American International University- Bangladesh (AIUB)
Faculty of Engineering

Course Name:	Data Communication	**Course Code:**	COE 3201
Semester:	Spring 2024	**Term:**	Mid
Total Marks:	30	**Submission Date:**	**07-03-2024**
		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:	**Kowshik Halder**	**Student ID:**	**21-45408-3**
Section:	**I**	**Department:**	**CSE**

Marking Rubrics (to be filled by Faculty):

Problem	Excellent [15]	Proficient [12]	Good [10]	Acceptable [7]	Unacceptable [5]	No Response [0]	Secured Marks
	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.

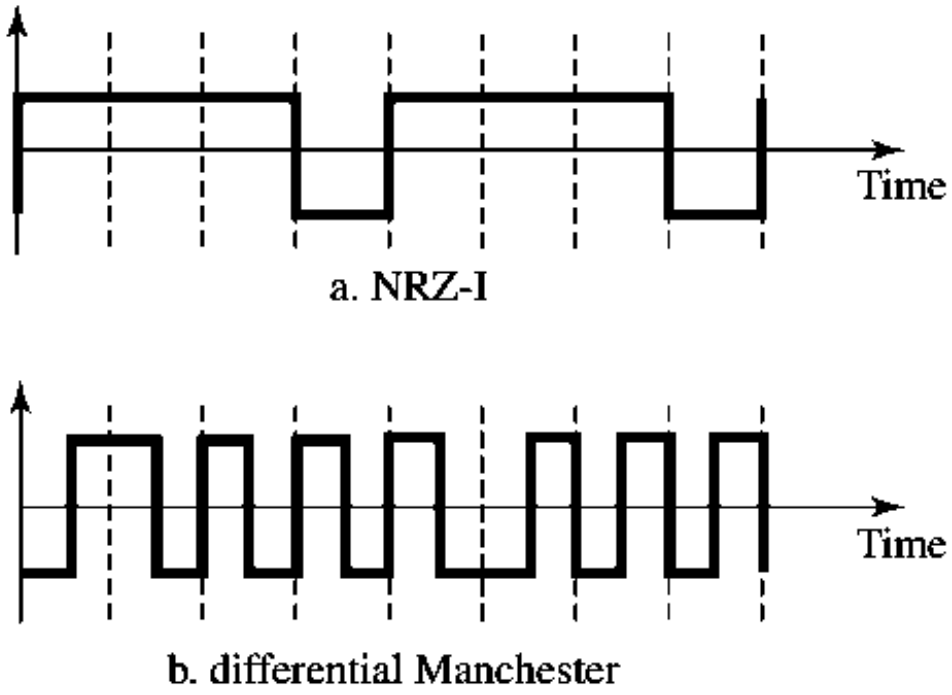


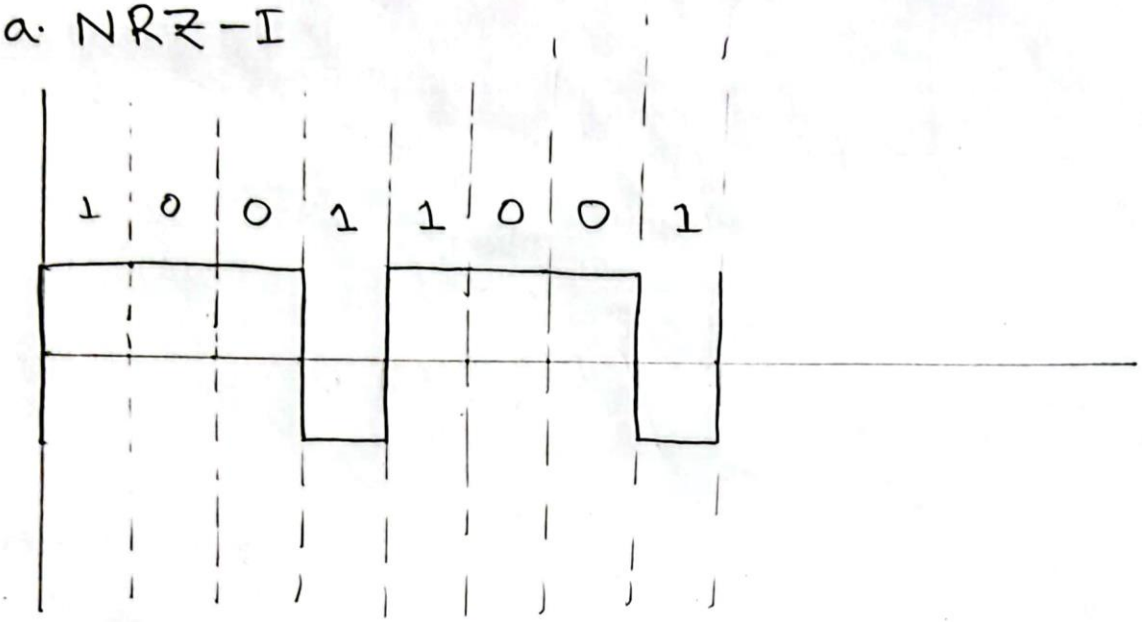
Figure 1: Graph for problem 1.

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**

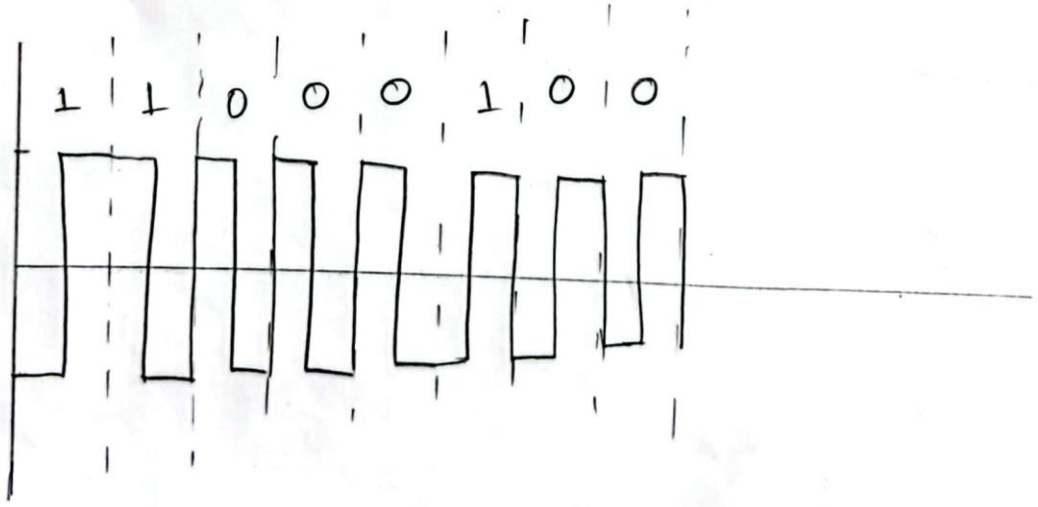
Answer to the Question No: 1

a. NRZ-I



8 bit data stream for NRZ-I = 10011001

b. Differential Manchester



8 bit data stream for Differential Manchester
= 11000100

Answer to the question No: 2

(a) for Data stream 00110011,

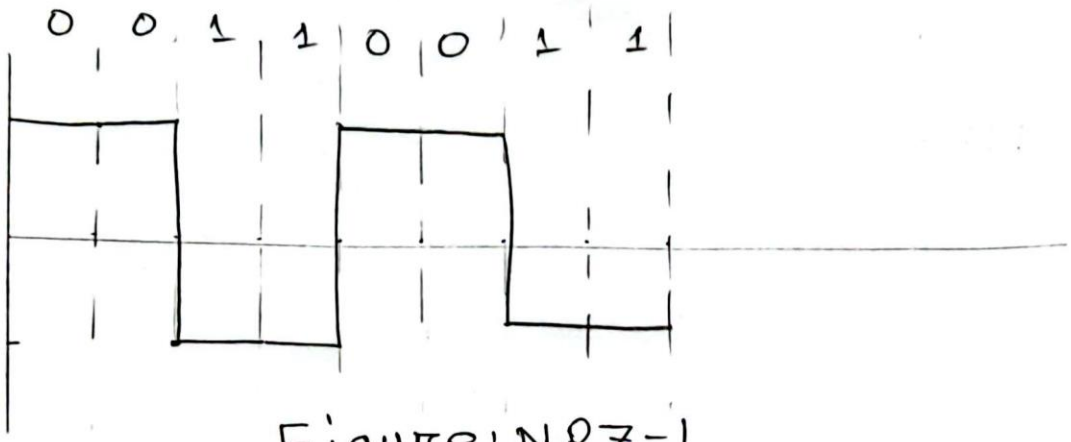


Figure: NRZ-L

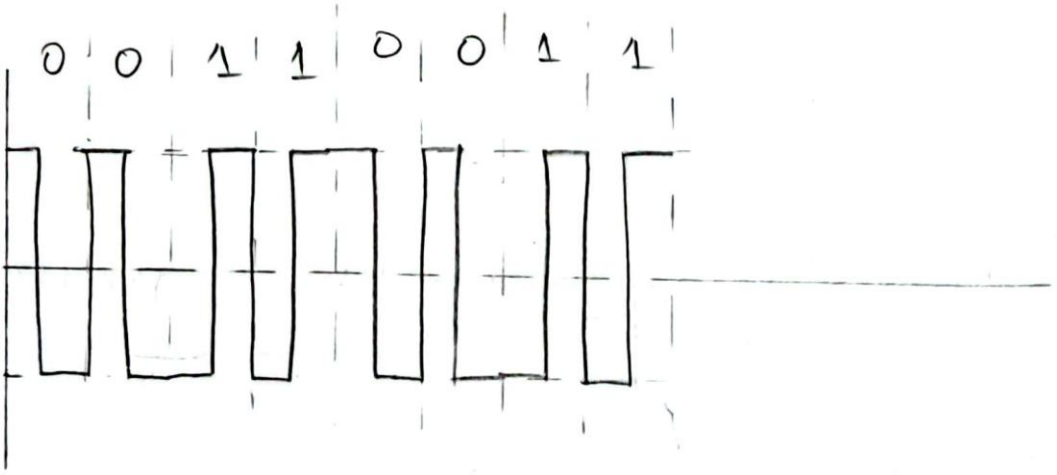


Figure: Manchester

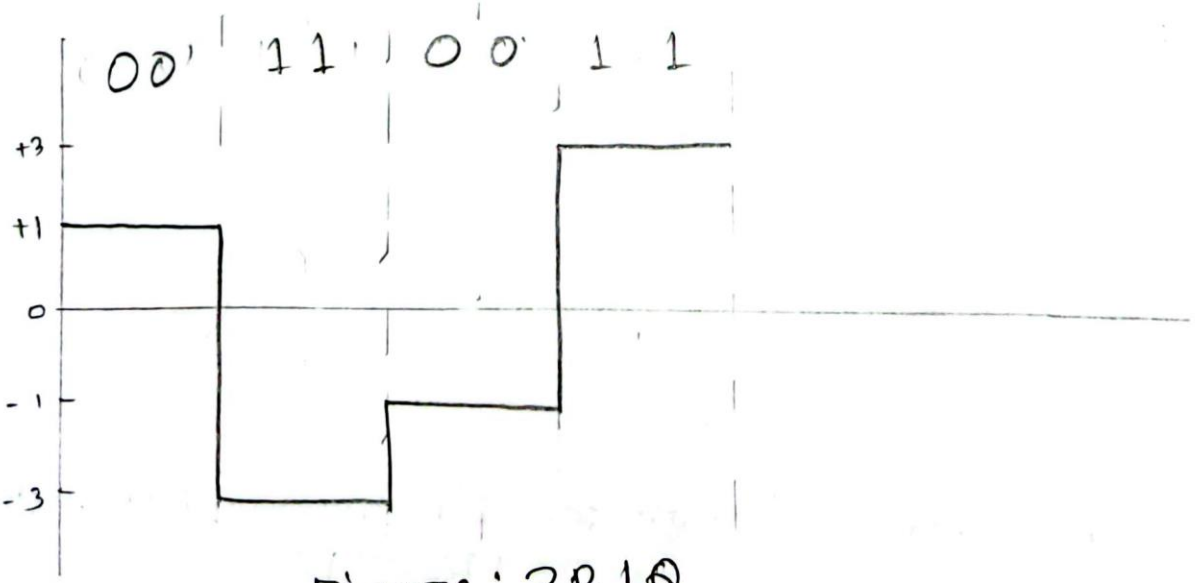


Figure: 2B1Q

For Data stream, 01010101,

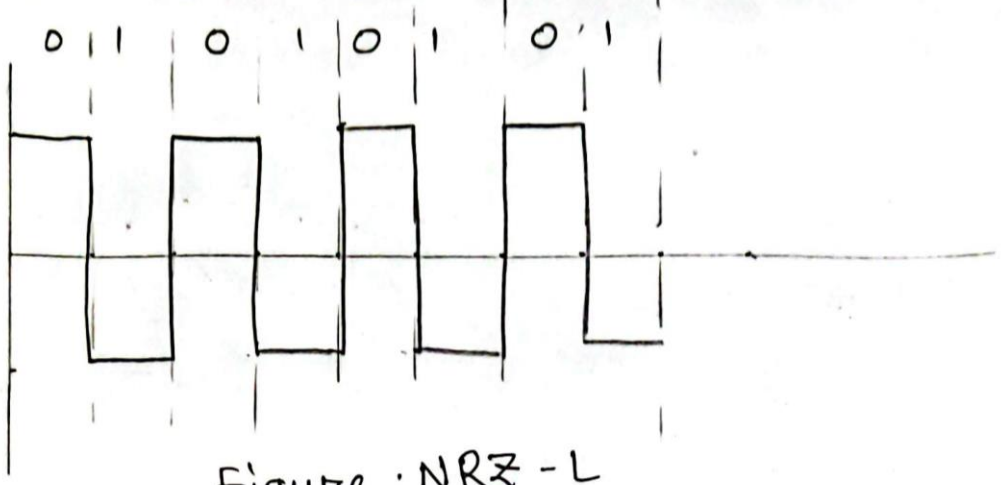


Figure : NRZ - L

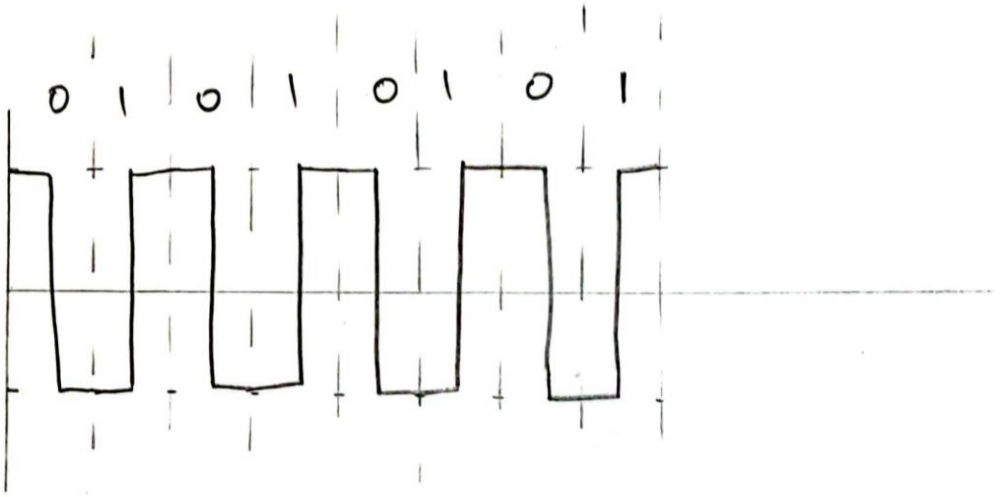


Figure: Manchester

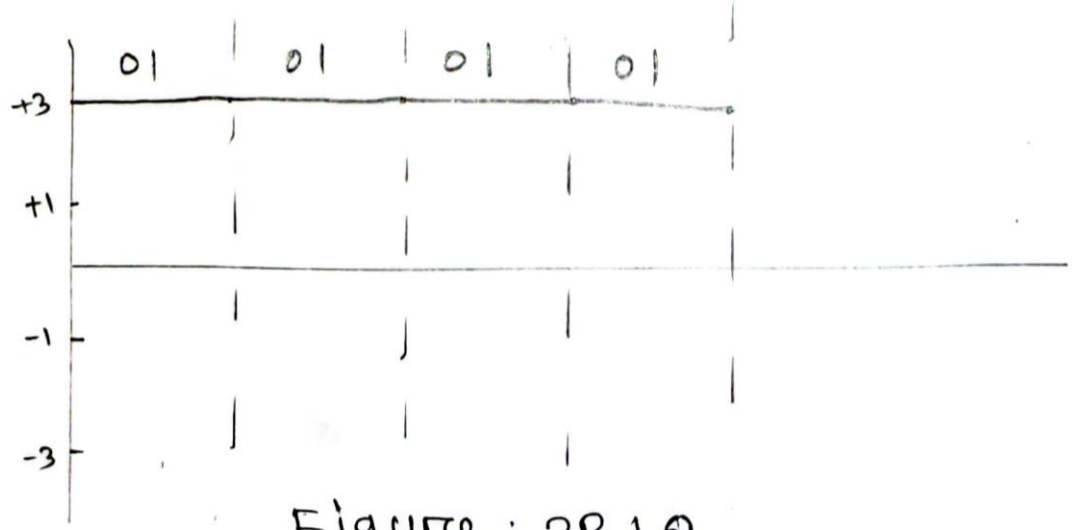


Figure: 2B1Q