EXPERIMENT NUMBER-35 :-

TITLE:- Realization of Shift-Register Circuit.

OBJECTIVE:- Realization of Shift-Register Circuit, (a) SISO, (b) SIPO, (c) PIPO, (d) PISO.

APPARATUS REQUIRED :-

Sl. No	Component's Name	Specification	QTY
1	D Flip-Flop	4013	2
2	Trainer Kit	–	1
3	Wires	–	1 bunch

THEORY :-

A register capable of shifting its binary information either to the right or to the left is called a "shift register". The logical configuration of a shift-register consists of a chain of flip-flops connected in cascade, with the output of one flip-flop connected to the input of the next flipflop. All flip-flop receives a clock pulse which causes the shift.

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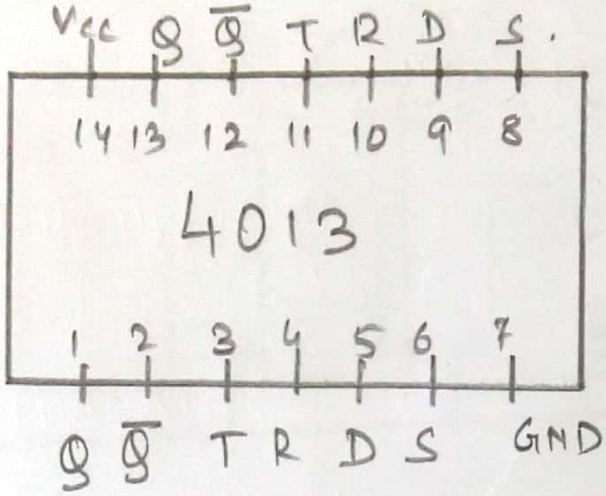
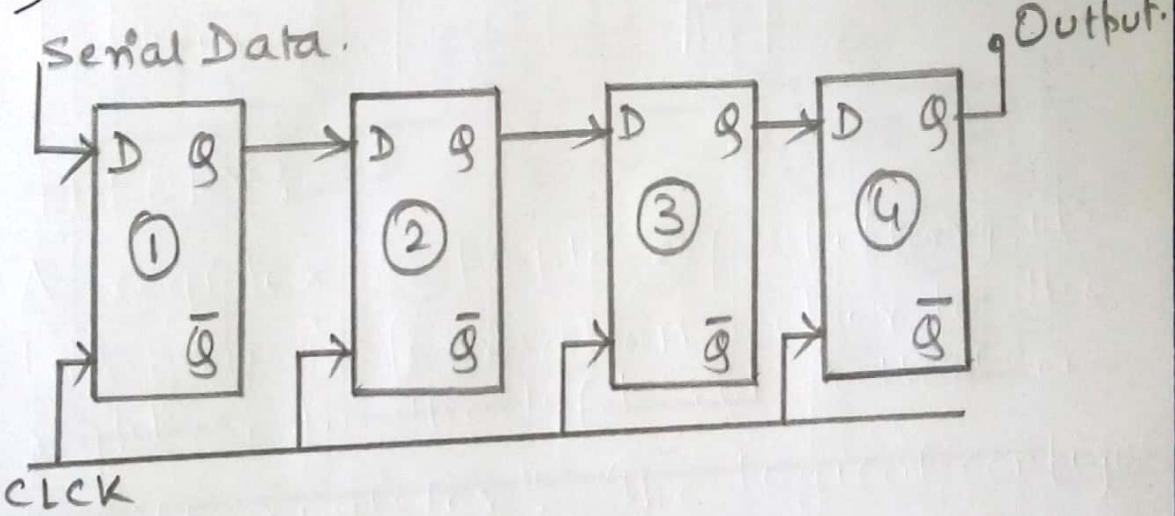
PIN CONFIGURATION :-

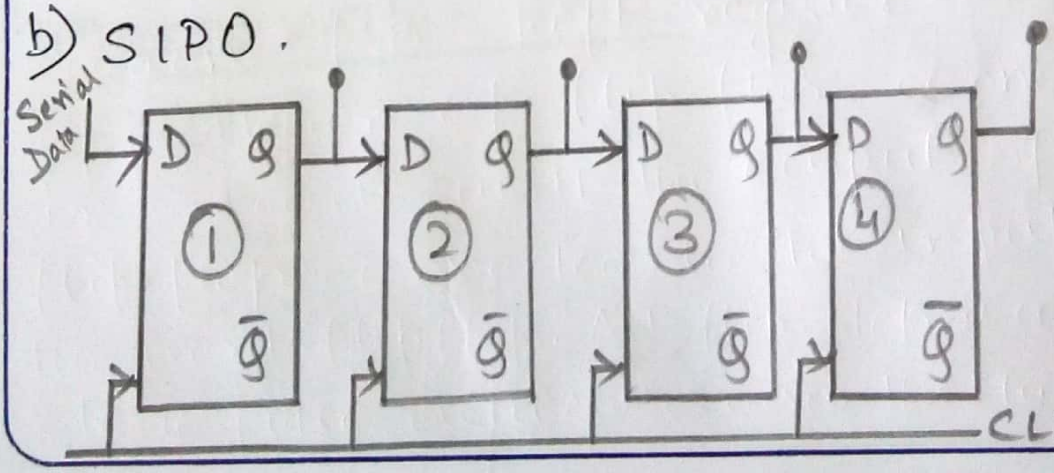


CIRCUIT DIAGRAM :-

a) SISO



b) SIPO.



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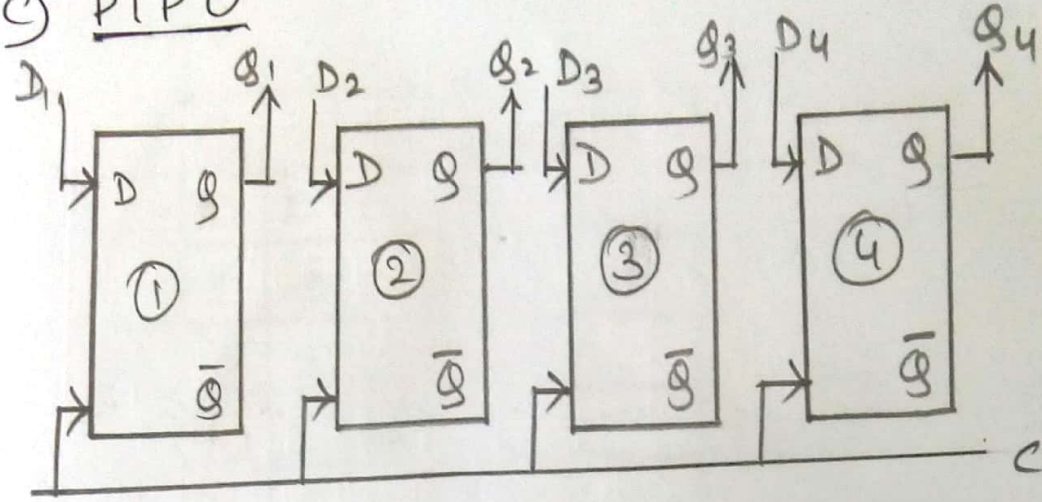
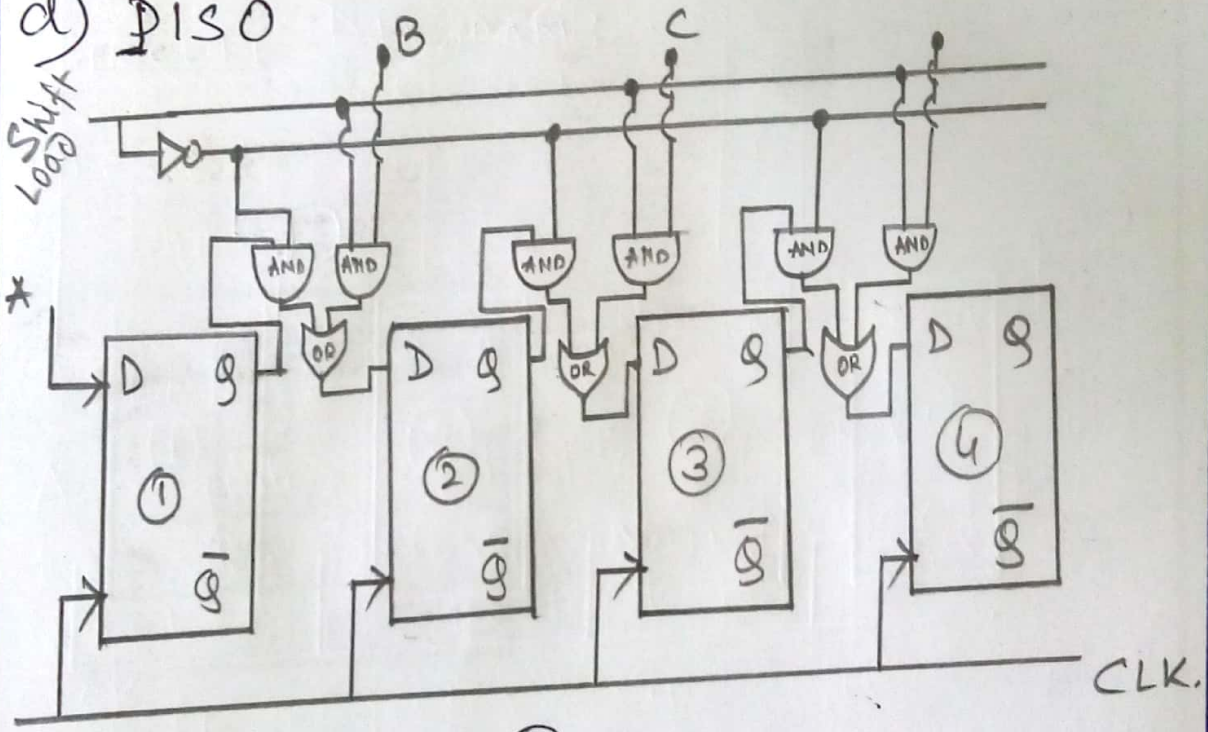
c) PIPO



d) PISO



OBSERVATION TABLE:-

a) SISO.

D.T.O.

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a) SISO.

CLK	Q_1	Q_2	Q_3	Q_4	Output
Initial value	0	0	0	0	0
1	1	0	0	0	0
2	1	1	0	0	0
3	0	1	1	0	0
4	1	0	1	1	1

b) SIPO.

CLCK	Q_1	Q_2	Q_3	Q_4
0	0	0	0	0
1	1	0	0	0
2	0	1	0	0
3	0	0	1	0
4	0	0	0	1
5	0	0	0	0

c) PIPO.

CLK	Q_1	Q_2	Q_3	Q_4	Q output
Initial state	0	0	0	0	
1	1	1	0	0	0
2	1	1	1	0	0
3	1	1	1	1	0
4	1	1	1	1	1.

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a) PISO.

clk	Q_1	Q_2	Q_3	Q_4	Output
1	1	1	1	1	1
2	0	1	1	1	1
3	0	0	1	1	1
4	0	0	0	1	1
5	0	0	0	0	1
6	0	0	0	0	0

CONCLUSION:-

With the help of this experiment, we came to know about different shift register, and how they are made using 4013 IC and its difference within them.

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