EE 5811 : FPGA LAB ASSIGNMENT 1

ANNU (EE21RESCH01010)

Download the codes from

https://github.com/annu100/FPGA−LAB/tree/main/Assignment1

1 PROBLEM STATEMENT-ICSE 2017-5(A)

A school intends to select to select candidates for an inter-School Eassy competition as per the criteria given below:

- The student has participated in an earlier competition and is very creative.
- The student is very creative and has excellent awareness,but has not participated in any competition earlier.
- The student has excellent general awareness and has won prize in an inter house competition.

The inputs are

- **A:** Participated in a competition earlier.
- **B:** is very creative.
- **C:** Won prize in an inter house competition.
- **D:** has excellent general awareness.

In all the above cases,1 indicates yes and 0 indicates no.
OUTPUT: X[1 indicates yes and 0 indicates no.]
Draw the truth table for the inputs nd outputs given above and write POS expressions for it

2 SOLUTION

$$X(A,B,C,D) = \prod(0,1,2,4,6,7,8,9,10,11,13,14,15,) \tag{1}$$

Truth table for the above problem is:

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

TABLE 0: Truth Table

3 Truth Table

$$X = (A+D)(A'+B)(B'+C')(B+C+A)(A+C+D') \tag{2}$$

Corresponding K-MAP is