

# CSE260 LAB ASSIGNMENT 3

NAME: ANIKA ISLAM

ID: 21101298

SECTION: C6

## Lab Assignment 3

### Report

(1) Name of the experiment:

Parity Generator and Checker

(2) Objective:

- To design and implement an even parity checker and Even Parity checker using XOR gates.

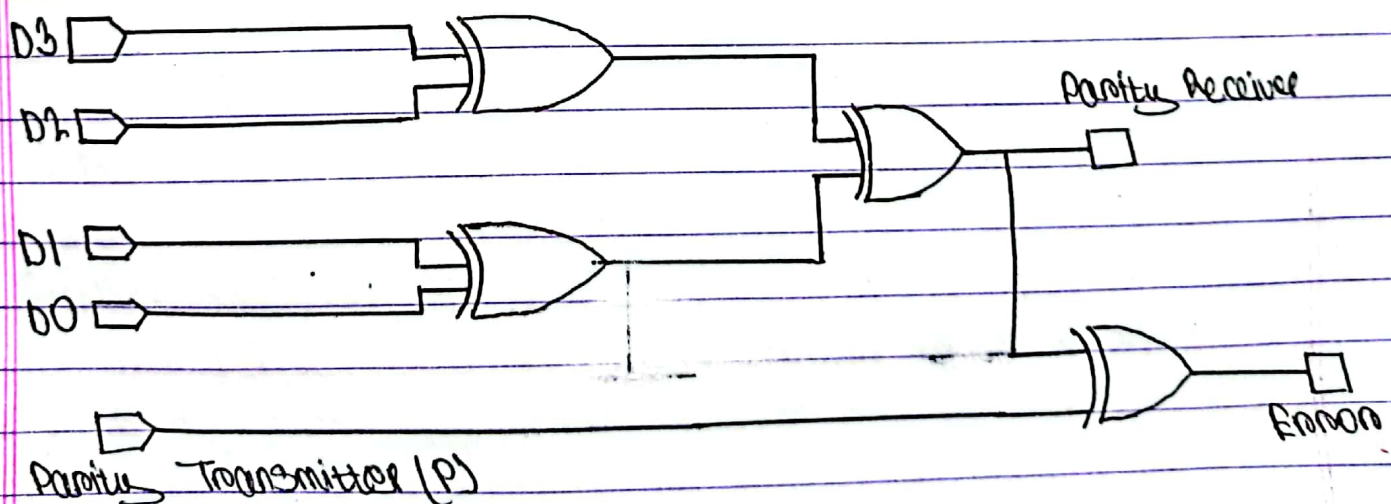
(3) Required Components and Equipments:

XOR

LOGIC PROBE

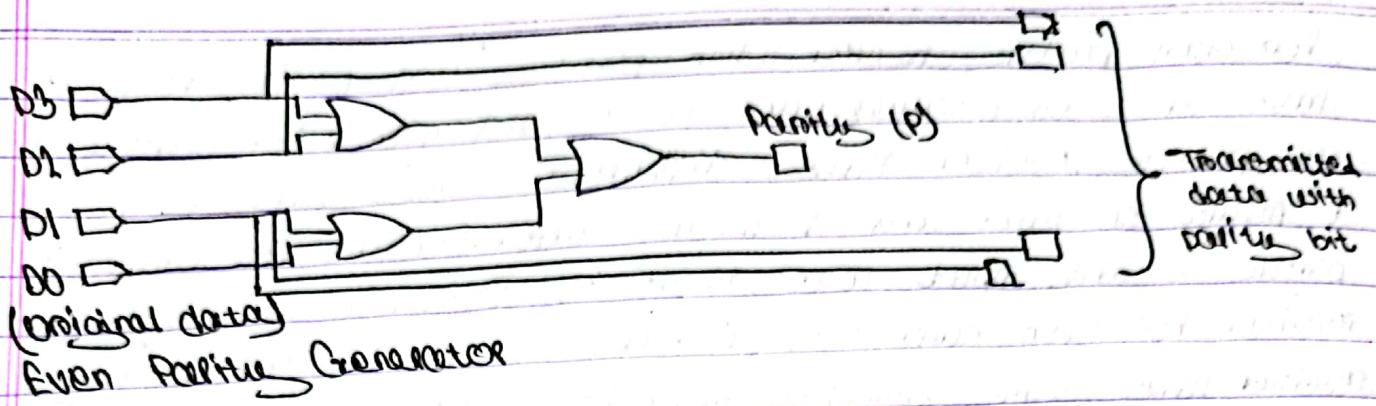
LOGIC STATE

(4) Experimental Setup:



Even Parity Checker





(5) Results in Tabulated forms:

	D3	D2	D1	D0	P
(a)	0	1	1	1	1
(b)	1	0	0	1	0
(c)	0	0	0	0	0
(d)	0	1	0	0	1

for Even parity generator

P	D3	D2	D1	D0	Parity Receiver	Error
0	1	0	1	0	0	0
1	1	1	1	0	1	0
1	1	1	1	1	0	1
1	0	0	0	0	0	1

for Even Parity checker

## (b) Discussions

Explain the results:

For even parity generator: Even number of '1's gives '0' parity as '0' and odd number of '1's gives parity as '1'. That is why, 1001 has parity '0' and 0111 and 0100 has parity '1'. On the other hand, 0000 has no 1, so parity is '0'.

For even parity checker: When parity and parity receiver have same ~~to~~ values, error is 0. and ~~when~~ when parity and parity receiver have different values, error is 1. 0 means no error and 1 means error. For this reason, with parity 0 and input 1010, there is 0 for in the parity receiver for even number of '1's. ~~and the parity and parity receiver have same value; so error is 0.~~ Also, with parity 1 and input <sup>11100</sup>0000, there is 1 in the parity receiver ~~for~~ for odd number of '1's. In both of these inputs, the parity and parity receiver have same values, so error is 0. On the other hand, ~~the~~ for parity 1 and input 0000, the parity receiver gives 0 for no '1's; and for parity 1 and input 1111, the parity receiver gives 0 for even number of '1's. ~~As~~ As a result, parity and parity receiver gives different value, so there is an error and error is 1.

Difficulties faced: In protocols, there is difficulty in noticing any loose connections, and as a result wrong output comes. For this reason, the whole circuit needs to be <sup>build up</sup> ~~setup~~ again.

New learning: The use of parity ~~check~~ in transmitter and parity receiver to detect the error for a change in a single bit in transmission and receiver is ~~learned~~. has been learned.