

LAB ASSIGNMENT 24

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SECTION: 6

LAD ASSIGNMENT 1

Report

(1) Name of the Experiment:
Applications of Kmap methods

(2) Objective

- To Investigate the rules of Kmap
- To gain experience working with practical circuits
- To simplify a complex function using Kmap

(3) Required Components and Equipments

AND

NOT

OR

LOGIC STATE

LOGIC PROBE

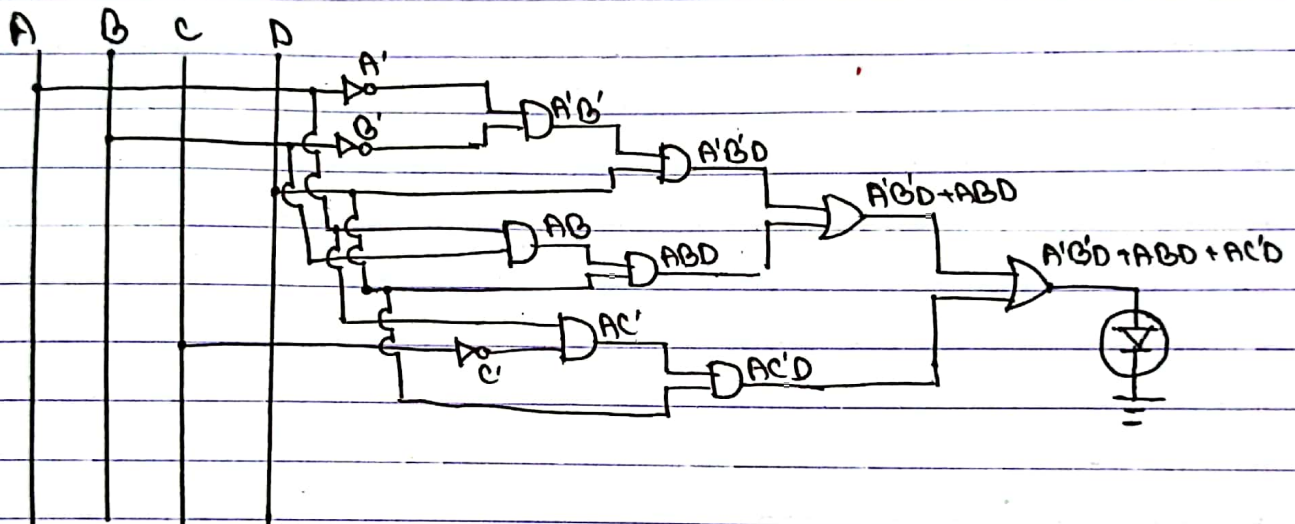
LED - AQUA

LED - YELLOW

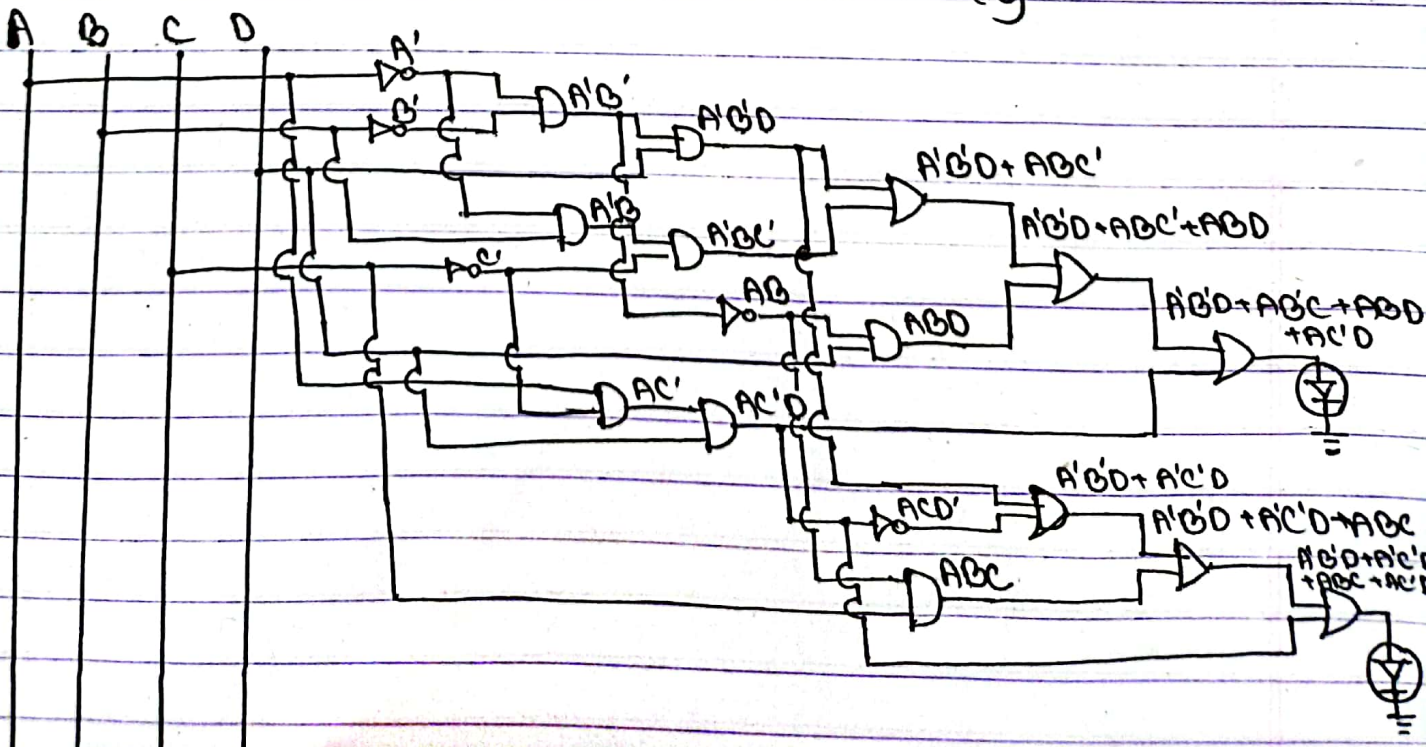
GROUND

(1) Experimental Setup

$$(1) F(A, B, C, D) = A'B'D + ABD + AC'D$$



$$(2) F(A, B, C, D) = A'B'D + A'BC' + ABD + AC'D \quad \text{--- (1)} \\ F(A, B, C, D) = A'B'D + A'C'D + ABC + AC'D \quad \text{--- (2)} \quad \text{OR}$$



(A) Results (Truth Tables) and Discussions.

Truth Table:

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

A	B	C	D	Output
0	0	0	0	0
0	0	0	1	1
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	1
1	0	1	0	0
1	0	1	1	0
1	1	0	0	0
1	1	0	1	1
1	1	1	0	0
1	1	1	1	1

$$F(A, B, C, D) = A'B'C'D + A'B'CD + AB'C'D + ABC'D + ABCD$$

$$(2) F(A, B, C, D) = \sum (1, 4, 10, 15) + d(3, 5, 13, 14)$$

A	B	C	D	Output
0	0	0	0	0
0	0	0	1	1
0	0	1	0	0 0
0	0	1	1	X
0	1	0	0	1
0	1	0	1	X
0	1	1	0	0
0	1	1	1	0
1	0	0	0	0
1	0	0	1	0
1	0	1	0	1
1	0	0 1	1	0
1	1	0	0	0
1	1	0	1	X
1	1	1	0	X
1	1	1	1	1

$$A'B'C'D + A'BC'D' + AB'CD' + A'B'C'D'$$

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

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

$$A'B'D + ABD + AC'D$$

$$D(A'B' + AB + AC')$$

$$(2) F(A, B, C, D) = \sum (1, 4, 10, 13) + d(3, 5, 13, 14)$$

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

$$A'B'D + A'BC' + ABD + ACD' \quad \text{--- (I)}$$

$$A'B'D + A'C'D + AB'D + ACD' \quad \text{--- (II) OR}$$