FPGA Lab Assignment 1

EE20MTECH14016 - Pulkit Saxena

1 QUESTION

[CBSE 2019 Q6 (a)] State any one Distributive Law of Boolean Algebra and verify it using truth table.

2 SOLUTION

Distributive Law is as follows:-

$$A.(B + C) \tag{2.1}$$
$$= A.B + A.C \tag{2.2}$$

3 TRUTH TABLE

Verification of the above stated distributive law using truth table is as follows.

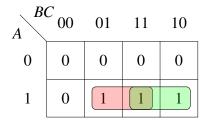| A	B	C	B+C	A.(B+C)	A.B	A.C	A.B+A.C
0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	0
0	1	0	1	0	0	0	0
0	1	1	1	0	0	0	0
1	0	0	0	0	0	0	0
1	0	1	1	1	0	1	1
1	1	0	1	1	1	0	1
1	1	1	1	1	1	1	1

$$A.(B + C) = A.B + A.C \tag{3.1}$$

4 KARNAUGH MAP

Fig. 1: K-Map for $A.B + A.C$