
Department of Electrical Engineering

Assignment 2

Date: 09/05/2020

Course Details

Course Title: Data and computer
Instructor: enr.zulqarnain

Module: _____
Total Marks: _____

Student Details

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Q1	Draw the waveform for transmitting binary bit stream 101101100 for 1. Polar NRZ 2. Bipolar
Q2	Draw the waveform for transmitting binary bit stream 10110000000001 1. B8ZS 2. HDB3
Q3	Compare and Contrast flow control and error control
Q4	What is the difference between a hard handoff and a soft handoff?

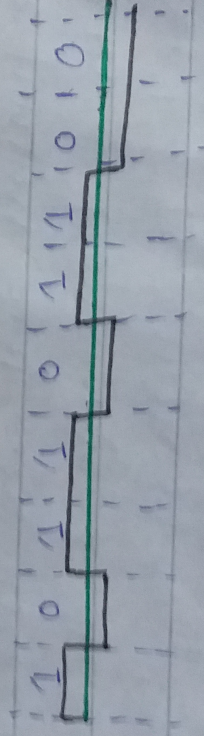
Name: Khalid Khan Page: 1 ID: 13290

Q1 Draw the waveform for transmitting binary bit stream 10110100 for

Q Polar NRZ (i) Bipolar

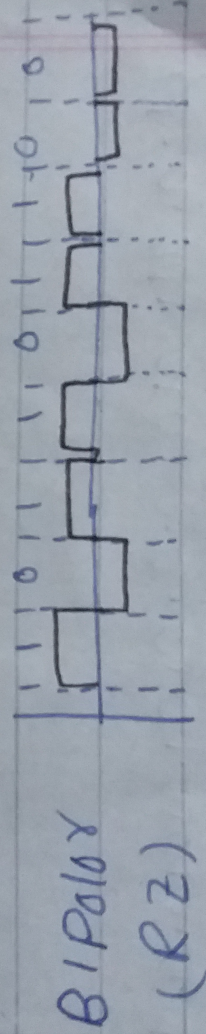
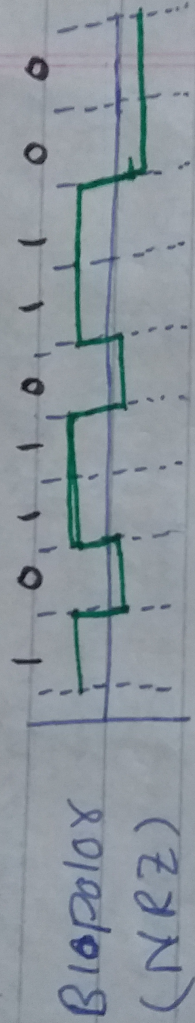
Ans \Rightarrow Polar NRZ \Rightarrow

In this type of Polar Signaling a high in data is represented by a positive pulse, while a low in data is represented by negative pulse.



\Rightarrow wave form of polar NRZ

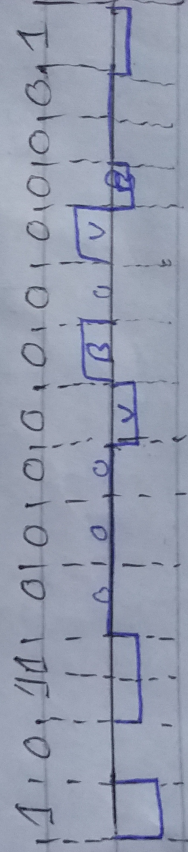
- (ii) Bipolar \rightarrow Bipolar signal is a signal that may assume either of two polarities neither of which is zero. A bipolar signal may have a two state non-return-to-zero (NRZ) or a three state return-to-zero (RZ).



Q2 Draw the wave form for transmitting binary stream 1011000000001

- ① B8ZS ② HDB3

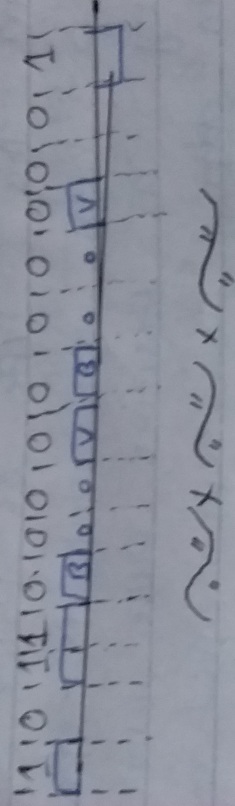
Ans → Binary 8 zero substitution works in a similar way to AMI by changing Poles for each binary '1' Moreover when it found 8 consecutive 1's replace them by 000V000V
Here V means violation & B means Balancing



wave form of **B8ZS**

iii) HDDB3 => 101100000000001

=> wave forms of HDDB3



Q3 Compare of Control Flow Control
& error Control

Flow & error control use two different mechanisms that are used for accurate data transmission. If the sender speed is high & the receiver speed is lower, there is a speed mismatch, then the flow of data sent should be controlled. This technique is known as flow control.

During the transmission, errors can occur. If the receiver identifies an error, it should inform the sender that there is an error in the data. So the sender that retransmits the data. This technique is known as error control.

Q. Ans Soft hand off \Rightarrow

Entails two connections to different base stations. This ensures that no break ensues during the hand off. Naturally, it is more costly than a hard handoff.

\Rightarrow Durixing hand off

\Rightarrow First connection will be broken then new connection will be established.

\Rightarrow Hard hand off \Rightarrow Characterized by an actual break in the

connection while switching from

one cell or base station to another. The switch takes place so quickly

that it can hardly be observed.

needed to serve a system designed

for hard handoff. It is the

more affordable option.