP
- **TCP & UDP**

Question # 6 of 10

Application layer of TCP/IP suit is equivalent of _____layers of OSI Model

- Application, Presentation and Transport
- Application, Session and Transport
- **Application, Presentation and Session**
- None of the above

Question # 7 of 10

A Repeater does not allow us to extend the physical length of network

- True
- **False**

Question # 8 of 10

Shortest frame in HDLC protocols is usually the ____ frame.

CS601 Data Communication Solved MCQs Final Term (AIO)

Which layer in ATM protocol reformats the data received from other networks?

a. Physical
b. Application adaptation
c. Data adaptation
d. ATM
The correct **answer** is b

Which layer in ATM protocol has a 53-byte cell as an end product?

a. ATM
b. Application adaptation
c. Physical
d. Cell transformation
The correct **answer** is a

Which AAL type is designed to support a data stream that has a constant bit rate?

a. AAL1
b. AAL2
c. AAL3/4
d. AAL5
The correct **answer** is a

The VPI of a UNI is bits in length.

a. 12
b. 16
c. 24
d. 8
The correct **answer** is d

In an ATM network, all cells belonging to a single message follow the same and remain in their original order un til they reach their destination.

a. Virtual circuit
b. Transmission path
c. Virtual path
d. None of the above
The correct **answer** is a

A device called a(n) allows frames from an ATM network to be transmitted across a Frame Relay network.

a. FRAD
b. LMI
c. VOFR
d. DLCI
The correct **answer** is a

A provides a connection or a set of connections between switches.

a. Transmission path
b. Virtual circuit
c. Virtual path
d. None of the above
The correct **answer** is b

A _ is the physical connection between an endpoint and a switch or between two switches.

a. Virtual path
b. Transmission path
c. Virtual circuit
d. None of the above

The correct **answer** is b

On a network that uses NAT, the has a translation table.

a. Router
b. Switch
c. Server
d. None of the above
The correct **answer** is a

Identify the class of IP address 229.1.2.3.

a. Class A
b. Class B
c. Class C
d. Class D
The correct **answer** is d

On a network that uses NAT, initiates the communication.

a. An internal host
b. An external host
c. The router
d. (a) or (b)
The correct **answer** is a

A subnet mask in class B can have _ 1s with the remaining bits 0s.

a. Nine
b. Seventeen
c. Three
d. Fourteen
The correct **answer** is b

A subnet mask in class C can have 1s with the remaining bits 0s.

a. Twenty-five
b. Twelve
c. Seven
d. Ten
The correct **answer** is a

Identify the class of IP address 4.5.6.7.

a. Class A
b. Class B
c. Class C
d. Class D
The correct **answer** is a

Identify the class of IP address 191.1.2.3.

a. Class A
b. Class B
c. Class C
d. Class D
The correct **answer** is b

A subnet mask in class A can have 1s with the remaining bits 0s.

a. Nine
b. Four
c. Thirty-three
d. Three
The correct **answer** is a

Class _ has the greatest number of hosts per given network address.

a. A
b. B
c. C
d. D
The correct **answer** is a

A subnet mask in class B has nineteen 1s. How many subnets does it define?

a. 128
b. 8
c. 32
d. 64
The correct **answer** is b

In _ routing, the full IP address of a destination is given in the routing table.

a. Next-hop
b. Host-specific
c. Network-specific
d. Default
The correct **answer** is b

A subnet mask in class C has twenty-five 1s. How many subnets does it define?

a. 0
b. 2
c. 8
d. 16
The correct **answer** is b

Given the IP address 180.25.21.172 and the subnet mask 255.255.192.0, what is the subnet address?

a. 180.25.21.0
b. 180.25.8.0
c. 180.25.0.0
d. 180.0.0.0
The correct **answer** is c

Given the IP address 18.250.31.14 and the subnet mask 255.240.0.0, what is the subnet address?

a. 18.9.0.14
b. 18.0.0.14
c. 18.31.0.14
d. 18.240.0.0
The correct **answer** is d

Is a client-server program that provides an IP address, subnet mask, IP address of a router, and IP address of a name server to a computer.

a. NAT
b. DHCP
c. CIDR
d. ISP
The correct **answer** is b

In _, each packet of a message need not follow the same path from sender to receiver.

a. The virtual approach to packet switching
b. The datagram approach to packet switching

c. Message switching

d. None of the above
The correct **answer** is b

An IP address consists of _ bits.

a. 8
b. 32
c. 4
d. Any of the above
The correct **answer** is b

On a network that uses NAT, the router can use global address(es).

a. A pool of
b. One
c. Two
d. None of the above
The correct **answer** is a

In _ routing, the mask and destination addresses are both 0.0.0.0 in the routing table.

a. Default
b. Next-hop
c. Network-specific
d. Host-specific
The correct **answer** is a

A subnet mask in class A has fourteen 1s. How many subnets does it define?

a. 64
b. 128
c. 32
d. 8
The correct **answer** is a

In which type of switching do all the packets of a message follow the same channels of a path?

a. Virtual circuit packet switching
b. Message switching
c. Datagram packet switching
d. None of the above
The correct **answer** is a

In _ routing, the destination address is a network address in the routing table.

a. Network-specific
b. Host-specific
c. Next-hop
d. Default
The correct **answer** is a

Given the IP address 201.14.78.65 and the subnet mask 255.255.255.224, what is the subnet address?

a. 201.14.78.64
b. 201.14.78.32
c. 201.14.78.65
d. 201.14.78.12
The correct **answer** is a

In error reporting the encapsulated ICMP packet goes to .

a. The receiver
b. A router

c. The sender
d. Any of the above
The correct **answer** is c

When the hop-count field reaches zero and the destination has not been reached, a error message is sent.

a. Destination-unreachable
b. Redirection
c. Time-exceeded
d. Parameter-problem
The correct **answer** is c

An ARP request is to .

a. Multicast; one host
b. Unicast; all hosts
c. Broadcast; all hosts
d. Unicast; one host
The correct **answer** is c

What is the maximum size of the data portion of the IP datagram?

a. 65,515 bytes
b. 65,535 bytes
c. 65,475 bytes
d. 65,460 bytes
The correct **answer** is a

A best-effort delivery service such as IP does not include .

a. Error correction
b. Error checking
c. Datagram acknowledgment
d. All the above
The correct **answer** is d

An HLEN value of decimal 10 means .

a. There is 10 bytes of options
b. There is 40 bytes in the header
c. There is 40 bytes of options
d. There is 10 bytes in the header
The correct **answer** is b

In IPv4, what is the value of the total length field in bytes if the header is 28 bytes and the data field is 400 bytes?

a. 407
b. 107
c. 428
d. 427
The correct **answer** is c

If the fragment offset has a value of 100, it means that .

a. The first byte of the datagram is byte 800
b. The datagram has not been fragmented
c. The datagram is 100 bytes in size
d. The first byte of the datagram is byte 100
The correct **answer** is a

What is needed to determine the number of the last byte of a fragment?

a. Identification number
b. Offset number

c. Total length
d. (b) and (c)
The correct **answer** is d

The IP header size .

a. Depends on the MTU
b. Is 20 to 60 bytes long
c. Is 20 bytes long
d. Is 60 bytes long
The correct **answer** is b

If a host needs to synchronize its clock with another host, it sends a _ message.

a. Time-exceeded
b. Time-stamp-request
c. Source-quench
d. Router-advertisement
The correct **answer** is b

Which of the following is a necessary part of the IPv6 datagram?

a. Base header
b. Extension header
c. Data packet from the upper layer
d. (a) and (c)
The correct **answer** is d

Is a dynamic mapping protocol in which a physical address is found for a given IP address.

a. RARP
b. ICMP
c. ARP
d. None of the above
The correct **answer** is c

A router reads the address on a packet to determine the next hop.

a. MAC
b. Source
c. IP
d. ARP
The correct **answer** is c

The target hardware address on an Ethernet is _ in an ARP request.

a. Variable
b. Class-dependent
c. 0x000000000000
d. 0.0.0.0
The correct **answer** is c

When not all fragments of a message have been received within the designated amount of time, a error message is sent.

a. Time-exceeded
b. Parameter-problem
c. Source-quench
d. Time-stamp-request
The correct **answer** is a

A can learn about network by sending out a router-solicitation packet.
a. Router; routers
b. Router; hosts

c. Host; routers
d. Host; hosts
The correct **answer** is c

Which of the following types of ICMP messages needs to be encapsulated into an IP datagram?
a. Time-exceeded
b. Multicasting
c. Echo reply
d. All the above
The correct **answer** is d

The purpose of echo request and echo reply is to .

a. Report errors
b. Check packet lifetime
c. Check node-to-node communication
d. Find IP addresses
The correct **answer** is c

An ARP reply is to .

a. Unicast; one host
b. Broadcast; all hosts
c. Multicast; one host
d. Unicast; all hosts
The correct **answer** is a

One method to alert a source host of congestion is the message.

a. Source-quench
b. Redirection
c. Echo-request
d. Destination-unreachable
The correct **answer** is a

A time-exceeded message is generated if .

a. The round-trip time between hosts is close to zero
b. The time-to-live field has a zero value
c. Fragments of a message do not arrive within a set time
d. (b) and (c)
The correct **answer** is d

To determine whether a node is reachable, message can be sent.

a. An echo-request
b. An echo-reply
c. A redirection
d. A source-quench
The correct **answer** is a

In IPv6, the field in the base header restricts the lifetime of a datagram.

a. Version
b. Hop limit
c. Priority
d. Next-header
The correct **answer** is b

In IPv4, what is the length of the data field given an HLEN value of 12 and total length value of 40,000?

a. 39,952
b. 39,988
c. 40,012
d. 40,048

The correct **answer** is a

A datagram is fragmented into three smaller datagrams. Which of the following is true?

a. The do not fragment bit is set to 1 for all three datagrams.
b. The identification field is the same for all three datagrams.
c. The more fragment bit is set to 0 for all three datagrams.
d. The offset field is the same for all three datagrams.
The correct **answer** is b

Errors in the header or option fields of an IP datagram require a error message.

a. Source-quench
b. Parameter-problem
c. Router-solicitation
d. Redirection
The correct **answer** is b

The cost field of a router's first table from itself always has a value of .

a. Some positive integer
b. 0
c. 1
d. Infinity
The correct **answer** is b

A routing table contains .

a. The destination network ID
b. The hop count to reach the network
c. The router ID of the next hop
d. All the above
The correct **answer** is d

Router B receives an update from router A that indicates Net1 is two hops away. The next update from A says Net1 is five hops away. What value is entered in B's routing table for Net1? Assume the basic RIP is being used.

a. 6
b. 7
c. 2
d. 3
The correct **answer** is a

If the routing table contains four new entries, how many update messages must the router send to its one neighbor router?

a. 3
b. 4
c. 1
d. 2
The correct **answer** is c

An area border router can be connected to .

a. Only another router
b. Only another network
c. Only another area border router
d. Another router or another network
The correct **answer** is d

Which of the following usually has the least number of connections to other areas?
a. A transient link
b. A stub link

c. An area
d. An autonomous system
The correct **answer** is b

Is used in a dense multicast environment while is used in a sparse multicast environment.

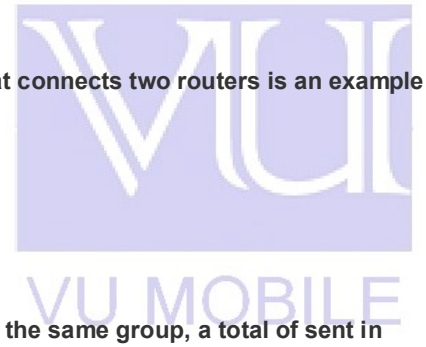
a. PIM-SM; PIM-DM
b. PIM; PIM-DM
c. PIM; PIM-SM
d. PIM-DM; PIM-SM
The correct **answer** is d

When a multicast router is not directly connected to another multicast router, a can be formed to connect the two.

a. Logical core
b. Spanning tree
c. Physical tunnel
d. Logical tunnel
The correct **answer** is d

Which type of network using the OSPF protocol can have five routers attached to it?

a. Transient
b. Stub
c. Point-to-point
d. All the above
The correct **answer** is a



A WAN using the OSPF protocol that connects two routers is an example of a type of OSPF network.

a. Stub
b. Point-to-point
c. Transient
d. Virtual
The correct **answer** is b

If four hosts on a network belong to the same group, a total of sent in

a. One membership report is
b. Two membership reports are
c. Three membership reports are
d. Four membership reports are
The correct **answer** is b

A one-to-all communication between a source and all hosts on a network is classified as a communication.

a. Unicast
b. Multicast c.
Broadcast d.
(a) and (b)
The correct **answer** is c

Which type of BGP message announces a route to a new destination?

a. Update
b. Open
c. Keep-alive
d. Notification
The correct **answer** is a

Which layer produces the OSPF message?
a. Data link
b. Transport

c. Application
d. Network
The correct **answer** is d

Which of the following is an exterior routing protocol?

a. RIP
b. OSPF
c. BGP
d. (a) and (b)
The correct **answer** is c

An area is .

a. Composed of at least two ASs
b. Another term for an internet
c. Part of an AS
d. A collection of stub areas
The correct **answer** is c

In an autonomous system with n areas, how many areas are connected to the backbone?

a. 1
b. n
c. n – 1
d. n + 1
The correct **answer** is c

Which of the following is an interior routing protocol?

a. RIP
b. OSPF
c. BGP
d. (a) and (b)
The correct **answer** is d

OSPF is based on .

a. Distance vector routing
b. Path vector routing
c. Link state routing
d. (a) and (b)
The correct **answer** is c

BGP is based on .

a. Distance vector routing
b. Link state routing
c. Path vector routing
d. (a) and (b)
The correct **answer** is c

Which type of BGP message creates a relationship between two routers?

a. Keep-alive
b. Open
c. Update
d. Notification
The correct **answer** is b

Which type of network using the OSPF protocol always consists of just two connected routers?

a. Transient
b. Stub
c. Point-to-point

d. Virtual
The correct **answer** is c

Which type of network using the OSPF protocol is the result of a break in a link between two routers?

a. Virtual
b. Point-to-point
c. Transient
d. Stub
The correct **answer** is a

Which type of BGP message is sent by a router to close a connection?

a. Open
b. Update
c. Notification
d. Keep-alive
The correct **answer** is c

An IGMP query is sent from a to a .

a. Router; host or router
b. Host; host
c. Host; router
d. Router; router
The correct **answer** is a

Which type of BGP message is sent by a system to notify another router of the sender's existence?

a. Keep-alive
b. Notification
c. Open
d. Update
The correct **answer** is a

An Ethernet LAN using the OSPF protocol with five attached routers can be called a network.

a. Point-to-point
b. Stub
c. Transient
d. Virtual
The correct **answer** is c

In distance vector routing each router receives information directly from .

a. Its neighbors only
b. Every router on the network
c. Every router less than two units away
d. A table stored by the network hosts
The correct **answer** is a

A system uses group-shared trees for multicasting. If there are 100 sources and 5 groups, there is a maximum of different trees.

a. 20
b. 100
c. 5
d. 500
The correct **answer** is c

Is a multicast routing protocol using source-based trees.
a. DVRMP
b. MOSPF

c. CBT
d. (a) and (b)
The correct **answer** is d

Pruning and grafting are strategies used in .

a. RPM
b. RPF
c. RPB
d. All the above
The correct **answer** is a

In distance vector routing a router sends out information .

a. Only when there is a change in its table
b. Only when a new host is added
c. At regularly scheduled intervals
d. Only when a new network is added
The correct **answer** is c

The field of the IGMP message is all zeros in a query message.

a. Version
b. Type
c. Group address
d. Checksum
The correct **answer** is c

The field of the IGMP message is 0x11 for a query message.

a. Version
b. Type
c. Checksum
d. d. (a) and (b)
The correct **answer** is d

A one-to-many communication between a source and a specific group of hosts is classified as a communication.

a. Multicast
b. Unicast
c. Broadcast
d. (a) and (b)
The correct **answer** is a

A one-to-one communication between a source and one destination is classified as a communicati on.

a. Unicast
b. Multicast
c. Broadcast
d. d. (a) and (b)
The correct **answer** is a

Is a multicasting application.

a. Teleconferencing
b. Distance learning
c. Information dissemination
d. All the above
The correct **answer** is d

A is a data structure with nodes and edges and a hierarchical structure.

a. Graph
b. Leaf

c. Tree
d. Root
The correct **answer** is c

A system uses source-based trees for multicasting. If there are 100 sources and 5 groups, there is a maximum of different trees.

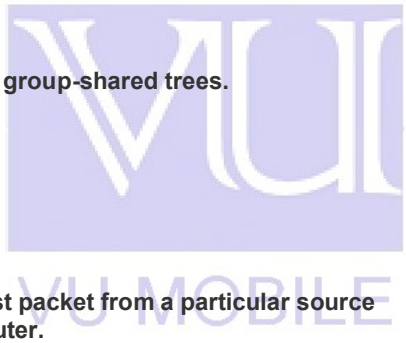
a. 5
b. 20
c. 100
d. 500
The correct **answer** is d

In a tree approach to multicasting, the combination of source and group determines the tree.

a. Shortest-group
b. Source-based
c. Spanning-source
d. Group-shared
The correct **answer** is b

In a tree approach to multicasting, the group determines the tree.

a. Group-shared
b. Spanning-source
c. Shortest-group
d. Source-based
The correct **answer** is a



Is a multicast routing protocol using group-shared trees.

a. DVRMP
b. MOSPF
c. CBT
d. (a) and (b)
The correct **answer** is c

In _ a network can receive a multicast packet from a particular source only through a designated parent router.

a. RPF
b. RPM
c. RPB
d. All the above
The correct **answer** is c

Dijkstra's algorithm is used to .

a. Create LSAs
b. Flood an internet with information
c. Create a link state database
d. Calculate the routing tables
The correct **answer** is d

A message tells an upstream router to stop sending multicast messages for a specific group through a specific router.

a. Graft
b. Prune
c. Weed
d. Plum
The correct **answer** is b

The is used by a router in response to a received-leave report.

a. Special query message
b. General query message
c. Membership report
d. Leave report
The correct **answer** is a

RIP is based on .

a. Link state routing
b. Dijkstra's algorithm
c. Path vector routing
d. Distance vector routing
The correct **answer** is d

A message tells an upstream router to start sending multicast messages for a specific group through a specific router.

a. Weed
b. Prune
c. Plum
d. Graft
The correct **answer** is d

Uses multicast link state routing concepts to create source-based trees.

a. DVMRP
b. CBT
c. BVD
d. MOSPF
The correct **answer** is d

In the protocol, a multicast packet is encapsulated inside a unicast packet with the core router as the destinat ion.

a. DVMRP
b. CBT
c. MOSPF
d. BVD
The correct **answer** is b

The is an IGMP message.

a. Query message
b. Membership report
c. Leave report
d. All the above
The correct **answer** is d

The defines the client program.

a. Well-known port number
b. Ephemeral port number
c. IP address
d. Physical address
The correct **answer** is b

The timer is used in the termination phase.

a. Retransmission
b. Time-waited
c. Persistence
d. Keep-alive
The correct **answer** is b

Which is a legal port address?

a. 0
b. 513
c. 65,535
d. All the above
The correct **answer** is d

The definition of reliable delivery includes .

a. Error-free delivery
b. Receipt of the complete message
c. In-order delivery
d. All the above
The correct **answer** is d

Which of the following does UDP guarantee?

a. Acknowledgments to the sender
b. Flow control
c. Sequence numbers on each user datagram
d. None of the above
The correct **answer** is d

The source port address on the UDP user datagram header defines .

a. The sending computer
b. The receiving computer
c. The application program on the receiving computer
d. The application program on the sending computer
The correct **answer** is d

A host can be identified by while a program running on the host can be identified by .

a. A port number; an IP address
b. An IP address; a port number
c. An IP address; a host address
d. An IP address; a well-known port
The correct **answer** is b

Which of the following is not part of the UDP user datagram header?

a. Source port address
b. Checksum
c. Length of header
d. Destination port address
The correct **answer** is c

The defines the server program.

a. IP address
b. Well-known port number
c. Ephemeral port number
d. Physical address
The correct **answer** is b

IP is responsible for communication while TCP is responsible for _ communication.

a. Process-to-process; node-to-node
b. Host-to-host; process-to-process
c. Process-to-process; host-to-host
d. Node-to-node; process-to-process
The correct **answer** is b
The timer is needed to handle the zero window-size advertisement.

a. Persistence
b. Keep-alive
c. Retransmission
d. Time-waited
The correct **answer** is a

Connection establishment involves a handshake.

a. Three-way
b. One-way
c. Two-way
d. None of the above
The correct **answer** is a

A special segment called a probe is sent by a sending TCP when the timer goes off.

a. Persistence
b. Transmission
c. Keep-alive
d. Time-waited
The correct **answer** is a

The address uniquely identifies a running application program.

a. IP address
b. NIC
c. Socket
d. Host
The correct **answer** is c

The field is used to order packets of a message.

a. Sequence number
b. Acknowledgment number
c. Urgent pointer
d. Checksum
The correct **answer** is a

The field is used for error detection.

a. Sequence number
b. Acknowledgment number
c. Urgent pointer
d. Checksum
The correct **answer** is d

Multiply the header length field by to find the total number of bytes in the TCP header.

a. 4
b. 6
c. 8
d. 2
The correct **answer** is a

Urgent data require the urgent pointer field as well as the URG bit in the field.

a. Sequence number
b. Control
c. Offset
d. Reserved
The correct **answer** is b

In , data are sent or processed at a very inefficient rate, such as 1 byte at a time.
a. Silly window syndrome
b. Sliding window syndrome

c. Nagle's syndrome
d. Delayed acknowledgment
The correct **answer** is a

The timer keeps track of the time between the sending of a segment and the receipt of an acknowledgment.

a. Time-waited
b. Retransmission
c. Persistence
d. Keep-alive
The correct **answer** is b

To prevent silly window syndrome created by a receiver that processes data at a very slow rate, can be used.

a. Clark's solution
b. Nagle's algorithm
c. Delayed acknowledgment
d. (a) or (c)
The correct **answer** is d

To prevent silly window syndrome created by a sender that sends data at a very slow rate, can be used.

a. Nagle's algorithm
b. Clark's solution
c. Delayed acknowledgment
d. (a) or (c)
The correct **answer** is a

An ACK number of 1000 always means that .

a. 999 bytes has been successfully received
b. 1000 bytes has been successfully received
c. 1001 bytes has been successfully received
d. None of the above
The correct **answer** is d

The timer prevents a long idle connection between two TCPs.

a. Keep-alive
b. Time-waited
c. Retransmission
d. Persistence
The correct **answer** is a

UDP and TCP are both _ layer protocols.

a. Physical
b. Data link
c. Network
d. Transport
The correct **answer** is d

Which of the following functions does UDP perform?

a. End-to-end reliable data delivery
b. Process-to-process communication
c. Host-to-host communication
d. All the above
The correct **answer** is b

UDP needs the address to deliver the user datagram to the correct application program.

a. Application
b. Internet
c. Physical

d. Port
The correct **answer** is d

Karn's algorithm is used in calculations by the timer.

a. a. Time-waited
b. Retransmission
c. Persistence
d. Keep-alive
The correct **answer** is b

Slow start is used in conjunction with as a TCP congestion control strategy.

a. Multiplicative increase
b. Multiplicative decrease
c. Additive increase
d. Additive decrease
The correct **answer** is c

The maximum length of time that traffic is generated at the peak rate is called the .

a. Effective bandwidth
b. Average data rate
c. Maximum burst size
d. Constant bit rate
The correct **answer** is c

For a system using TCP, the sender window size is determined by the window size.

a. Receiver
b. Sender
c. Congestion
d. (a) and (c)
The correct **answer** is d

Traffic features sudden data rate changes in very short periods of time.

a. Constant-bit-rate
b. Bursty
c. Variable-bit-rate
d. Peak-bit-rate
The correct **answer** is b

When the load is greater than the capacity, the delay .

a. Decreases
b. Goes to infinity
c. Increases linearly
d. Goes to zero
The correct **answer** is b

Is a closed-loop mechanism to alleviate congestion.

a. A choke point
b. Implicit signaling
c. Explicit signaling
d. All the above
The correct **answer** is d

The FECN informs the of congestion while the BECN informs the _ of congestion.

a. Sender; destination
b. Interface; sender
c. Destination; interface

d. Destination; sender
The correct **answer** is d

The is the maximum data rate of the traffic.

a. Average data rate
b. Maximum burst size
c. Effective bandwidth
d. Peak data rate
The correct **answer** is d

Is a flow characteristic in which the delay varies for packets belonging to the same flow.

a. Choke point
b. Additive increase
c. Jitter
d. Throughput
The correct **answer** is b

In _ queuing the first packet into the queue is the first packet out of the queue.

a. Priority
b. Weighted fair
c. FIFO
d. LIFO
The correct **answer** is c

In Frame Relay the transmission rate can never exceed .

a. Bc
b. The access rate
c. Be
d. CIR
The correct **answer** is b

Measures the variation in cell transmission time.

a. SCR
b. CVDT
c. PCR
d. MCR
The correct **answer** is b

If the SCR is 60,000, the PCR is 70,000, and the MCR is 55,000, what is the minimum number of cells that can be sent per second?

a. 60,000
b. 70,000
c. 55,000
d. 5000
The correct **answer** is c

The traffic shaping method gives a host credit for its idle time.

a. Leaky bucket
b. Traffic bucket
c. Token bucket
d. Bursty bucket
The correct **answer** is c

A flow-based QoS model designed for IP is called .

a. RSVP
b. Integrated Services
c. Differentiated Services

d. Multicast trees
The correct **answer** is b

A signaling protocol that helps IP create a flow is called .

a. RSVP
b. Integrated Services
c. Differentiated Services
d. Multicast trees
The correct **answer** is a

RSVP uses _ messages.

a. Path
b. Resv
c. Resource
d. (a) and (b)
The correct **answer** is d

In an RSVP reservation style called filter, the router creates a single reservation that can be shared by a set of flows.

a. Fixed
b. Shared explicit
c. Wild card
d. All the above
The correct **answer** is b

Differentiated Services was designed to handle the problem associated with Integrated Services.

a. Stability
b. Reservation
c. Scalability
d. All the above
The correct **answer** is c

A is a Differentiated Services traffic conditioner.

a. Meter
b. Marker
c. Shaper
The correct **answer** is c

What is the relationship between the access rate and the CIR?

a. CIR plus Be is equal to the access rate.
b. CIR is always equal to the access rate.
c. CIR is greater than the access rate.
d. CIR is less than the access rate.
The correct **answer** is d

If the maximum CTD is 10 µs and the minimum CTD is 1 µs, the _ is 9 µs.

a. CDV
b. CLR
c. CTD
d. CER
The correct **answer** is a

A Frame Relay network is committed to transfer bps without discarding any frames.

a. Be
b. Bc
c. CIR

d. (a) and (b)
The correct **answer** is b

The effective bandwidth is based on .

a. Average data rate
b. Peak data rate
c. Maximum burst size
d. All the above
The correct **answer** is d

The cell is the difference between the CTD maximum and minimum.

a. Delay variation
b. Error ratio
c. Loss ratio
d. Transfer delay
The correct **answer** is a

The cell is the ratio of lost cells to cells sent.

a. Delay variation
b. Error ratio
c. Loss ratio
d. Transfer delay
The correct **answer** is c

The service class is particularly suitable for applications with bursty data.

a. CBR
b. ABR
c. VBR
d. UBR
The correct **answer** is b

The service class is suitable for customers who need real-time video transmission without compression.

a. ABR
b. CBR
c. VBR
d. UBR
The correct **answer** is b

The is greater than the SCR.

a. MCR
b. CVDT
c. PCR
d. All the above
The correct **answer** is c

The is the fraction of the cells delivered in error.

a. CLR
b. CER
c. CTD
d. CDV
The correct **answer** is b

When added to Be, Bc should be less than the .

a. CIR
b. Committed burst size

c. Access rate
d. (a) and (b)
The correct **answer** is c

X

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SONO Group Team

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SONO Group Team
VUMobile

FINAL TERM EXAMINATION
Spring 2011

Question No: 1 (Marks: 1) - Please choose

The inversion of the level at 1 bit is called as _____

► NRZ-L

► **NRZ-I Page 73**

► RZ

Question No: 2 (Marks: 1) - Please choose

In selective-reject ARQ, only the specific damaged or lost frame is_____.

► **Retransmitted (Page 200)**

► Forwarded

► Selected

► Rejected

Question No: 3 (Marks: 1) - Please choose

YMODEM has _____Byte of data unit.

► **1024 Page 205**

► 256

► 128

► 512

Question No: 4 (Marks: 1) - Please choose

Which of the following sublyer, resolves the contention for the shared media

► **MAC (Page 219)**

► LLC

► Physical

Question No: 5 (Marks: 1) - Please choose

Like 10 Base 5, 10 Base 2 is a _____ topology LAN

► Ring

► Mesh

► Star

► **Bus (Page 227)**

Question No: 6 (Marks: 1) - Please choose

At the CRC generator, _____ added to the data unit after the division process

► **0s are (Page 176)**
► 1s are
► The polynomial
► The CRC remainder is

Question No: 7 (Marks: 1) - Please choose

Flow control is needed to prevent _____.

► Bit errors
► Overflow of the sender buffer
► **Overflow of the receiver buffer (Page 46)**
► Collision between sender and receiver

Question No: 8 (Marks: 1) - Please choose

In Y-MODEM Multiple files can be sent simultaneously

► **True (Page 205)**
► False

Question No: 9 (Marks: 1) - Please choose

In 56K Modems Max Uploading speed is _____ bytes and downloading speed is _____ byte.

- 40K, 56K
- **33.6K, 56K (Page 117)**
- 56K, 33.6K
- None of given

Question No: 10 (Marks: 1) - Please choose

If db is amplified then attenuation is ----------

- **Positive (Page 142)**
- Negative
- Zero
- None of the above

Question No: 11 (Marks: 1) - Please choose

Amplifiers are used to _____the signal to heat.

- **Amplify (Page 142)**
- Rectify
- Testify
- Nullify

Question No: 12 (Marks: 1) - Please choose

_____requires the maximum number of I/O ports.

- Bus
- Star
- **Mesh (Page 29)**

- Ring

Question No: 13 (Marks: 1) - Please choose

There are _____ basic categories of multiplexing.

- **3 (Page 148)**
- 4
- 2
- 5

Question No: 14 (Marks: 1) - Please choose

In _____ transmission, bits are transmitted over a single wire, one at a time.

- Asynchronous serial
- Synchronous serial
- **Parallel (Page 98)**
- Asynchronous & Synchronous serial

Question No: 15 (Marks: 1) - Please choose

In_____ transmission, bits are transmitted over their own wires

- Asynchronous serial
- Synchronous serial
- **Parallel**

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter4/mixed_quiz.html

- Asynchronous & Synchronous serial

Question No: 16 (Marks: 1) - Please choose

EIA 232 allows for a maximum bit rate of _____Kbps.

- 40
- 30
- **20 (Page 104)**
- 10

Question No: 17 (Marks: 1) - Please choose

In CRC the quotient at the sender _____

- Becomes the dividend at the receiver
- Becomes the divisor at the receiver
- **Is discarded**

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

- Is the remainder

Question No: 18 (Marks: 1) - Please choose

In line discipline after the data transmission, the sending system finishes with an _____ frame

- **EOT (Page 189)**
- EKT
- ENT
- ESP

FINALTERM EXAMINATION
Spring 2010

Question No: 1 (Marks: 1) - Please choose one
Encryption and encoding are the same terms.

► True
► **False (Page 52)**

Question No: 2 (Marks: 1) - Please choose one
Traditional modems are wide spread now to a data rate of _____.

► **56 Kbps (Page 115)**
► 72 Kbps
► 42 Kbps
► 96 Kbps

Question No: 3 (Marks: 1) - Please choose one
Bi phase encoding is a type of bipolar encoding in which we use two voltage levels.

► True
► **False (Page 73)**

Question No: 4 (Marks: 1) - Please choose one
The _____ layer changes bits into electromagnetic signals.

► **physical** http://www.ee.surrey.ac.uk/Projects/CAL/networks/Physical_Layer.htm
► data link
► transport
► none of given

Question No: 5 (Marks: 1) - Please choose one
Which is not an element of protocol?

► Semantics
► Timing
► **Communication service module (Page 19)**

Question No: 6 (Marks: 1) - Please choose one
A telephone network is an example of a _____ network.

► Packet-switched
► **Circuit-switched (Page 38)**

► Message-switched
► none of the given

Question No: 7 (Marks: 1) - Please choose one
The bit rate always equals the baud rate in which type of signal?

► **FSK (Page 86)**
► QAM
► 4-PSK
► PSK

Question No: 8 (Marks: 1) - Please choose one
Secondary hub in a tree must be a passive hub.

► True
► **False (Page 31)**

Question No: 9 (Marks: 1) - Please choose one
In case of uploading at the switching station, data is converted to digital signal using _____.

► TCP
► **PCM (Page 116)**
► ICP
► TDM

Question No: 10 (Marks: 1) - Please choose one
Category 5 UTP cable is used for data transmission of upto_____.

► **100 Mbps (Page 123)**
► 200 Mbps
► 250 Mbps
► 400 Mbps

Question No: 11 (Marks: 1) - Please choose one
Which of the following primarily uses guided media?

► Cellular telephone system
► **Local telephone system (Page 120)**
► Satellite communications
► Radio broadcasting

Question No: 12 (Marks: 1) - Please choose one
Ultra high-frequency waves always use _____ propagation.

► Ground
► Sky

► **Line of Sight (Page 136)**
► Space

Question No: 13 (Marks: 1) - Please choose one
Distortion occurs in a _____ signal.

► Rectified
► **Composite (Page 141)**
► Amplified
► none of the given

Question No: 14 (Marks: 1) - Please choose one
Which of the following are not used to measure the performance of TX Media.

► Throughput
► Propagation Speed
► Propagation Time
► **none of the given (Page 144)**

Question No: 15 (Marks: 1) - Please choose one
A portion of the path that carries TX b/w a given pair of devices is known as _____.

► Node
► Bridge
► **Channel (Page 147)**
► Gateway

Question No: 16 (Marks: 1) - Please choose one
_____ takes data from one high speed line and breaks it into portions.

► Multiplexing
► **Inverse multiplexing (Page 158)**
► Inverse subtraction
► Inverse addition

Question No: 17 (Marks: 1) - Please choose one
The _____ layer is the layer closest to the transmission medium.

► **physical**
► data link
► network
► transport
http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter2/multiple_choice_quiz.html

Question No: 18 (Marks: 1) - Please choose one
In primary-secondary communication _____ is always the initiator of a session

- ► **Primary (Page 189)**
- ► Secondary
- ► Sender
- ► Receiver

Question No: 19 (Marks: 1) - Please choose one
YMODEM has _____Byte of data unit.

- ► **1024 (Page 205)**
- ► 256
- ► 128
- ► 512

Question No: 20 (Marks: 1) - Please choose one
_____ coordinates the amount of data that can be sent before receiving acknowledgment

- ► **flow control (Page 186)**
- ► error control
- ► data control

Question No: 21 (Marks: 1) - Please choose one
If the ASCII character H is sent and the character I is received, what type of error is this?

- ► **Single-bit (Page 169)**
- ► Multiple-bit
- ► Burst
- ► Recoverable

Question No: 22 (Marks: 1) - Please choose one
In _____ ARQ, if a NAK is received, only the specific damaged or lost frame is retransmitted.

- ► Stop-and-wait
- ► Go-Back-N
- ► **Selective reject (Page 200)**
- ► Stop-and-wait & Go-back-N

Question No: 23 (Marks: 1) - Please choose one
Data link protocols can be divided into _____ sub-groups.

- ► **two (Page 202)**
- ► three
- ► four
- ► five

Question No: 24 (Marks: 1) - Please choose one
If odd parity is used for ASCII error detection, the number of 0s per 8-bit symbol is _____

- ► Even
- ► **Odd (Page 173)**
- ► Indeterminate
- ► 42

Question No: 25 (Marks: 1) - Please choose one
In Y-MODEM Multiple files can be sent simultaneously

- ► **True (Page 205)**
- ► False

Question No: 26 (Marks: 1) - Please choose one
The PDU has no flag fields, no CRC, and no station address

- ► **TRUE (Page 220)**
- ► FALSE

Question No: 27 (Marks: 1) - Please choose one
Check sum method is used for _____ layers.

- ► Physical
- ► Application
- ► Transport
- ► **Data link** http://www.cse.iitk.ac.in/users/dheeraj/cs425/lec09.html

Question No: 28 (Marks: 1) - Please choose one
Repeater is an amplifier, not a regenerator.

- ► True
- ► **False (Page 240)**

Question No: 29 (Marks: 1) - Please choose one
RARP stands for Reverse Address Resolution Protocol.

- ► **True (Page 244)**
- ► False

Question No: 30 (Marks: 1) - Please choose one
The BNC-T connector is a T-shaped device with _____ ports

- ► **Three (Page 228)**
- ► Two
- ► Four
- ► Five

FINALTERM EXAMINATION
Spring 2010

Question No: 1 (Marks: 1) - Please choose one
When data are transmitted from device A to device B, the header from A's layer 4 is read by B's _____ layer.

- ► physical
- ► **transport**
- ► application
- ► none of the given

http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter2/multiple_choice_quiz.html

Question No: 2 (Marks: 1) - Please choose one
A periodic signal completes one cycle in 0.001 s. What is the frequency?

- ► 1 Hz
- ► 100 Hz
- ► **1 KHz (Page 61)**
- ► 1 MHz

Question No: 3 (Marks: 1) - Please choose one
Zero crossing bandwidth is also called as equivalent noise bandwidth.

- ► True
- ► **False (Page 67)**

Question No: 4 (Marks: 1) - Please choose one
Amplitude in ASK is more resistive to EMI and Noise.

- ► True
- ► **False (Page 87)**

Question No: 5 (Marks: 1) - Please choose one
If FCC regulations are followed, the carrier frequencies of adjacent AM radio stations are _____ apart.

- ► 5 KHz
- ► **10 KHz (Page 95)**
- ► 200 KHz
- ► 530 KHz

Question No: 6 (Marks: 1) - Please choose one
There are _____ types of serial transmission:

► 1
► **2 (Page 99)**
► 3
► 4

Question No: 7 (Marks: 1) - Please choose one
Synchronous transmission has _____.

► a start bit
► a stop bit
► gaps between bytes
► **none of the given (page 99)**

Question No: 8 (Marks: 1) - Please choose one
Which of the following is an example of ITU-T modem standards?

► T-series
► X-series
► N-series
► **V-series (Page 114)**

Question No: 9 (Marks: 1) - Please choose one
The maximum data rate in the uploading direction is still _____.

► 26.6 Kbps
► **33.6 Kbps (Page 117)**
► 36.6 Kbps
► 46.6 Kbps

Question No: 10 (Marks: 1) - Please choose one
Category 5 UTP cable is used for data transmission of upto_____.

► **100 Mbps (Page 123)**
► 200 Mbps
► 250 Mbps
► 400 Mbps

Question No: 11 (Marks: 1) - Please choose one
All of popular Fiber optic connectors are _____ shaped.

► Conical
► **Barrel (Page 131)**
► Circular
► Rectangular

Question No: 12 (Marks: 1) - Please choose one
The VLF and LF bands use _____ propagation for communications.

- ► Ground
- ► Sky
- ► **Line of sight (Page 134)**
- ► Space

Question No: 13 (Marks: 1) - Please choose one
Multiplexing is the set of techniques that allows simultaneous TX of multiple signals across _____ data link

- ► **Single (Page 147)**
- ► Multi
- ► Single and Multi
- ► none of the given

Question No: 14 (Marks: 1) - Please choose one
Need for Addressing makes Asynchronous TDM inefficient for bit or byte _____.

- ► **Interleaving (Page 158)**
- ► Addition
- ► Subtraction
- ► None of the given

Question No: 15 (Marks: 1) - Please choose one
_____ takes data from one high speed line and breaks it into portions.

- ► Multiplexing
- ► **Inverse multiplexing (Page 158)**
- ► Inverse subtraction
- ► Inverse addition

Question No: 16 (Marks: 1) - Please choose one
A traditional telephone line has a bandwidth of _____.

- ► **3000Hz (Page 111)**
- ► 4000 Hz
- ► 2000 MHz
- ► 4000 MHz

Question No: 17 (Marks: 1) – Please choose one
If the ASCII character H is sent and the character I is received, what type of error is this?

- ► **Single-bit (Page 169)**
- ► Multiple-bit

► Burst
► Recoverable

Question No: 18 (Marks: 1) - Please choose one
At the CRC generator, _____ added to the data unit after the division process

► **0s are**
► 1s are
► The polynomial
► The CRC remainder is
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 19 (Marks: 1) - Please choose one
Error control in the data link layer is based on _____

► **automatic repeat request (Page 196)**
► automatic repeat acknowledgment
► automatic send acknowledgment

Question No: 20 (Marks: 1) - Please choose one
In line discipline the initiator first transmits a frame called an _____

► **Enquiry (Page 189)**
► Acknowledgment
► NAK
► Request

Question No: 21 (Marks: 1) - Please choose one
Primary device uses _____ to receive transmission from the secondary devices.

► ACK
► ENQ
► **POLL (Page 191)**

Question No: 22 (Marks: 1) - Please choose one
Flow control is needed to prevent _____.

► Bit errors
► Overflow of the sender buffer
► **Overflow of the receiver buffer (Page 46)**
► Collision between sender and receiver

Question No: 23 (Marks: 1) - Please choose one
For stop-and-wait ARQ, for N data packets sent, _____ acknowledgments are needed.

► **N**

► 2N
► N-1
► N+1

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter11/mixed_quiz.html

Question No: 24 (Marks: 1) - Please choose one
In Y-MODEM Multiple files can be sent simultaneously

► **True (Page 205)**
► False

Question No: 25 (Marks: 1) - Please choose one
HDLC is an acronym for _____.

► High-duplex line communication
► **High-level data link control (Page 210)**
► Half-duplex digital link combination
► Host double-level circuit

Question No: 26 (Marks: 1) - Please choose one
Token Bus has no commercial application in data communications

► **True (Page 232)**
► False

Question No: 27 (Marks: 1) - Please choose one
The BNC-T connector is a T-shaped device with _____ ports

► **Three (Page 228)**
► Two
► Four
► Five

Question No: 28 (Marks: 1) - Please choose one
Each station in the Token Ring regenerates the frame.

► **True (Page 234)**
► False

Question No: 29 (Marks: 1) - Please choose one
Repeater works on _____ layer.

► Data Link
► Physical
► **Network (224)**
► Application

Question No: 30 (Marks: 1) - Please choose one
Trunks are transmission media such as _____ that handle the telephone to the nearest end office.

- ► Satellite links
- ► **Twisted-pair & Fiber-optic**
- ► Twisted-pair
- ► Fiber-optic

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter8/mixed_quiz.html

Spring 2010
CS601- Data Communication

Question No: 1 (Marks: 1) - Please choose one
_____representation of links that connect nodes is called as physical topology.

- ► geometrical
- ► logical
- ► **physical (page 44)**

Question No: 2 (Marks: 1) – Please choose one
The internet model consists of _____ layers.

- ► three
- ► two
- ► **five**
- ► seven

http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter2/multiple_choice_quiz.html

Question No: 3 (Marks: 1) – Please choose one
Encryption and encoding are the same terms.

- ► True
- ► **False (Page 52)**

Question No: 4 (Marks: 1) - Please choose one
The amplitude of a digital signal depends upon the_____ to represent a bit.

- ► phase
- ► **voltage (Page 59)**
- ► wavelength

Question No: 5 (Marks: 1) - Please choose one
The inversion of the level at 1 bit is called as _____

- ► NRZ-L

► **NRZ-I (Page 73)**
► RZ

Question No: 6 (Marks: 1) - Please choose one
Modulation of an analog signal can be accomplished through changing the _____ of the carrier signal.

► amplitude
► frequency
► phase
► **all of the given**

Question No: 7 (Marks: 1) - Please choose one
If FCC regulations are followed, the carrier frequencies of adjacent AM radio stations are _____ apart.

► 5 KHz
► **10 KHz (Page 95)**
► 200 KHz
► 530 KHz

Question No: 8 (Marks: 1) - Please choose one
Category 5 UTP cable is used for data transmission of upto_____.

► **100 Mbps (Page 123)**
► 200 Mbps
► 250 Mbps
► 400 Mbps

Question No: 9 (Marks: 1) - Please choose one
The RG number gives us information about _____.

► Twisted pairs
► **Coaxial cables (Page 125)**
► Optical fibers
► all of the given

Question No: 10 (Marks: 1) - Please choose one
The inner core of an optical fiber is _____ in composition.

► **Glass plastic (Page 130)**
► Copper
► Bimetallic
► Liquid

Question No: 11 (Marks: 1) - Please choose one
All of popular Fiber optic connectors are _____ shaped.

- ► Conical
- ► **Barrel (Page 131)**
- ► Circular
- ► Rectangular

Question No: 12 (Marks: 1) - Please choose one
The VLF and LF bands use _____ propagation for communications.

- ► Ground
- ► Sky
- ► **Line of sight (Page 134)**
- ► Space

Question No: 13 (Marks: 1) - Please choose one
Multiplexing is the set of techniques that allows simultaneous TX of multiple signals across _____ data link

- ► **Single (Page 147)**
- ► Multi
- ► Single and Multi
- ► none of the given

Question No: 14 (Marks: 1) - Please choose one
A portion of the path that carries TX b/w a given pair of devices is known as _____.

- ► Node
- ► Bridge
- ► **Channel (Page 147)**
- ► Gateway

Question No: 15 (Marks: 1) - Please choose one
Which error detection method involves polynomials?

- ► Checksum
- ► Two-dimensional parity check
- ► **CRC (Page 177)**
- ► Simple parity check

Question No: 16 (Marks: 1) - Please choose one
If the ASCII character G is sent and the character D is received, what type of error is this?

- ► Single-bit
- ► Multiple-bit

► **Burst**
► Recoverable
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 17 (Marks: 1) - Please choose one
Which error detection method involves the use of parity bits?

► **Simple parity check & two dimensional parity check**
► CRC
► Two-dimensional parity check
► Simple parity check
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 18 (Marks: 1) - Please choose one
Which error detection method can detect a single-bit error?

► Simple parity check
► Two-dimensional parity check
► CRC
► **All of the given**
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 19 (Marks: 1) - Please choose one
The Hamming code is a method of _____

► Error detection
► **Error correction (Page 181)**
► Error encapsulation
► Error detection & Error encapsulation

Question No: 20 (Marks: 1) - Please choose one
Sliding window requires that data frames be transmitted _____

► **Sequentially (Page 199)**
► Frequently
► Synchronously
► Asynchronously

Question No: 21 (Marks: 1) - Please choose one
In selective-reject ARQ, only the specific damaged or lost frame is_____.

► **Retransmitted (Page 200)**
► Forwarded
► Selected
► Rejected

Question No: 22 (Marks: 1) - Please choose one
Which of the following sub layer, resolves the contention for the shared media

► **MAC (Page 219)**
► LLC
► Physical

Question No: 23 (Marks: 1) - Please choose one
The PDU has no flag fields, no CRC, and no station address

► **TRUE (Page 220)**
► FALSE

Question No: 24 (Marks: 1) - Please choose one
IEEE divides the base band category into _____ standards.

► **5 (Page 222)**
► 4
► 3
► 6

Question No: 25 (Marks: 1) - Please choose one
Like 10 Base 5, 10 Base 2 is a _____ topology LAN

► Ring
► Mesh
► Star
► **Bus (Page 227)**

Question No: 26 (Marks: 1) - Please choose one
Check sum method is used for _____ layers.

► Physical
► Application
► Transport
► **Data link** http://www.cse.iitk.ac.in/users/dheeraj/cs425/lec09.html

Question No: 27 (Marks: 1) - Please choose one
Repeater works on _____ layer.

► Data Link
► Physical
► **Network (Page 224)**
► Application

Question No: 28 (Marks: 1) - Please choose one
Trunks are transmission media such as _____ that handle the telephone to the nearest end office.

► Satellite links
► **Twisted-pair & Fiber-optic**
► Twisted-pair
► Fiber-optic
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter8/mixed_quiz.html

Question No: 29 (Marks: 1) - Please choose one
Which of the following _____ uses a series of filters to decompose multiplexed signal into its constituent signals?

► MUX
► **DEMUX (Page 150)**
► Switch
► Bridge

Question No: 30 (Marks: 1) - Please choose one
In Fast Ethernet, data rate can be increased by _____ collisions.

► Increasing
► **Decreasing (Page 230)**
► Keeping Constant
► None of the given

FINALTERM EXAMINATION
Spring 2009

Question No: 1 (Marks: 1) - Please choose one
Which is not an element of protocol
► semantics
► timing
► **communication service module (Page 19)**

Question No: 2 (Marks: 1) - Please choose one
Layers 5, 6 and 7 also called as network support layers.

► True
► **False (Page 42)**

Question No: 3 (Marks: 1) - Please choose one
Fourier transform tells us that any digital signal can be decomposed into infinite number of periodic signals

► **True**
► **False (Page 42)**

Question No: 4 (Marks: 1) - Please choose one
Time domain plot show changes in signal phase with respect to time.

► **True**
► **False (Page 63)**

Question No: 5 (Marks: 1) - Please choose one
Analog to digital conversion is also termed as modulating an analog signal.

► True
► **False (Page 70)**

Question No: 6 (Marks: 1) - Please choose one
DC component is also termed as Direct current component or a component with non-zero frequency.

► **False (Page 72)**
► **True**

Question No: 7 (Marks: 1) - Please choose one
Manchester is a type of _____encoding.

► **biphase (Page 75)**
► polar
► biphase & polar
► none of the given

Question No: 8 (Marks: 1) - Please choose one
The inversion of the level at 1 bit is called as _____

► NRZ-L
► **NRZ-I (Page 73)**
► RZ

Question No: 9 (Marks: 1) - Please choose one
PCM is the first process of PAM.

► True
► **False (Page 80)**

Question No: 10 (Marks: 1) - Please choose one
In 4PSK each phase change represents _____bits.

► 3
► 6
► **2 (Page 91)**
► 4

Question No: 11 (Marks: 1) - Please choose one
In RS 422 Balanced mode two lines carry _____ signals which are not identical to each other.

► **Same (Page 109)**
► different
► digital
► analog

Question No: 12 (Marks: 1) - Please choose one
A _____ converts an analog signal into a digital signal.

► **Demodulator (Page 110)**
► Modulator
► Digital-to-analog converter

Question No: 13 (Marks: 1) - Please choose one
Which of the following is an example of ITU-T modem standards:

► T-series
► X-series
► N-series
► **V-series (Page 114)**

Question No: 14 (Marks: 1) - Please choose one
The maximum data rate in the uploading direction is still _____.

► 26.6 Kbps
► **33.6 Kbps (Page 117)**
► 36.6 Kbps
► 46.6 Kbps

Question No: 15 (Marks: 1) - Please choose one
Which of the following primarily uses guided media

► Cellular telephone system
► **Local telephone system (Page 120)**
► Satellite communication
► Radio broadcasting

Question No: 16 (Marks: 1) - Please choose one
When a beam of light travels through media of two different densities, if the angle of incidence is greater than the critical angle, _____occurs.

► Reflection
► **Refraction (Page 127)**
► Incidence
► Criticism

Question No: 17 (Marks: 1) - Please choose one
When we talk about unguided media, usually we are referring to _____.

► Metallic wires
► Nonmetallic wires

► **The air (Page 132)**
► Water

Question No: 18 (Marks: 1) - Please choose one
Optical fibers are defined by the ratio of the _____ of their core to the diameter of their cladding.

► **Diameter (Page 130)**
► Radius
► Length
► Width

Question No: 19 (Marks: 1) - Please choose one
All of popular Fiber optic connectors are _____ shaped.

► Conical
► **Barrel (Page 131)**
► Circular
► Rectangular

Question No: 20 (Marks: 1) - Please choose one
Radio wave transmission utilizes _____ different types of propagation.

► Four
► Three
► Two
► **Five (Page 132)**

Question No: 21 (Marks: 1) - Please choose one
dB is _____ if a signal is amplified.

► **Negative**
► **Positive (Page 142)**
► Null
► Zero

Question No: 22 (Marks: 1) - Please choose one
A prism can deflect the light depending upon the angle of _____ and the frequency.

► **Deviation**
► **Incident (Page 151)**
► Refraction (Page 127)
► Reflection

Question No: 23 (Marks: 1) - Please choose one
Asynchronous TDM is efficient only when the size of the time slot is kept relatively _____

► **Large (Page 158)**
► Small
► Medium
► None of the given

Question No: 24 (Marks: 1) - Please choose one
The local loop has _____ cable that connects the subscriber telephone to the nearest end office.

► **Twisted-pair (Page 160)**
► Coaxial
► Fiber-optic
► None of the given

Question No: 25 (Marks: 1) - Please choose one
Data from a computer are _____; the local loop handles _____ signals.

► Analog; analog
► Analog; digital
► Digital; digital
► **Digital; analog**
http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter9/multiple_choice_quiz.html

Question No: 26 (Marks: 1) - Please choose one
Which error detection method uses ones complement arithmetic?

► Simple parity check
► Two-dimensional parity check
► CRC
► **Checksum (Page 179)**

Question No: 27 (Marks: 1) - Please choose one
Flow control is needed to prevent _____

► Bit errors
► Overflow of the sender buffer
► **Overflow of the receiver buffer (Page 46)**
► Collision between sender and receiver

Question No: 28 (Marks: 1) - Please choose one
_____ coordinates the amount of data that can be sent before receiving acknowledgment

► **flow control (Page 186)**
► error control
► data control

Question No: 29 (Marks: 1) - Please choose one
Error control is both error _____ and error _____

► **detection; correction (Page 186)**
► detection; deletion
► detection; avoidance
► detection; forwarding

Question No: 30 (Marks: 1) - Please choose one
Addressing is not needed in _____ configuration.

► **Point to Point (Page 190)**
► Multipoint
► Point to point and multipoint

Question No: 31 (Marks: 1) - Please choose one
In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence number?

► **0 to 63**
► 0 to 64
► 1 to 63
► 1 to 64
http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter11/multiple_choice_quiz.html

Question No: 32 (Marks: 1) - Please choose one
A timer is set when _____ is sent out.

► A data frame
► **An ACK (Page 197)**
► A NAK

Question No: 33 (Marks: 1) - Please choose one
Sliding window requires that data frames be transmitted _____

► **Sequentially (Page 199)**
► Frequently
► Synchronously
► Asynchronously

Question No: 34 (Marks: 1) - Please choose one
In Y-MODEM Multiple files can be sent simultaneously

► **True (Page 205)**
► False

Question No: 35 (Marks: 1) - Please choose one
BLAST stands for :

► **Blocked asynchronous transmission (Page 205)**
► Blocked synchronous transmission
► Barrel asynchronous transmission
► Below asynchronous transmission

Question No: 36 (Marks: 1) - Please choose one
HDLC is an acronym for _____.

► High-duplex line communication
► **High-level data link control (Page 210)**
► Half-duplex digital link combination
► Host double-level circuit
Question No: 37 (Marks: 1) – Please choose one

The HDLC _____ field defines the beginning and end of a frame.

► **Flag (Page 214)**
► Address
► Control
► FCS

Question No: 38 (Marks: 1) – Please choose one
_____ is the access protocol used by traditional Ethernet.

► **CSMA/CD (Page 222)**
► CSMA/CA
► Token Ring
► CSMA

Question No: 39 (Marks: 1) – Please choose one
Bridges can divide a large _____ into smaller segments

► **Network (Page 241)**
► Packet
► Frame
► Address

Question No: 40 (Marks: 1) – Please choose one
Like VRC, LRC and CRC, Checksum is also based on _____.

► **Redundancy (Page 179)**
► Decimal Division
► Encryption
► Encoding

FINALTERM EXAMINATION
Fall 2009

Question No: 1 (Marks: 1) – Please choose one
The information to be communicated in a data communications system is the

► Medium
► Protocol
► **Message (Page 7)**
► Transmission

Question No: 2 (Marks: 1) – Please choose one
A set of devices connected by communication links is called networking

► **True (Page 12)**
► False

Question No: 3 (Marks: 1) – Please choose one
Internet with small "i" specifies the world wide Network the actual internet.

- ► True
- ► **False (Page 39)**

Question No: 4 (Marks: 1) – Please choose one
Data chunk at data link layer is called_____

- ► frame
- ► **packet (Page 38)**
- ► datagram

Question No: 5 (Marks: 1) – Please choose one
Data synchronization is a function related with _____

- ► **session layer (Page 51)**
- ► presentation layer
- ► transport

Question No: 6 (Marks: 1) – Please choose one
When data are transmitted from device A to device B, the header from A's layer 4 is read by B's _____ layer.

- ► physical
- ► **transport**
- ► application
- ► none of the given

http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter2/multiple_choice_quiz.html

Question No: 7 (Marks: 1) – Please choose one
Data must be converted into_____ before transmission.

- ► **signal (Page 56 and 84)**
- ► wave
- ► electric pulse

Question No: 8 (Marks: 1) – Please choose one
PCM is the first process of PAM.

- ► True
- ► **False (Page 80)**

Question No: 9 (Marks: 1) – Please choose one
In _____ transmission, bits are transmitted over a single wire, one at a time.

► Asynchronous serial
► Synchronous serial
► **Parallel (Page 98)**
► Asynchronous & Synchronous serial

Question No: 10 (Marks: 1) – Please choose one
EIA 232 allows for a maximum bit rate of _____Kbps.

► 40
► 30
► **20 (Page 104)**
► 10

Question No: 11 (Marks: 1) – Please choose one
When a beam of light travels through media of two different densities, if the angle of incidence is greater than the critical angle, _____occurs.

► Reflection
► **Refraction (Page 127)**
► Incidence
► Criticism

Question No: 12 (Marks: 1) – Please choose one
A parabolic dish antenna is a(n) _____ antenna.

► Omnidirectional
► Bidirectional
► **Unidirectional (Page 138)**
► Horn

Question No: 13 (Marks: 1) – Please choose one
Ultra high-frequency waves always use _____ propagation.

► Ground
► Sky
► **Line of Sight (Page 136)**
► Space

Question No: 14 (Marks: 1) – Please choose one
Middle frequency waves having range 300 KHz-3 MHz always use _____ propagation.

► Ground
► Sky
► **Line of Sight**
► Space

Question No: 15 (Marks: 1) – Please choose one
DB is _____ if a signal is attenuated.

► **Negative (Page 142)**
► Positive
► Null
► Zero

Question No: 16 (Marks: 1) – Please choose one
Which multiplexing technique involves signals composed of light beams?

► FDM
► TDM
► **WDM (Page 150)**
► none of the given

Question No: 17 (Marks: 1) – Please choose one
Multiplexing has long been used as an essential tool in the _____.

► Electronic industry
► **Telephone industry (Page 159)**
► Space science
► VLAN

Question No: 18 (Marks: 1) – Please choose one
A telephone network is an example of a _____ network.

► Packet-switched
► **Circuit-switched (Page 38)**
► Message-switched
► none of the given

Question No: 19 (Marks: 1) – Please choose one
The local loop has _____ cable that connects the subscriber telephone to the nearest end office.

► **Twisted-pair (Page 160)**
► Coaxial
► Fiber-optic
► None of the given

Question No: 20 (Marks: 1) – Please choose one
Which error detection method involves polynomials?

► Checksum
► Two-dimensional parity check
► **CRC (Page 177)**
► Simple parity check

Question No: 21 (Marks: 1) – Please choose one
In CRC there is no error if the remainder at the receiver is _____

- ► Equal to the remainder at the sender
- ► **Zero (Page 176)**
- ► Nonzero
- ► The quotient at the sender

Question No: 22 (Marks: 1) – Please choose one
In CRC the quotient at the sender _____

- ► Becomes the dividend at the receiver
- ► Becomes the divisor at the receiver
- ► **is discarded**
- ► is the remainder

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 23 (Marks: 1) – Please choose one
Which error detection method can detect a bust error?

- ► The parity check
- ► Two-dimensional parity check
- ► CRC
- ► **Two-dimensional parity check and CRC**

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 24 (Marks: 1) – Please choose one
At the CRC checker, _____ means that the data unit is damaged

- ► A string of 0s
- ► A string of 1s
- ► A string of alternating 1s and 0s
- ► **A nonzero remainder**

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 25 (Marks: 1) – Please choose one
Error control is both error _____ and error _____

- ► **detection; correction (Page 186)**
- ► detection; deletion
- ► detection; avoidance
- ► detection; forwarding

Question No: 26 (Marks: 1) – Please choose one
In line discipline the initiator first transmits a frame called an _____

► **Enquiry (Page 189)**
► Acknowledgment
► NAK
► Request

Question No: 27 (Marks: 1) – Please choose one
In line discipline after the data transmission, the sending system finishes with an _____ frame

► **EOT (Page 189)**
► EKT
► ENT
► ESP

Question No: 28 (Marks: 1) – Please choose one
In primary-secondary communication _____ is always the initiator of a session

► **Primary (Page 189)**
► Secondary
► Sender
► Receiver

Question No: 29 (Marks: 1) – Please choose one
Primary device uses _____ to receive transmission from the secondary devices.

► ACK
► ENQ
► **POLL (Page 191)**

Question No: 30 (Marks: 1) – Please choose one
In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence number?

► **0 to 63**
► 0 to 64
► 1 to 63
► 1 to 64
http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter11/multiple_choice_quiz.html

Question No: 31 (Marks: 1) – Please choose one
Sliding window requires that data frames be transmitted _____

► **Sequentially (Page 199)**
► Frequently
► Synchronously
► Asynchronously

Question No: 32 (Marks: 1) – Please choose one

Data link protocols can be divided into _____ sub-groups.

► **two (Page 202)**
► three
► four
► five

Question No: 33 (Marks: 1) – Please choose one
XMODEM is a _____ protocol designed for telephone-line communication b/w PCs.

► **file transfer (Page 203)**
► hardware
► software
► application exchange

Question No: 34 (Marks: 1) – Please choose one
In Y-MODEM Multiple files can be sent simultaneously

► **True (Page 205)**
► False

Question No: 35 (Marks: 1) – Please choose one
Which of the following combines features of the other two?

► **ZMODEM (Page 205)**
► YMODEM
► XMODEM
► None of given

Question No: 36 (Marks: 1) – Please choose one
BLAST stands for :

► **Blocked asynchronous transmission (Page 205)**
► Blocked synchronous transmission
► Barrel asynchronous transmission
► Below asynchronous transmission

Question No: 37 (Marks: 1) – Please choose one
Which one of the following uses full duplex operation with sliding window flow control.

► **BLAST (Page 205)**
► XMODEM
► YMODEM
► ZMODEM

Question No: 38 (Marks: 1) – Please choose one
HDLC is an acronym for _____.

- ► High-duplex line communication
- ► **High-level data link control (Page 210)**
- ► Half-duplex digital link combination
- ► Host double-level circuit

Question No: 39 (Marks: 1) – Please choose one
The DSAP and SSAP are addresses used by _____ to identify the protocol stacks.

- ► **LLC (Page 220)**
- ► MAC
- ► Network

Question No: 40 (Marks: 1) – Please choose one
The PDU has no flag fields, no CRC, and no station address

- ► **TRUE (Page 220)**
- ► FALSE

Question No: 41 (Marks: 1) – Please choose one
Which of the following is a bus topology LAN that uses base band signaling and has a max? segment length of 500 meters

- ► **10 Base5 (Page 223)**
- ► 10 Base2
- ► 100 Base2
- ► 100 Base5

Question No: 42 (Marks: 1) – Please choose one
Token Bus has no commercial application in data communications

- ► **True (Page 232)**
- ► False

Question No: 43 (Marks: 1) – Please choose one
The BNC-T connector is a T-shaped device with _____ ports

- ► **Three (Page 228)**
- ► Two
- ► Four
- ► Five

Question No: 44 (Marks: 1) – Please choose one
_____ is the access protocol used by traditional Ethernet.

► **CSMA/CD (Page 222)**
► CSMA/CA
► Token Ring
► CSMA
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter13/mixed_quiz.html

Question No: 45 (Marks: 1) – Please choose one
When a collision is detected in a network using CSMA/CD. _____

► The frame is immediately resent
► **A jam signal is sent by the station**
► The backoff value is set to 0
► The backoff value is decremented by 1
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter13/mixed_quiz.html

Question No: 46 (Marks: 1) – Please choose one
Like VRC, LRC and CRC, Checksum is also based on _____.

► **Redundancy (Page 179)**
► Decimal Division
► Encryption
► Encoding

Question No: 47 (Marks: 1) – Please choose one
Check sum method is used for _____ layers.

► Physical
► Application
► Transport
► **Data link** http://www.cse.iitk.ac.in/users/dheeraj/cs425/lec09.html

Question No: 48 (Marks: 1) – Please choose one
Repeater works on _____ layer.

► Data Link
► Physical
► **Network (Page 224)**
► Application

Question No: 49 (Marks: 1) – Please choose one
When systems share a point to point link, then protocols used are called _____ protocols.

► **Direct (Page 21)**
► Indirect

► Monolithic
► structured

Question No: 50 (Marks: 1) – Please choose one
_____ requires more bandwidth.

► **FSK** http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter5/
► ASK
► PSK
► QAM

Fall 2009
CS601- Data Communication

Question No: 1 (Marks: 1) – Please choose one
An unauthorized user is a network _____ issue.

► Performance
► Reliability
► **Security (Page 15)**
► All of the given

Question No: 2 (Marks: 1) – Please choose one
Which is not an element of protocol?

► semantics
► timing
► **communication service module (Page 19)**

Question No: 3 (Marks: 1) – Please choose one
_____ is a multipoint topology.

► Ring
► Mesh
► Tree
► **Bus (Page 31)**

Question No: 4 (Marks: 1) – Please choose one
Unidirectional traffic movement is overcome by dual ring technology.

► **True (Page 33)**
► False

Question No: 5 (Marks: 1) – Please choose one
Physical layer define characteristics of interface between device and _____

► **transmission medium** http://en.wikipedia.org/wiki/OSI_model
► another device

► another peer physical layer at other side
► modem

Question No: 6 (Marks: 1) – Please choose one
_____ layer deals with syntax and semantics of information exchange.

► **presentation (Page 51)**
► session
► application
► physical

Question No: 7 (Marks: 1) – Please choose one
To allow access to network resources is the function of _____

► **application layer (Page 53)**
► physical layer
► network layer

Question No: 8 (Marks: 1) – Please choose one
Time domain plot show changes in signal phase with respect to time.

► True
► **False (Page 63)**

Question No: 9 (Marks: 1) – Please choose one
In 8QAM each signal shift or one baud represents _____.

► 4 bits
► 2 bits
► 5 bits
► **3 bits (Page 93)**

Question No: 10 (Marks: 1) – Please choose one
Modulation of an analog signal can be accomplished through changing the _____ of the carrier signal.

► amplitude
► frequency
► phase
► **all of the given (Page 62)**

Question No: 11 (Marks: 1) – Please choose one
EIA 449 provides much better functionality than EIA _____

► **232 (Page 110)**
► 223

► 262
► 222

Question No: 12 (Marks: 1) – Please choose one
Which of the following is an example of ITU-T modem standards:

► T-series
► X-series
► N-series
► **V-series (Page 114)**

Question No: 13 (Marks: 1) – Please choose one
Traditional modems are wide spread now to a data rate of _____.

► **56 Kbps (Page 115)**
► 72 Kbps
► 42 Kbps
► 96 Kbps

Question No: 14 (Marks: 1) – Please choose one
In case of uploading at the switching station, data is converted to digital signal using _____.

► TCP
► **PCM (Page 116)**
► ICP
► TDM

Question No: 15 (Marks: 1) – Please choose one
The RG number gives us information about _____.

► Twisted pairs
► **Coaxial cables (Page 125)**
► Optical fibers
► all of the given

Question No: 16 (Marks: 1) – Please choose one
The _____ is an association that sponsors the use of infrared waves.

► **IrDA** http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter7/mixed_quiz.html
► EIA
► **FCC**
► PUD

Question No: 17 (Marks: 1) – Please choose one
Optical fibers are defined by the ratio of the _____ of their core to the diameter of their cladding.

► **Diameter (Page 130)**
► Radius
► Length
► Width

Question No: 18 (Marks: 1) – Please choose one
The section of EM spectrum defined as Radio Communication is divided into _____ ranges called BANDS.

► **8 (Page 132)**
► 10
► 5
► 6

Question No: 19 (Marks: 1) – Please choose one
Radio wave transmission utilizes _____ different types of propagation.

► Four
► Three
► Two
► **Five (Page 132)**

Question No: 20 (Marks: 1) – Please choose one
The VLF and LF bands use _____ propagation for communications.

► Ground
► Sky
► **Line of sight (Page 136)**
► Space

Question No: 21 (Marks: 1) – Please choose one
In _____ propagation, low-frequency radio waves hug the earth.

► Ground
► Sky
► Line of Sight
► **Space (Page 133)**

Question No: 22 (Marks: 1) – Please choose one
dB is _____ if a signal is amplified.

► Negative
► **Positive (Page 142)**
► Null
► Zero

Question No: 23 (Marks: 1) – Please choose one
Distortion occurs in a _____ signal.

- ► Rectified
- ► **Composite (Page 141)**
- ► Amplified
- ► none of the given

Question No: 24 (Marks: 1) – Please choose one
There are _____ basic categories of multiplexing.

- ► **3 (Page 148)**
- ► 4
- ► 2
- ► 5

Question No: 25 (Marks: 1) – Please choose one
In bit _____, MUX adds extra bits to a device.

- ► **Stuffing (Page 156)**
- ► Adding
- ► Multiplication
- ► Exchanging

Question No: 26 (Marks: 1) – Please choose one
The local loop has _____ cable that connects the subscriber telephone to the nearest end office.

- ► **Twisted-pair (Page 160)**
- ► Coaxial
- ► Fiber-optic
- ► None of the given

Question No: 27 (Marks: 1) – Please choose one
FTTC stands for _____

- ► flexible to the curb
- ► **fiber to the curb (Page 166)**
- ► fiber to the cable
- ► fiber to the center

Question No: 28 (Marks: 1) – Please choose one
If the ASCII character G is sent and the character D is received, what type of error is this?

- ► Single-bit
- ► Multiple-bit
- ► **Burst**

► Recoverable
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 29 (Marks: 1) – Please choose one
Which error detection method can detect a single-bit error?

► Simple parity check
► Two-dimensional parity check
► CRC
► **All of the given**
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No: 30 (Marks: 1) – Please choose one
Flow control is needed to prevent _____

► Bit errors
► Overflow of the sender buffer
► **Overflow of the receiver buffer (Page 46)**
► Collision between sender and receiver

Question No: 31 (Marks: 1) – Please choose one
In data link layer, communication requires at least _____ devices working together

► 3
► **2 (Page 185)**
► 4
► 5

Question No: 32 (Marks: 1) – Please choose one
Data link control is composed of _____ important functions.

► 2
► **3 (Page 185)**
► 4
► 5

Question No: 33 (Marks: 1) – Please choose one
_____ coordinates the amount of data that can be sent before receiving acknowledgment

► **flow control (Page 186)**
► error control
► data control

Question No: 34 (Marks: 1) – Please choose one
Primary device uses _____ to receive transmission from the secondary devices.

► ACK
► ENQ
► **POLL (Page 191)**

Question No: 35 (Marks: 1) – Please choose one
In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence number?

► **0 to 63**
► 0 to 64
► 1 to 63
► 1 to 64
http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter11/multiple_choice_quiz.html

Question No: 36 (Marks: 1) – Please choose one
Data link protocols can be divided into _____ sub-groups.

► **two (Page 202)**
► three
► four
► five

Question No: 37 (Marks: 1) – Please choose one
XMODEM is a _____ protocol designed for telephone-line communication b/w PCs.

► **file transfer (Page 203)**
► hardware
► software
► application exchange

Question No: 38 (Marks: 1) – Please choose one
YMODEM uses ITU-T CRC-_____ for Error Checking

► **16 (Page 205)**
► 32
► 8
► 4

Question No: 39 (Marks: 1) – Please choose one
In Y-MODEM Multiple files can be sent simultaneously

► **True (Page 205)**
► False

Question No: 40 (Marks: 1) – Please choose one
HDLC is an acronym for _____.

► High-duplex line communication
► **High-level data link control (Page 210)**
► Half-duplex digital link combination
► Host double-level circuit

Question No: 41 (Marks: 1) - Please choose one
What is present in all HDLC control fields?

► **P/F bit (Page 215)**
► N(R)
► N(S)
► Code bits

Question No: 42 (Marks: 1) - Please choose one
Which of the following sublyer, resolves the contention for the shared media

► **MAC (Page 219)**
► LLC
► Physical

Question No: 43 (Marks: 1) - Please choose one
Ethernet LANs can support data rates between _____

► **1 and 100 Mbps (Page 223)**
► 1 and 200 Mbps
► 1 and 500 Mbps
► 1 and 100 Gbps

Question No: 44 (Marks: 1) - Please choose one
In FDDI, Token Passing is used as Access method.

► **True (Page 236)**
► False

Question No: 45 (Marks: 1) - Please choose one
Bridges can divide a large _____ into smaller segments

► **Network (Page 241)**
► Packet
► Frame
► Address

Question No: 46 (Marks: 1) - Please choose one
Like VRC, LRC and CRC, Checksum is also based on _____.

► **Redundancy (Page 179)**
► Decimal Division
► Encryption
► Encoding

Question No: 47 (Marks: 1) - Please choose one
Check sum method is used for _____ layers.

► Physical
► Application
► Transport
► **Data link** http://www.cse.iitk.ac.in/users/dheeraj/cs425/lec09.html

Question No: 48 (Marks: 1) - Please choose one
_____ Which of the following _____ uses a series of filters to decompose multiplexed signal into its constituent signals?

► Bridge
► MUX
► **DEMUX (Page 150)**
► Switch

Question No: 49 (Marks: 1) - Please choose one
_____ We need _____ to decompose a composite signal into its components.

► **Fourier transform (Page 64)**
► nyquist theorem
► shannon capacity

Question No: 50 (Marks: 1) - Please choose one
Data from computer is in _____ form and the local loop handles _____ signals.

► Analog; analog
► Analog; digital
► Digital; digital
► **Digital; analog**
http://highered.mcgraw-hill.com/sites/0072967757/student_view0/chapter9/multiple_choice_quiz.html

FINALTERM EXAMINATION
Spring 2009

Question No: 1 (Marks: 1) - Please choose one
There are how many factors on which the performance of a network depends?

► Three
► **Five (Page 14)**
► Four
► Two

Question No: 2 (Marks: 1) - Please choose one
_____requires the maximum number of I/O ports.

► Bus
► Star
► **Mesh (Page 29)**
► Ring

Question No: 3 (Marks: 1) - Please choose one
Headers are added at layers 1 and 7 of OSI model.

► True
► **False (Page 41)**

Question No: 4 (Marks: 1) - Please choose one
Trailer is only added at _____layer of OSI model.

► **data link (Page 41)**
► physical
► network
► application

Question No: 5 (Marks: 1) - Please choose one
A sine wave must be an analog signal.

► **True (Page 58)**
► False

Question No: 6 (Marks: 1) - Please choose one
If there is _____in voltage then the frequency is infinite.

► **instantaneous change (Page 61)**
► continuous change
► no change

Question No: 7 (Marks: 1) - Please choose one
The inversion of the level at 1 bit is called as _____

► NRZ-L
► **NRZ-I (Page 73)**

► RZ

Question No: 8 (Marks: 1) - Please choose one
The last process in PCM is _____ digital data into digital signal.

► **encoding (Page 82)**
► decoding
► modulating

Question No: 9 (Marks: 1) - Please choose one
Amplitude in ASK is more resistive to EMI and Noise.

► True
► **False (Page 87)**

Question No: 10 (Marks: 1) - Please choose one
If FCC regulations are followed, the carrier frequencies of adjacent AM radio stations are _____ apart.

► 5 KHz
► **10 KHz (Page 95)**
► 200 KHz
► 530 KHz

Question No: 11 (Marks: 1) - Please choose one
In _____ transmission, a start bit and a stop bit frame a character byte.

► **Asynchronous serial (Page 99)**
► Synchronous serial
► Parallel
► Asynchronous & Synchronous serial

Question No: 12 (Marks: 1) - Please choose one
Synchronous transmissions have _____.

► a start bit
► a stop bit
► gaps between bytes
► **none of the given (Page 99)**

Question No: 13 (Marks: 1) - Please choose one
Transmission media are usually categorized as _____

► Fixed or Unfixed
► **Guided or Unguided (Page 119)**
► Determinate or Indeterminate

► Metallic or Nonmetallic

Question No: 14 (Marks: 1) - Please choose one
The RG number gives us information about _____.

► Twisted pairs
► **Coaxial cables (Page 125)**
► Optical fibers
► all of the given

Question No: 15 (Marks: 1) - Please choose one
Radio wave and microwave frequencies range from _____.

► 3 to 300 KHz
► **300 KHz to 300GHz (Page 132)**
► 3 KHz to 300 GHz
► 3 KHz to 3000 GHz

Question No: 16 (Marks: 1) - Please choose one
All of popular Fiber optic connectors are _____ shaped.

► Conical
► **Barrel (Page 131)**
► Circular
► Rectangular

Question No: 17 (Marks: 1) - Please choose one
In _____ method a signal can be directed in a straight from Antenna to antenna.

► **Line of sight (Page 134)**
► Ground propagation
► Sky propagation
► Microwaves

Question No: 18 (Marks: 1) - Please choose one
Amplifiers are used to _____the signal to heat.

► **Amplify (Page 142)**
► Rectify
► Testify
► Nullify

Question No: 19 (Marks: 1) - Please choose one
There are _____ basic categories of multiplexing.

► **3 (Page 148)**

► 4
► 2
► 5

Question No: 20 (Marks: 1) - Please choose one
If a T-1 carries 8000 frames, the data rate is _____

► 2.544 Mbps
► **1.544 Mbps (Page 165)**
► 1.544 Kbps
► 1.544 Gbps

Question No: 21 (Marks: 1) - Please choose one
FTTC stands for _____

► flexible to the curb
► **fiber to the curb (Page 166)**
► fiber to the cable
► fiber to the center

Question No: 22 (Marks: 1) - Please choose one
Optical signals are multiplexed using _____ at switching office to create wider BW optical signals

► **WDM (Page 167)**
► FDM
► TDM
► MUX

Question No: 23 (Marks: 1) - Please choose one
Which error detection method consists of a parity bit for each unit as well as an entire data unit of parity bits?

► Simple parity check
► **Two-dimensional parity check**
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html
► CRC
► Checksum

Question No: 24 (Marks: 1) - Please choose one
If the ASCII character G is sent and the character D is received, what type of error is this?

► Single-bit
► Multiple-bit
► **Burst**

http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

► Recoverable

Question No: 25 (Marks: 1) - Please choose one
Flow control is needed to prevent _____

► Bit errors
► Overflow of the sender buffer
► **Overflow of the receiver buffer. (Page 46)**
► Collision between sender and receiver

Question No: 26 (Marks: 1) - Please choose one
In data link layer, communication requires at least _____ devices working together

► 3
► **2 (Page 185)**
► 4
► 5

Question No: 27 (Marks: 1) - Please choose one
Data link control is composed of _____ important functions.

► 2
► **3 (Page 185)**
► 4
► 5

Question No: 28 (Marks: 1) - Please choose one
Error control is both error _____ and error _____

► **detection; correction (Page 186)**
► detection; deletion
► detection; avoidance
► detection; forwarding

Question No: 29 (Marks: 1) - Please choose one
ENQ/ACK stands for_____

► **Enquiry/ Acknowledgment (Page 187)**
► Enque/ Acknowledgment
► Enquist/ Acknowledgment
► none of the given

Question No: 30 (Marks: 1) - Please choose one
In _____ ARQ, if a NAK is received, only the specific damaged or lost frame is retransmitted.

► Stop-and-wait
► Go-Back-N
► **Selective reject (Page 200)**
► Stop-and-wait & Go-back-N

Question No: 31 (Marks: 1) - Please choose one
Sliding window requires that data frames be transmitted _____

► **Sequentially (Page 199)**
► Frequently
► Synchronously
► Asynchronously

Question No: 32 (Marks: 1) - Please choose one
Which of the following combines features of the other two?

► **ZMODEM (Page 205)**
► YMODEM
► XMODEM
► None of given

Question No: 33 (Marks: 1) - Please choose one
BLAST stands for :

► **Blocked asynchronous transmission (Page 205)**
► Blocked synchronous transmission
► Barrel asynchronous transmission
► Below asynchronous transmission

Question No: 34 (Marks: 1) - Please choose one
HDLC is an acronym for _____.

► High-duplex line communication
► **High-level data link control (Page 210)**
► Half-duplex digital link combination
► Host double-level circuit

Question No: 35 (Marks: 1) – Please choose one
The HDLC _____ field defines the beginning and end of a frame.

► **Flag (Page 214)**
► Address
► Control
► FCS

Question No: 36 (Marks: 1) – Please choose one
The shortest frame in HDLC protocol is usually the _____ frame.

- ► Information
- ► **Supervisory (Page 213)**
- ► Management
- ► None of the given

Question No: 37 (Marks: 1) - Please choose one
The PDU has no flag fields, no CRC, and no station address

- ► **TRUE (Page 220)**
- ► FALSE

Question No: 38 (Marks: 1) - Please choose one
_____ is the access protocol used by traditional Ethernet.

- ► **CSMA/CD (Page 222)**
- ► CSMA/CA
- ► Token Ring
- ► CSMA

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Question No: 39 (Marks: 1) - Please choose one
Repeater is an amplifier, not a regenerator.

- ► True
- ► **False (Page 240)**

Question No: 40 (Marks: 1) - Please choose one
Bridges can divide a large _____ into smaller segments

- ► **Network (Page 241)**
- ► Packet
- ► Frame
- ► Address

CS601 Data Communication
Final Term Examination – Spring 2006

Question No. 1 Marks : 2
Which error detection method uses ones complement arithmetic?

- ➢ Simple parity check
- ➢ Two-dimensional parity check
- ➢ CRC
- ➢ **Checksum (Page 179)**

Question No. 2 Marks : 2

In a time-domain plot, the vertical axis is the measure of _____.

- **Amplitude (Page 59)**
- Frequency
- Phase
- Time

Question No. 4 Marks : 2

Which topology requires a multipoint connection?

- Mesh
- Star
- **Bus (Page 31)**
- Ring

Question No. 8 Marks : 2

A timer is set when _____ is (are) sent out.

- A data frame
- **An ACK (Page 197)**
- A NAK
- An ARQ

Question No. 9 Marks : 2

If the data unit is 111111, the divisor 1010, and the remainder 110, what is the dividend at the receiver?

- 111111011
- **111111110**

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- 1010110
- 110111111

FINALTERM EXAMINATION

FALL 2006

Question No: 1 (Marks: 1) - Please choose one

OSI standard is practically implemented in the form of internet.

►TRUE

►FALSE

Question No: 2 (Marks: 1) - Please choose one

TCP/IP application layers combine the functions of OSI Application, Session and Transport layers.

►TRUE (Page 55)

►FALSE

Question No: 3 (Marks: 1) - Please choose one
Unipolar use one voltage levels.
►**TRUE (Page 71)**
►FALSE

Question No: 4 (Marks: 1) - Please choose one
The material of core and cladding in fiber optic cable is same.
►TRUE
►**FALSE (Page 127)**

Question No: 5 (Marks: 1) - Please choose one
Burst error is easily corrected then bit error.
►TRUE
►FALSE

Question No: 6 (Marks: 1) - Please choose one
Set of rules governing communication is known as
►OSI model
►**Protocol (Page 08)**
►Medium

Question No: 7 (Marks: 1) - Please choose one
WDM(wave division multiplexing) deals with
► electric waves
►**light waves (Page 150)**
►both

Question No: 8 (Marks: 1) - Please choose one
A Null modem is a
►traditional modem
►**technique to connect two DTE (Page 106)**
►both

Question No: 9 (Marks: 1) - Please choose one
Router work on
►data link layer
►physical layer
►**network layer (Page 48)**

Question No: 10 (Marks: 1) - Please choose one
Poll/Select is a technique related with
►line control
►**line discipline (Page 187)**

►error control

Final Term Examination – Spring 2005

Question No. 1 Marks : 02
In cyclic redundancy checking, what is the CRC?

►the divisor
►the quotient
►the dividend
►**the remainder**
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No. 2 Marks : 02
In fiber optics the signal source is _____waves.

►**Light (Page 126)**
►Radio
►Very Low frequency
►Infrared

Question No. 3 Marks : 02
Each device has a dedicated point – to – point line configuration only with the two devices on either side of it.

►**Ring Topology (Page 33)**
►Star Topology
►Mesh Topology
►Tree Topology

Question No. 6 Marks : 02
Measures the relative strengths of two signals

►**Decibel (Page 141)**
►Bandwidth
►Wavelength
►Phase

Question No. 7 Marks : 02
Which multiplexing technique shifts each signal to a different carrier frequency?

►**FDM (Page 149)**

►Synchronous TDM
►Asynchronous TDM
►None of the above

Question No. 8 Marks : 02
The _____of a signal is the width of the frequency spectrum.

►Amplitude
►**Bandwidth (Page 66)**
►Bit interval
►Phase

Final Term Examination – Spring 2005

Question No. 1
In cyclic redundancy checking, what is the CRC? **Marks : 02**

►the divisor
►the quotient
►the dividend
►**the remainder**
http://highered.mcgraw-hill.com/sites/0072515848/student_view0/chapter10/mixed_quiz.html

Question No. 2
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Measures the relative strengths of two signals **Marks : 02**

► **Decibel (Page 141)**
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► Synchronous TDM
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Question No. 8
The _____ of a signal is the width of the frequency spectrum. Marks : 02

► Amplitude
► **Bandwidth (Page 66)**
► Bit interval
► Phase

CS601 FINALTERM important MCQs

Muhammad Faisal Dar
MIT 4th Semester
faisalgrw123@gmail.com

1) Which multiplexing technique transmits digital signals?

A) WDM
B) FDM
C) TDM
D) None of the above

2) Which multiplexing technique shifts each signal to a different carrier frequency?

A) TDM
B) FDM
C) Both (a) and (b)
D) None of the above

3) In TDM, for n signal sources of the same data rate, each frame contains _____ slots.

A) 0 to n
B) n
C) n + 1
D) n - 1

4) In TDM, the transmission rate of the multiplexed path is usually _____ the sum of the transmission rates of the signal sources.

A) 1 less than
B) Greater than
C) Less than
D) Equal to

5) DS-1 through DS-4 are _____ while T-1 through T-4 are _____.

A) Services; signals
B) Services; lines
C) Services; multiplexers
D) Multiplexers; signals

6) The sharing of a medium and its link by two or more devices is called _____.

A) Modulation
B) Encoding
C) Multiplexing
D) Line discipline

7) In AT&T's FDM hierarchy, the bandwidth of each group type can be found by multiplying _____ and adding extra bandwidth for guard bands.

A) The sampling rate by 4000 Hz
B) The number of voice channels by 4000 Hz
C) The number of voice channels by 8 bits/sample
D) The sampling rate by 8 bits/sample

8) Guard bands increase the bandwidth for _____.

A) TDM
B) FDM
C) Both (a) and (b)
D) None of the above

9) Which multiplexing technique transmits analog signals?

A) FDM
B) TDM
C) WDM
D) (a) and (c)

10) In a T-1 line, _____ interleaving occurs.

A) Bit
B) Byte
C) DS-0
D) Switch

11) Which multiplexing technique involves signals composed of light beams?

A) WDM
B) FDM
C) TDM
D) None of the above

12) The VLF and LF bands use _____ propagation for communications.

A) Space
B) Ground
C) Sky
D) Line of sight

13) Category 1 UTP cable is most often used in _____ networks.

A) Infrared
B) Telephone
C) Fast Ethernet
D) Traditional Ethernet

14) BNC connectors are used by _____ cables.

A) Fiber-optic
B) UTP
C) STP
D) Coaxial

15) Which of the following is not a guided medium?

A) Twisted-pair cable
B) Fiber-optic cable
C) Atmosphere
D) Coaxial cable

16) In an environment with many high-voltage devices, the best transmission medium would be _____.

A) Twisted-pair cable
B) Coaxial cable
C) The atmosphere
D) Optical fiber

17) _____ cable consists of an inner copper core and a second conducting outer sheath.

A) Coaxial
B) Twisted-pair
C) Fiber-optic
D) Shielded twisted-pair

18) In fiber optics, the signal source is _____ waves.

A) Very low-frequency
B) Light
C) Radio
D) Infrared

19) Smoke signals are an example of communication through _____.

A) A guided medium
B) A refractive medium
C) An unguided medium
D) A small or large medium

20) Which of the following primarily uses guided media?

A) Cellular telephone system
B) Satellite communications
C) Local telephone system
D) Radio broadcasting

21) What is the major factor that makes coaxial cable less susceptible to noise than twisted-pair cable?

A) Outer conductor
B) Inner conductor
C) Diameter of cable
D) Insulating material

22) The RG number gives us information about _____.

A) Optical fibers
B) Twisted pairs
C) Coaxial cables
D) All the above

23) Transmission media are usually categorized as _____.

A) Guided or unguided
B) Fixed or unfixed
C) Determinate or indeterminate
D) Metallic or nonmetallic

24) The _____ is an association that sponsors the use of infrared waves.

A) EIA
B) IrDA
C) FCC
D) PUD

25) In an optical fiber, the inner core is _____ the cladding.

A) Less dense than
B) Denser than
C) The same density as
D) Another name for

26) The inner core of an optical fiber is _____ in composition.

A) Copper
B) Bimetallic
C) Glass or plastic
D) Liquid

27) When a beam of light travels through media of two different densities, if the angle of incidence is greater than the critical angle, _____ occurs.

A) Refraction
B) Reflection
C) Incidence
D) Criticism

28) In _____ propagation, the beam of propagated light is almost horizontal, and the low-density core has a small diameter compared to the cores of the other propagation modes.

A) Single-mode
B) Multimode step-index
C) Multimode graded-index
D) Multimode single-index

29) _____ is the propagation method subject to the greatest distortion.

A) Single-mode
B) Multimode step-index
C) Multimode graded-index
D) Multimode single-index

30) In _____ propagation, the core is of varying densities.

A) Single-mode
B) Multimode step-index
C) Multimode graded-index
D) Multimode single-index

31) When we talk about unguided media, usually we are referring to _____.

A) Metallic wires
B) Nonmetallic wires
C) The air
D) None of the above

32) Transmission media are closest to the _____ layer.

A) Application
B) Physical
C) Network
D) Transport

33) Radio wave and microwave frequencies range from _____.

A) 3 to 300 KHz
B) 300 KHz to 3 GHz
C) 3 KHz to 300 GHz
D) 3 KHz to 3000 GHz

34) Optical fibers, unlike wire media, are highly resistant to _____.

A) High-frequency transmission
B) Low-frequency transmission
C) Refraction
D) Electromagnetic interference

35) In _____ propagation, low-frequency radio waves hug the earth.

A) Space
B) Ground
C) Sky
D) Line of sight

36) When the angle of incidence is _____ the critical angle, the light beam bends along the interface.

A) More than
B) Less than
C) Equal to
D) None of the above

37) A parabolic dish antenna is a(n) _____ antenna.

A) Omnidirectional
B) Bidirectional
C) Horn
D) Unidirectional

38) The telephone service handled between two LATAs is called _____.

A) An ILEC
B) An IXC
C) A CLEC
D) A POP

39) How many crosspoints are needed in a single-stage switch with 40 inputs and 50 outputs?

A) 2000
B) 90
C) 50
D) 40

40) The _____ is a device that connects n inputs to m outputs.

A) Crossbar
B) Crosspoint
C) Modem
D) RAM

41) The established telephone company that provided services in a LATA before 1966 and owns the cabling system is called _____.

A) A CLEC
B) An IXC
C) An ILEC
D) A POP

42) In a crossbar with 1000 crosspoints, approximately how many are in use at any time?

A) 100
B) 250
C) 500
D) 1000

43) The _____ of a TSI controls the order of delivery of slot values that are stored in RAM.

A) Crossbar
B) Crosspoint
C) Transceiver
D) Control unit

44) Which of the following is a time-division switch?

A) TSI
B) TDM bus
C) Crosspoint
D) (a) and (b)

45) In a time-division switch, a _____ governs the destination of a packet stored in RAM.

A) Control unit
B) TDM bus
C) Crosspoint
D) Crossbar

46) A telephone network is an example of a _____ network.

A) Circuit-switched
B) Packet-switched
C) Message-switched
D) None of the above

47) The local loop has _____ cable that connects the subscriber telephone to the nearest end office.

A) Coaxial
B) Fiber-optic
C) Twisted-pair
D) (b) and (c)

48) Trunks are transmission media such as _____ that handle the telephone communication between offices.

A) Twisted-pair cable
B) Fiber-optic cable
C) Satellite links
D) (b) and (c)

49) A new telephone company that provides services in a LATA after 1966 is called _____.

A) An ILEC
B) An IXC
C) A POP
D) A CLEC

50) If the end office receives two bursts of analog signals with frequencies of 697 and 1477 Hz, then the number _____ has been punched.

A) 1
B) 2
C) 3
D) 4

51) In _____ circuit switching, delivery of data is delayed because data must be stored and retrieved from RAM.

A) Time-division
B) Space-division
C) Virtual
D) Packet

52) Data from a computer are _____; the local loop handles _____ signals.

A) Digital; digital
B) Digital; analog
C) Analog; analog
D) Analog; digital

53) To create a _____, combine crossbar switches in stages.

A) TSI
B) Multistage switch
C) Crosspoint
D) Packet switch

54) A traditional telephone line has a bandwidth of _____.

A) 2000 Hz
B) 4000 Hz
C) 2000 MHz
D) 4000 MHz

55) Which of the following best describes a single-bit error?

A) A single bit is inverted.
B) A single bit is inverted per transmission.
C) A single bit is inverted per data unit.
D) Any of the above

56) Which error detection method uses ones complement arithmetic?

A) Simple parity check
B) Checksum
C) Two-dimensional parity check
D) CRC

57) Which error detection method consists of just one redundant bit per data unit?

A) Two-dimensional parity check
B) CRC
C) Simple parity check
D) Checksum

58) Which error detection method involves polynomials?

A) CRC
B) Simple parity check
C) Two-dimensional parity check
D) Checksum

59) If the ASCII character G is sent and the character D is received, what type of error is this?

A) Single-bit
B) Multiple-bit
C) Burst
D) Recoverable

60) If the ASCII character H is sent and the character I is received, what type of error is this?

A) Burst
B) Recoverable
C) Single-bit
D) Multiple-bit

61) In cyclic redundancy checking, what is the CRC?

A) The remainder
B) The divisor
C) The quotient
D) The dividend

62) Which error detection method involves the use of parity bits?

A) Simple parity check
B) Two-dimensional parity check
C) CRC
D) (a) and (b)

63) In cyclic redundancy checking, the divisor is _____ the CRC.

A) The same size as
B) 1 bit more than
C) 1 bit less than
D) 2 bits more than

64) If the data unit is 111111, the divisor 1010, and the remainder 110, what is the dividend at the receiver?

A) 111111011
B) 1010110
C) 111111110
D) 110111111

65) Which error detection method consists of a parity bit for each data unit as well as an entire data unit of parity bits?

A) Simple parity check
B) Checksum
C) Two-dimensional parity check
D) CRC

66) If the data unit is 111111 and the divisor 1010, what is the dividend at the transmitter?

A) 1111110000
B) 111111000
C) 111111
D) 1111111010

67) If odd parity is used for ASCII error detection, the number of 0s per 8-bit symbol is _____.

A) Indeterminate
B) 42
C) Even
D) Odd

68) In CRC there is no error if the remainder at the receiver is _____.

A) Nonzero
B) The quotient at the sender
C) Equal to the remainder at the sender
D) Zero

69) At the CRC generator, _____ added to the data unit after the division process.

A) 0s are
B) 1s are
C) The CRC remainder is
D) The polynomial is

70) The sum of the checksum and data at the receiver is _____ if there are no errors.

A) -0
B) +0
C) The complement of the checksum
D) The complement of the data

71) In CRC the quotient at the sender _____.

A) Becomes the dividend at the receiver
B) Becomes the divisor at the receiver
C) Is the remainder
D) Is discarded

72) The Hamming code is a method of _____.

A) Error detection
B) Error correction
C) Error encapsulation
D) (a) and (b)

73) At the CRC checker, _____ means that the data unit is damaged.

A) A string of alternating 1s and 0s
B) A nonzero remainder
C) A string of 0s
D) A string of 1s

74) Which error detection method can detect a single-bit error?

A) Simple parity check
B) Two-dimensional parity check
C) CRC
D) All the above

75) Which error detection method can detect a burst error?

A) The parity check
B) Two-dimensional parity check
C) CRC
D) (b) and (c)

76) At the CRC generator, _____ added to the data unit before the division process.

A) A polynomial is
B) A CRC remainder is
C) 0s are
D) 1s are

77) HDLC is an acronym for _____.

A) High-duplex line communication
B) Half-duplex digital link combination
C) High-level data link control
D) Host double-level circuit

78) Flow control is needed to prevent _____.

A) Overflow of the sender buffer
B) Overflow of the receiver buffer
C) Bit errors
D) Collision between sender and receiver

79) In a Go-Back-N ARQ, if the window size is 63, what is the range of sequence numbers?

A) 1 to 63
B) 1 to 64
C) 0 to 63
D) 0 to 64

80) For a sliding window of size n - 1 (n sequence numbers), there can be a maximum of _____ frames sent but unacknowledged

A) 0
B) n
C) n - 1
D) n + 1

81) When data and acknowledgment are sent on the same frame, this is called _____.

A) Backpacking
B) Piggypacking
C) Piggybacking
D) A good idea

82) In _____ ARQ, if a NAK is received, only the specific damaged or lost frame is retransmitted.

A) Go-Back-N
B) Stop-and-Wait
C) Selective Repeat
D) (a) and (b)

83) ARQ stands for _____.

A) Automatic repeat request
B) Automatic retransmission request
C) Acknowledge repeat request
D) Automatic repeat quantization

84) In Go-Back-N ARQ, if frames 4, 5, and 6 are received successfully, the receiver may send an ACK _____ to the sender.

A) 5
B) 6
C) 7
D) Any of the above

85) The shortest frame in HDLC protocol is usually the _____ frame.

A) Information
B) Management
C) Supervisory
D) None of the above

86) The address field of a frame in HDLC protocol contains the address of the _____ station.

A) Primary
B) Secondary
C) Tertiary
D) (a) or (b)

87) The HDLC _____ field defines the beginning and end of a frame.

A) Address
B) Control
C) Flag
D) FCS

88) A timer is set when _____ is (are) sent out.

A) An ACK
B) A NAK
C) A data frame
D) All the above

89) For Stop-and-Wait ARQ, for n data packets sent, _____ acknowledgments are needed.

A) n - 1
B) n + 1
C) n
D) 2n

90) What is present in all HDLC control fields?

A) N(R)
B) N(S)
C) Code bits
D) P/F bit

91) If an FDMA network has eight stations, the medium bandwidth has _____ bands.

A) 1
B) 2
C) 8
D) 16

92) In the _____ random-access method there is no collision.

A) CSMA/CD
B) CSMA/CA
C) ALOHA
D) Token-passing

93) In the 1-persistent approach, when a station finds an idle line, it _____.

A) Sends immediately
B) Waits 0.1 s before sending
C) Waits 1 s before sending
D) Waits a time equal to 1 - p before sending

94) _____ requires one primary station and one or more secondary stations.

A) Token ring
B) Reservation
C) Polling
D) CSMA

95) In the p-persistent approach, when a station finds an idle line, it _____.

A) Sends immediately
B) Waits 1 s before sending
C) Sends with probability 1 - p
D) Sends with probability p

96) A network using the CSMA random-access method with p equal to 0.25 will send _____ percent of the time after accessing an idle line.

A) 50
B) 75
C) 100
D) 25

97) The 1-persistent approach can be considered a special case of the p-persistent approach with p equal to _____.

A) 1.0
B) 2.0
C) 0.1
D) 0.5

98) _____ is a random-access protocol.

A) FDMA
B) CDMA
C) MA
D) Polling

99) In the reservation access method, if there are 10 stations on a network, then there are _____ reservation minislots in the reservation frame.

A) 10
B) 11
C) 5
D) 9

100) A Walsh table for 16 stations has a chip sequence of _____ chips.

A) 16
B) 32
C) 4
D) 8

101) _____ is a controlled-access protocol.

A) FDMA
B) TDMA
C) CSMA
D) Reservation

102) _____ is (are) a channelization protocol.

A) FDMA
B) TDMA
C) CDMA
D) All the above

103) _____ is the access protocol used by traditional Ethernet.

A) Token ring
B) CSMA
C) CSMA/CD
D) CSMA/CA

104) The most primitive random access method is _____.

A) Channelization
B) ALOHA
C) CSMA
D) Token passing

105) When a collision is detected in a network using CSMA/CD, _____.

A) The frame is immediately resent
B) The backoff value is decremented by 1
C) A jam signal is sent by the station
D) The backoff value is set to 0

106) In the _____ random-access method, stations do not sense the medium.

A) CSMA/CA
B) ALOHA
C) CSMA/CD
D) Ethernet

107) When a primary device asks a secondary device if it has data to send, this is called _____.

A) Backing off
B) Polling
C) Selecting
D) Reserving

108) If a TDMA network has eight stations, the medium bandwidth has _____ bands.

A) 1
B) 2
C) 8
D) 16

109) If a CDMA network has eight stations, the medium bandwidth has _____ bands.

A) 1
B) 2
C) 8
D) 16

110) If an Ethernet destination address is 08-07-06-05-44-33, then this is a _____ address.

A) Broadcast
B) Unicast
C) Multicast
D) Any of the above

111) What is the hexadecimal equivalent of the Ethernet address 01011010 00010001 01010101 00011000 10101010 00001111?

A) 5A-11-55-18-AA-0F
B) 5A-88-AA-18-55-F0
C) 5A-81-BA-81-AA-0F
D) 5A-18-5A-18-55-0F

112) Which of the following could not be an Ethernet source address?

A) 8A-7B-6C-DE-10-00
B) 8B-32-21-21-4D-34
C) EE-AA-C1-23-45-32
D) 46-56-21-1A-DE-F4

113) What is the efficiency of 4B/5B block encoding?

A) 60 percent
B) 80 percent
C) 20 percent
D) 40 percent

114) Which of the following could not be an Ethernet unicast destination?

A) 44-AA-C1-23-45-32
B) 46-56-21-1A-DE-F4
C) 48-32-21-21-4D-34
D) 43-7B-6C-DE-10-00

115) What is the efficiency of 8B/10B encoding?

A) 80 percent
B) 20 percent
C) 40 percent
D) 60 percent

116) A 10-station Ethernet LAN uses a _____-port bridge if the effective average data rate for each station is 2 Mbps.

A) 10
B) 1
C) 2
D) 5

117) A _____-station Ethernet LAN uses a four-port bridge. Each station has an effective average data rate of 1.25 Mbps.

A) 160
B) 80
C) 40
D) 32

118) An 80-station traditional Ethernet is divided into four collision domains. This means that a maximum of _____ stations contend for medium access at any one time.

A) 20
B) 76
C) 80
D) 320

119) If an Ethernet destination address is 07-01-02-03-04-05, then this is a _____ address.

A) Unicast
B) Broadcast
C) Multicast
D) Any of the above

120) What is the efficiency of a frame in half-duplex Gigabit Ethernet carrying 46 bytes of data?

A) 97 percent
B) 70 percent
C) 56 percent
D) 56 percent

121) Which of the following could not be an Ethernet multicast destination?

A) B7-7B-6C-DE-10-00
B) 7C-56-21-1A-DE-F4
C) 7B-AA-C1-23-45-32
D) 83-32-21-21-4D-34

122) Which of the following is a four-wire Gigabit Ethernet implementation?

A) 1000Base-SX
B) 1000Base-LX
C) 1000Base-T
D) 1000Base-CX

123) Forty stations are on an Ethernet LAN. A 10-port bridge segments the LAN. What is the effective average data rate of each station?

A) 1.0 Mbps
B) 2.5 Mbps
C) 2.0 Mbps
D) 5.0 Mbps