EXPERIMENT - 5

OBJECTIVE:

Study of gray code to Binary code Conversion

EQUIPMENT NEEDED:

	Component		Quantity
①	IC 7486	2 input XOR gate	1

THEORY:

Gray Code

The gray code belongs to a class of codes called minium change codes, in which only one bit in the code changes when moving from one bit in the code changes when moving from one code to the next. Gray code is non weighted, as the position of the bit does not contain any weight. The gray code is reflective digital code which has the special property that any two subsequent number codes differ by only. This is also called distance code.

PROCEDURE :

When switch is pressed it indicates 'High' position
when switch is upressed it indicate 'Low' position

① Make connections in bread board as shown in figure
② Connect +5V to pin 14
③ Connect inputs I0-I3 to G0-G3
④ Connect outputs B0-B3 to E0-E3 of 10 bit led indicater.
⑤ Switch ON the kit.
⑥ Set the input switches S0-S3 to low initially.
⑦ Observe outputs B3-B0 on led L3-L0 of 10 bit led indicater.
⑧ Verify truth table for input combinations

Gray Code				Binary			
G3	G2	G1	G0	B3	B2	B1	B0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	1
0	0	1	1	0	0	1	0
0	0	1	0	0	0	1	1
0	1	1	0	0	1	0	0
0	1	1	1	0	1	0	1
0	1	0	1	0	1	1	0
0	1	0	0	0	1	1	1
1	1	0	0	1	0	0	0
1	1	0	1	1	0	0	1
1	1	1	1	1	0	1	0
1	1	1	0	1	0	1	1
1	0	1	0	1	1	0	0
1	0	1	1	1	1	0	1
1	0	0	1	1	1	1	0
1	0	0	0	1	1	1	1

Conclusion :

Gray code to Binary code conversion is studied. Most significant bit of gray code as well as binary is same as for as 4 bit code is concerned.

Assessment of the Experiment / Assignment :

Timely Submission (07)	Presentation (06)	Understanding (12)	Total (25)	Signature of Teacher with date
07	06	11	24	7/10/24