

MIDTERM EXAMINATION
Spring 2009

Question No: 21 (Marks: 2)

What is simplex mode of transmission?

Answer:

Communication is Unidirectional

Only one of the two stations can transmit

Other can only receive (P34)

Question No: 22 (Marks: 3)

What is HDB3.

Answer:

Alteration of AMI adopted in Europe and Japan

Introduces changes into AMI, every time four consecutive zeros are encountered instead of waiting for eight zeros as in the case of B8ZS. (P78)



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Question No: 23 (Marks: 5)

Write a note on Full duplex mode of transmission.

Answer:

Both stations can transmit and receive simultaneously

Two way street with traffic flowing in both directions at the same time

Signals traveling in either direction share the capacity of the link

The sharing can take place in two ways:

Either the link must contain two physically separate transmission paths:

- ❖ One for sending and
- ❖ One for receiving

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?



Question No: 21 (Marks: 2)

What is purpose of distributed processing?

Answer:

Multiple computers working on a problem can solve a problem faster than a computer working alone. (P13)

Question No: 22 (Marks: 3)

What is HDB3?

Answer:

Alteration of AMI adopted in Europe and Japan

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Question No: 23 (Marks: 5)

Differentiate between the following terms. [10 marks]

- (a) Syntax and Semantics of protocol.

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Answer:

Syntax:

Communication between peer entities (P21)

Semantics:

Client/server (P21)

(b) **Network management and exchange management.**

Answer:

Exchange Management

Error Detection and Correction (P17)

Network management (P17)

Security

(c) **Monolithic and structured.**

Answer: (P21)

Monolithic

Communications is a complex task

To complex for single unit

Structured

Structured design breaks down problem into smaller units

Layered structure

Question No: 24 (Marks: 10)

Differentiate between the following terms.

Frequency spectrum and bandwidth.

Answer: (P66)

Frequency Spectrum / Bandwidth

Frequency Spectrum: of a signal is the collection of all the component frequencies it contains

It is shown using a Frequency domain graph

Bandwidth: of a signal is the width of the frequency spectrum

In other words, Bandwidth refers to the range of the component frequencies and Frequency Spectrum refers to the elements within that range

(b) **Bandwidth and throughput.**

Answer: (P144)

Measurement of how fast data can pass through a point. In other words, if we consider any point in the TX Medium as a wall through which bits pass, then throughput is the number of bits that can pass this wall in second

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(c) Bit interval and bit rate.

Answer: (P68)

Bit Interval and Bit Rate

Most digital signals are aperiodic and thus Period and Frequency are not the appropriate terms to describe them

Bit Interval (seconds)

Time required sending one single bit

Bit Rate (bps)

Number of bits sent per second

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