is

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

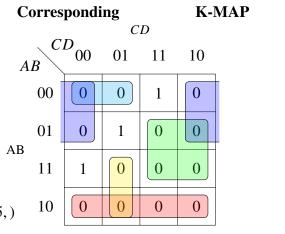
$$X(A, B, C, D) = \prod (0, 1, 2, 4, 6, 7, 8, 9, 10, 11, 13, 14, 15,)$$
(1)

| A | В | C | D | X |
|---|-----------------------|----------------------------|-----------------------|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | | 0 |
| 0 | 0 | 1 | 1 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 0 0 1 1 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 0 0 0 0 0 0 1 1 1 1 | 1 | 1 1 0 0 1 1 | 1 0 1 0 1 | 0 |
| 1 | 1 0 | 0 | 0 | 0 |
| 1 | 0 | 0 1 1 | 1 | 0 |
| 1 | 0 | 1 | 1 0 1 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 0 0 0 1 | | 0 | 1 |
| 1 | 1 | 0 0 1 | 1 | 0 1 0 1 0 0 0 0 0 0 0 0 |
| 1 | 1 | 1 | 0 1 | 0 |
| 1 | 1 | 1 | 1 | 0 |

TABLE 0: Truth Table

3 TRUTH TABLE

$$X = (A+D)(A'+B)(B'+C')(B+C+A)(A+C+D')$$
(2)



Truth table for the above problem is: