



American International University- Bangladesh (AIUB)
Faculty of Engineering

Course Name: Data Communication
Semester: Fall 2023
Total Marks: 30
Faculty Name: Mr. Abrar Fahim Liaf

Course Code: COE 3201
Term: Mid
Submission Date: 02-11-2023
Assignment: 01/OBE

Course Outcome Mapping with Questions

Item	COs	POIs	K	P	A	Marks	Obtained Marks
Q1	CO3	P.c.3.C5	K5	P1, P2, P6		15	
Q2	CO3	P.c.3.C5	K5	P1, P2, P6		15	
Total:						30	

Student Information:

Student Name: MD. SHAHRIAR PARVEZ SHAMIM	Student ID: 21-44998-2
Section: I	Department: CSE

Marking Rubrics (to be filled by Faculty):

	Excellent [15]	Proficient [12]	Good [10]	Acceptable [7]	Unacceptable [5]	No Response [0]	Secured Marks
Problem	Detailed unique response explaining the concept properly and answer is correct with all works clearly shown.	Response with no apparent errors and the answer is correct, but explanation is not adequate/unique.	Response shows understanding of the problem, but the final answer may not be correct	Partial problem is solved; response indicates part of the problem was not understood clearly.	Unable to clarify the understanding of the problem and method of the problem solving was not correct	No Response/(Copied/identical submissions will be graded as 0 for all parties concerned)	
1							
2							
Comment						Total marks (30)	

1. *Assess* the effect of communication networks on environment and obtain the 8-bit data stream for each case depicted in Figure 1.

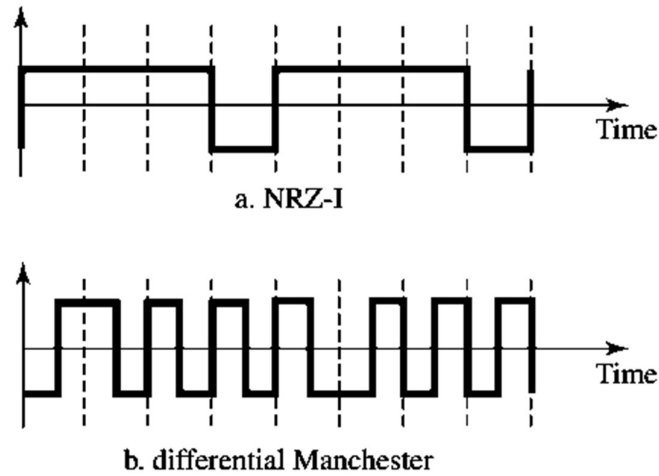


Figure 1: Graph for problem 1.

2. *Evaluate* the data streams **00110011** and **01010101** by graphically representing them using the following schemes below. Assume that the last signal level has been positive.

- **NRZ-L**
- **Manchester.**
- **2B1Q**

Answer to the question no. 1.

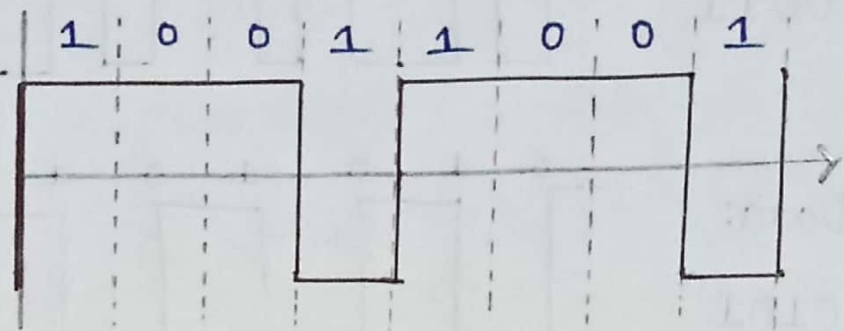


Figure: NRZ-I

Data stream is : 10011001

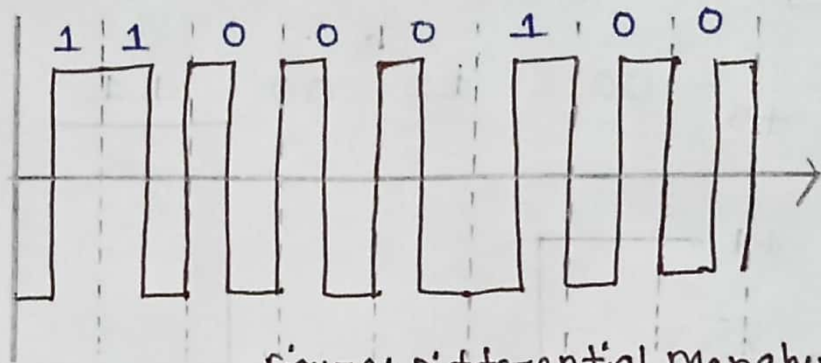


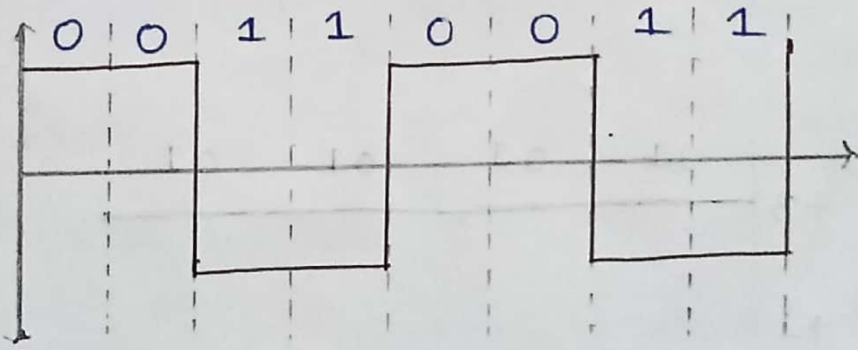
Figure: Differential Manchester

Data stream is : 11000100

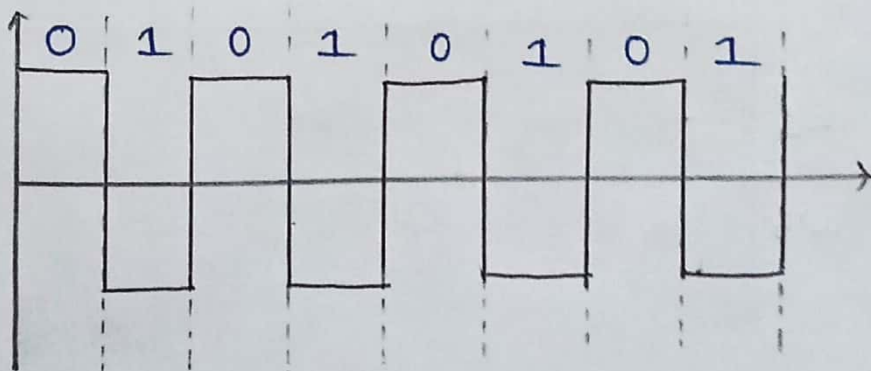
Answer to the question no. 2.

NRZ-L

Data: 00110011 \Rightarrow



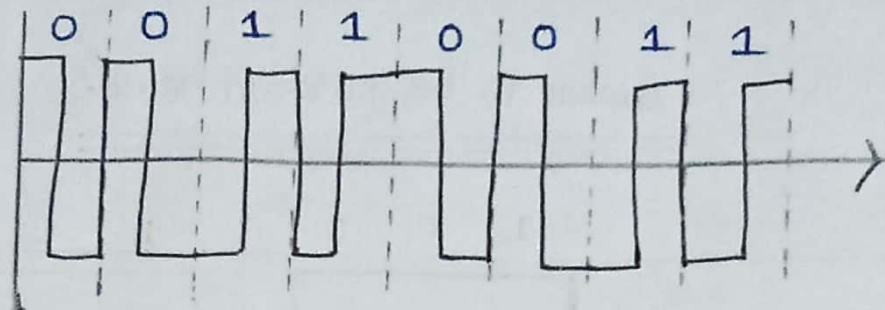
Data: 01010101 \Rightarrow



Manchester

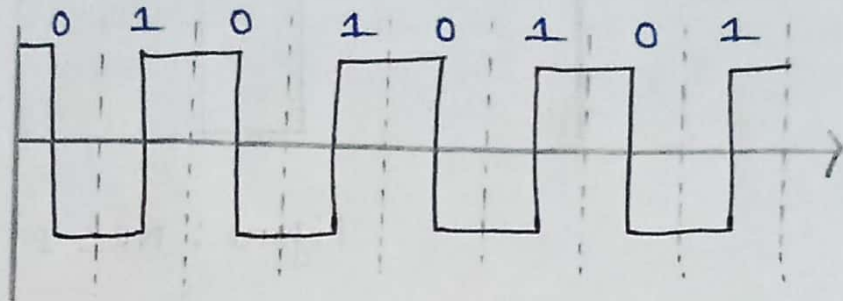
Data:

00110011

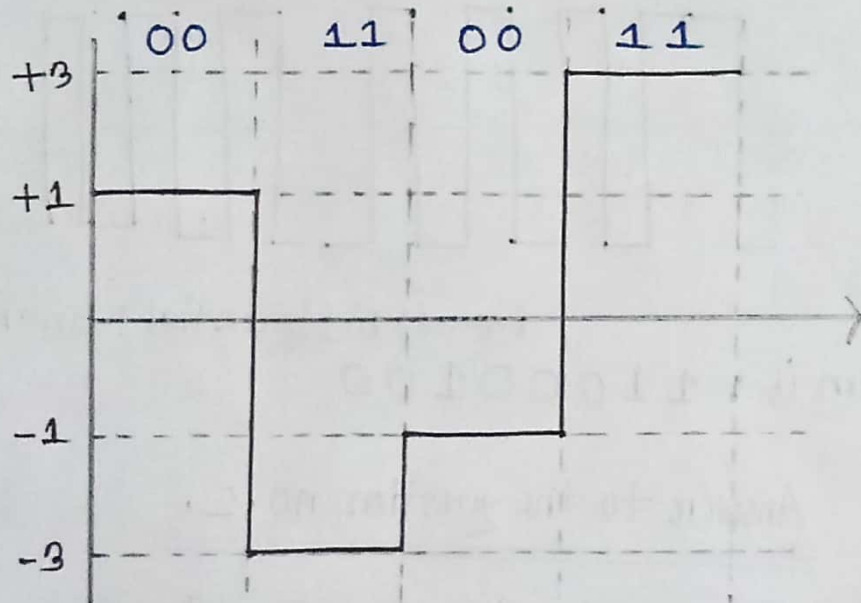


Data:

01010101

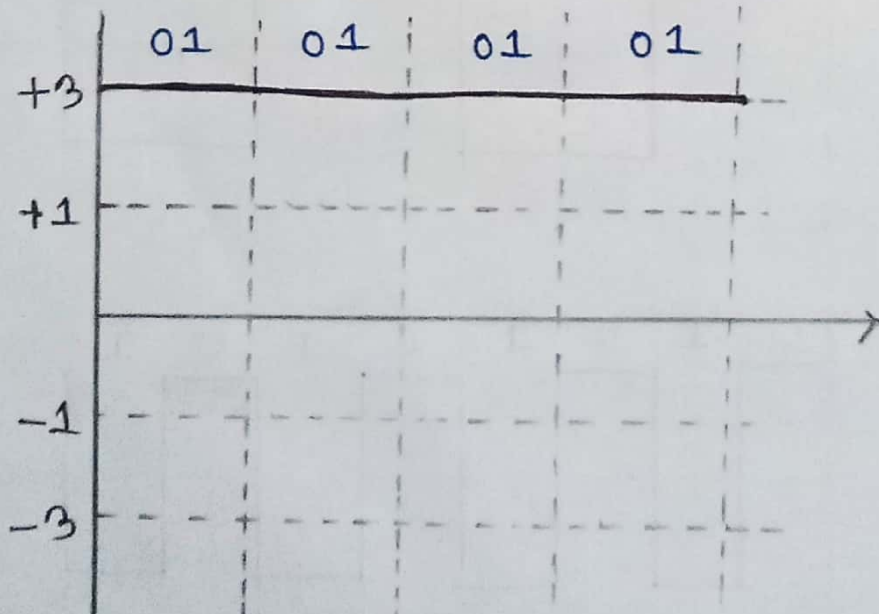


2B1Q



Data:

00110011



Data:

01010101