Name of the Experiment: Applications of Kmap method

Objective: (i) To investigate the rules of kmap

(ii) To gain experience working with practical circuits

(iii) To simplify a complex function using kmap

Required Components and Equipments:

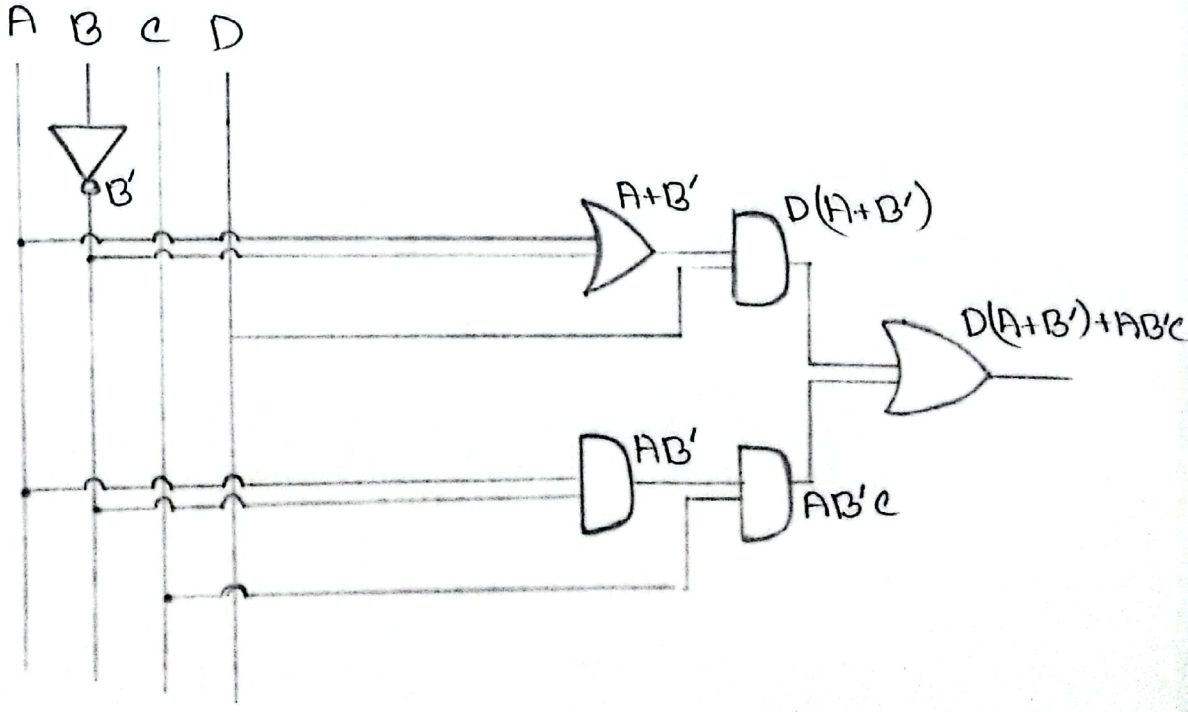
(i) Breadboard

(ii) Connecting wires

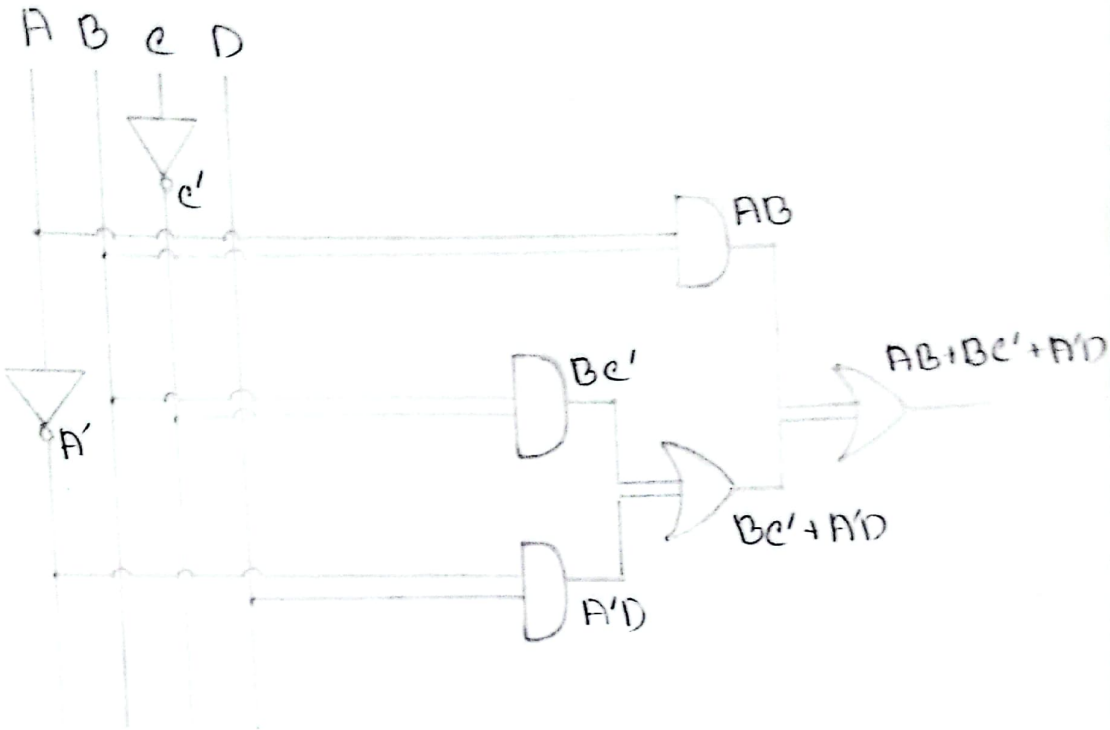
(iii) AND, OR, NOT Gate

Experimental Setup

(i) Function - 1



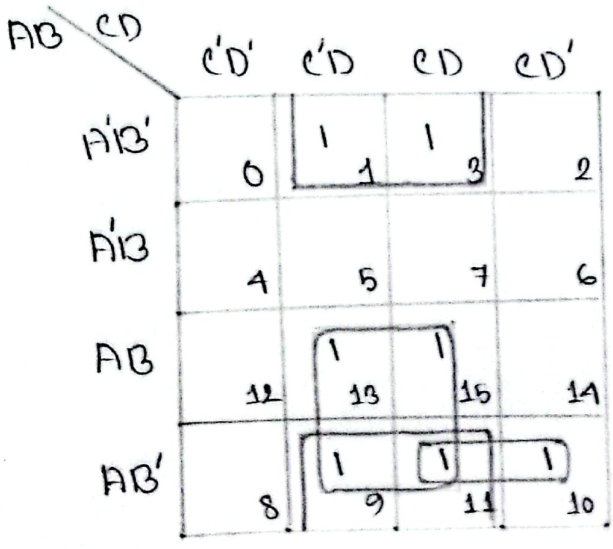
(ii) Function - 2



Results (K-Map) and Discussions :

(i) Function - 1

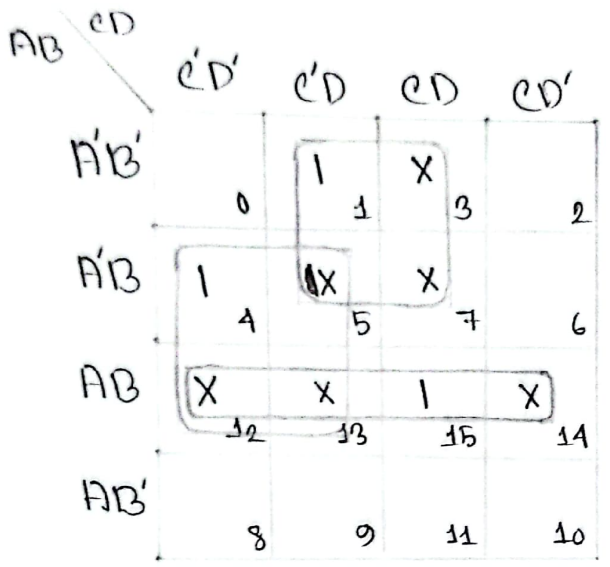
$F(A,B,C,D) = \Sigma(1, 3, 9, 10, 11, 13, 15)$



$F(A,B,C,D) = AD + B'D + AB'C = D(A+B') + AB'C$

(ii) Function - 2

$F(A,B,C,D) = \sum (1,4,15) + d(3,5,7,12,13,14)$



$F(A,B,C,D) = AB + BC' + A'D$

Truth Table For Function - 1

	A	B	C	D	B'	A+B'	D(A+B')	AB'C	D(A+B')+AB'C
0	0	0	0	0	1	1	0	0	0
1	0	0	0	1	1	1	1	0	1
2	0	0	1	0	1	1	0	0	0
3	0	0	1	1	1	1	1	0	1
4	0	1	0	0	0	0	0	0	0
5	0	1	0	1	0	0	0	0	0
6	0	1	1	0	0	0	0	0	0
7	0	1	1	1	0	0	0	0	0
8	1	0	0	0	1	1	0	0	0
9	1	0	0	1	1	1	1	0	1
10	1	0	1	0	1	1	0	1	1
11	1	0	1	1	1	1	1	1	1
12	1	1	0	0	0	1	0	0	0
13	1	1	0	1	0	1	1	0	1
14	1	1	1	0	0	1	0	0	0
15	1	1	1	1	0	1	1	0	1

Truth Table For Function - 2

	A	B	C	D	A'	C'	AB	BC'	A'D	AB+BC'+A'D
0	0	0	0	0	1	1	0	0	0	0
1	0	0	0	1	1	1	0	0	1	1
2	0	0	1	0	1	0	0	0	0	0
3	0	0	1	1	1	0	0	0	1	1
4	0	1	0	0	1	1	0	1	0	1
5	0	1	0	1	1	1	0	1	1	1
6	0	1	1	0	1	0	0	0	0	0
7	0	1	1	1	1	0	0	0	1	1
8	1	0	0	0	0	1	0	0	0	0
9	1	0	0	1	0	1	0	0	0	0
10	1	0	1	0	0	0	0	0	0	0
11	1	0	1	1	0	0	0	0	0	0
12	1	1	0	0	0	1	1	1	0	1
13	1	1	0	1	0	1	1	1	0	1
14	1	1	1	0	0	0	1	0	0	1
15	1	1	1	1	0	0	1	0	0	1