

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

A set of devices connected by communication links is called networking

- ▶ True
- ▶ False

Question No: 3 (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: 4 (Marks: 1) - Please choose one

Line configuration refers to the way two or more devices attach to a _____.

▶ Link

▶ Circuit

▶ Route

▶ Node

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

_____ is used to define the direction of the signal flow between the linked devices.

▶ transmission mode

▶ transmission method

▶ transmission impairments

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

Unidirectional traffic movement is overcome by dual ring technology.

▶ True

▶ False

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

Trailer is only added at _____ layer of OSI model.

▶ Data link

▶ Physical

▶ Network

▶ Application

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

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

▶ True

▶ False

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

If there is _____ in voltage then the frequency is infinite.

- ▶ instantaneous change
- ▶ continuous change
- ▶ no change

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

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

- ▶ signal amplitude
- ▶ frequency
- ▶ phase
- ▶ time

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

DC component is also termed as Direct current component or a component with non-zero frequency.

- ▶ False
- ▶ True

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

Quantization means measuring amplitudes of signal at equal intervals.

- ▶ True

- ▶ False

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

Amplitude in ASK is more resistive to EMI and Noise.

- ▶ True
- ▶ False

Question No: 16 (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: 17 (Marks: 1) - Please choose one

The bit rate always equals the baud rate in which type of signal?

- ▶ FSK
- ▶ QAM
- ▶ 4-PSK
- ▶ PSK

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

Asynchronous transmission is _____

- ▶ slow
- ▶ costly
- ▶ non-effective
- ▶ fast

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

A _____ converts an analog signal into a digital signal.

- ▶ Demodulator
- ▶ Modulator
- ▶ Digital-to-analog converter

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

If a station does not receive its signal up to a specified time that system issues an alarm to _____

- ▶ another node
- ▶ network manager
- ▶ switch
- ▶ network analyzer

Question No: 21 (Marks: 2)

How many types of Bipolar encoding scheme exist?

Answer:

Bipolar uses three voltage levels.

There are three types of bipolar encoding:

1. AMI (Alternate Mark Inversion)
2. B8ZS
3. HDB3

Question No: 22 (Marks: 2)

Give methods of Analog to Analog conversion.

Answer:

Analog Conversion:

Representation of analog information by an analog signal is Analog –to- analog conversion.

Question No: 23 (Marks: 3)

What is frequency spectrum?

Answer:

Frequency spectrum is the collection of all the components frequencies it contains.

Question No: 24 (Marks: 3)

How bandwidth of a Modem is measured?

Answer: Bandwidth of a modem is not measured in bytes, it is measured in bits.

Modem Speed –ASK (full-duplex)

Effective bandwidth of a telephone line is 2400 Hz, the maximum buad rate is also 2400.

Baud rate and bit rate are equal for ASK, so maximum bit rate is also 2400 bps.

Question No: 25 (Marks: 5)

What do you understand by the term DCE? Explain DCE. [5]

Answer:

Any device that transmits or receives signal through network is DCE.

It is any functional unit that transmits or receives data in the form of an analog or digital signal through a network.

At the physical layer DCE takes data generated by DTE, converts it to the signal.

Question No: 26 (Marks: 5)

Describe different types of NRZ encoding scheme?

Answer:

In NRZ encoding the level of signal is either positive or negative.

NRZ is classified into 2 types:

NRZ-L

NRZ-I

NRZ-L:

Level of the signal depends on the type of bit it represents.

Positive voltage usually means the bit is a 1 and a negative voltage usually means the bit is a 0.

NRZ-I:

The inversion of the level represents a 1 bit.

A bit 0 is represented by no change.

NRZ-I is superior to NRZ-L.

MIDTERM EXAMINATION SPRING 2010
CS601- Data Communication (Session - 1)

SOLVED BY : GULSHAN ALI (Hafizabad)

(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

A set of devices connected by communication links is called networking

- ▶ True
- ▶ False

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

_____ is a multipoint topology.

- ▶ Ring
- ▶ Mesh
- ▶ Tree
- ▶ Bus

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

_____ requires the maximum number of I/O ports.

- ▶ Bus

- ▶ Star
- ▶ Mesh
- ▶ Ring

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

Unidirectional traffic movement is overcome by dual ring technology.

- ▶ True
- ▶ False

Question No: 6 (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: 7 (Marks: 1) - Please choose one

Data chunk at data link layer is called _____.

- ▶ frame
- ▶ packet
- ▶ datagram

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

The _____ layer is the layer closest to the transmission medium.

- ▶ physical
- ▶ data link
- ▶ network
- ▶ transport

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

Data synchronization is a function related with _____

- ▶ session layer
- ▶ presentation layer
- ▶ transport

Question No: 10 (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: 11 (Marks: 1) - Please choose one

Encryption and encoding are the same terms.

- ▶ True
- ▶ False

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

TCP/IP model Application layer incorporate OSI Application and presentation

layers

▶ True

▶ False

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

A sine wave must be an analog signal.

▶ True

▶ False

Question No: 14 (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 0°

▶ none of the given

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

Manchester is a type of _____ encoding.

▶ biphase

▶ polar

▶ biphase & polar

▶ none of the given

Question No: 16 (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: 17 (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: 18 (Marks: 1) - Please choose one

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

- ▶ Asynchronous serial
- ▶ Synchronous serial
- ▶ Parallel
- ▶ Asynchronous & Synchronous serial

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

In RS 422 Balanced mode two lines carry _____ signals which are not identical to each other.

- ▶ same

- ▶ different
- ▶ digital
- ▶ analog

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

A _____ converts an analog signal into a digital signal.

- ▶ Demodulator
- ▶ Modulator
- ▶ Digital-to-analog converter

Question No: 21 (Marks: 2)

How does noise affect FSK?

Question No: 22 (Marks: 3)

Define Bit interval and Bit rate.

Question No: 23 (Marks: 5)

Write down the names of layers present in TCP/IP Protocol Suite?

Question No: 24 (Marks: 10)

The data points of a constellation are at (4,0) and (6,0). Draw the constellation. Show the amplitude and phase for each point. Is the modulation ASK, PSK, or QAM? How many bits per baud can one send with this constellation? [10]

SOLVED BY: GULSHAN ALI

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

Secondary hub in a tree must be a passive hub.

- ▶ True
- ▶ False

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

In mesh topology, if there are five nodes then there will be _____ links.

- ▶ 5
- ▶ 10
- ▶ 15
- ▶ 20

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

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

- ▶ True

▶ False

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

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

▶ True

▶ False

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

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

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

▶ True

▶ False

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

Frequency band in which 99% of the total power resides is called _____

▶ power bandwidth

▶ half power bandwidth

- ▶ 3dB bandwidth
- ▶ F.M.

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

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

- ▶ NRZ-L
- ▶ NRZ-I
- ▶ RZ

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

Which of the encoding schemes have bandwidth problems?

- ▶ Differential Manchester
- ▶ AMI
- ▶ RZ

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

Bi phase and bipolar are same terms.

- ▶ True
- ▶ False

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

Quantization means measuring amplitudes of signal at equal intervals.

- ▶ True
- ▶ False

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

The last process in PCM is _____ digital data into digital signal.

- ▶ encoding
- ▶ decoding
- ▶ modulating

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

Which modulation technique involves tribits, eight different phase shifts, and one amplitude?

- ▶ FSK
- ▶ 8-PSK
- ▶ ASK
- ▶ 4-PSK

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

Asynchronous transmission is _____

- ▶ slow
- ▶ costly
- ▶ non-effective
- ▶ fast

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

Synchronous transmission have _____.

- ▶ a start bit

- ▶ a stop bit
- ▶ gaps between bytes
- ▶ none of the given

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

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

- ▶ DTE; DCE
- ▶ DCE; DTE
- ▶ DCE; node
- ▶ DTE; application

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

A human brain is considered as a _____

- ▶ driver
- ▶ machine
- ▶ DTE
- ▶ DCE

Question No: 19 (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: 20 (Marks: 1) - Please choose one

A _____ converts an analog signal into a digital signal.

- ▶ Demodulator
- ▶ Modulator
- ▶ Digital-to-analog converter

Question No: 21 (Marks: 2)

What is simplex mode of transmission?

Question No: 22 (Marks: 3)

What is HDB3.

Question No: 23 (Marks: 5)

Write a note on Full duplex mode of transmission.

Question No: 24 (Marks: 10)

In your view which one is best either B8ZS or HDB3 and why? Write down salient features of both? What is meant by polarity of 1 since the last substitution?

MIDTERM EXAMINATION
Spring 2009
CS601- Data Communication (Session - 1)

Solved By: GULSHAN ALI
Hafizabad

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

In RS 422 Balanced mode two lines carry _____ signals which are not identical to each other.

- ▶ same
- ▶ different
- ▶ digital
- ▶ analog

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

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

- ▶ DTE; DCE
- ▶ DCE; DTE
- ▶ DCE; node
- ▶ DTE; application

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

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

- ▶ Asynchronous serial
- ▶ Synchronous serial
- ▶ Parallel
- ▶ Asynchronous & Synchronous serial

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

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

- ▶ Asynchronous serial
- ▶ Synchronous serial
- ▶ Parallel
- ▶ Asynchronous & Synchronous serial

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

Asynchronous transmission is _____

- ▶ slow
- ▶ costly
- ▶ non-effective
- ▶ fast

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

In _____ transmission the timing of the signal is unimportant.

- ▶ Asynchronous
- ▶ Synchronous
- ▶ Polar
- ▶ Bi-polar

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

In 8QAM each signal shift or one baud represents _____.

- ▶ 4 bits
- ▶ 2 bits
- ▶ 5 bits
- ▶ 3 bits

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

PCM is the first process of PAM.

- ▶ True
- ▶ False

Question No: 9 (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: 10 (Marks: 1) - Please choose one

The amplitude of a digital signal depends upon the _____ to represent a bit.

- ▶ phase
- ▶ voltage
- ▶ wavelength

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

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

- ▶ True
- ▶ False

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

OSI model was developed prior to TCP/IP model.

- ▶ True
- ▶ False

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

The _____ layer is the layer closest to the transmission medium.

- ▶ physical
- ▶ data link
- ▶ network
- ▶ transport

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

Data chunk at data link layer is called _____

- frame
- packet
- datagram

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

The internet model consists of _____ layers.

- three
- two
- five
- seven

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

_____ is a multipoint topology.

- Ring
- Mesh
- Tree
- Bus

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

In mesh topology, if there are five nodes then there will be _____ links.

- 5
- 10
- 15
- 20

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

Non proprietary standard is also termed as de facto standard.

- True
- False

Question No: 20 (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: 21 (Marks: 2)

What is purpose of distributed processing?

Question No: 22 (Marks: 3)

What is HDB3.

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)

Differentiate between the following terms.

a) Frequency spectrum and bandwidth.

(b) Bandwidth and throughput.

(c) Bit interval and bit rate.

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