Assignment 1

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Download the LaTex code from:

https://github.com/neharani289/FPGA−Lab/tree/ main/Assignment1

1 QUESTION

[ICSE 2017 Q5 (b)]
State the application of Half Adder. Draw the truth table and circuit diagram for a Half Adder

2 SOLUTION

Application of Half Adder :

1) Half Adder is a combinational logic circuit. It is used for the purpose of adding two single bit numbers.

2) Half adder is used to make full adder as a full adder requires 3 inputs, the third input being an input carry i.e. we will be able to cascade the carry bit from one adder to the other.

3) The ALU (arithmetic logic circuitry) of a computer uses half adder to compute the binary addition operation on two bits.
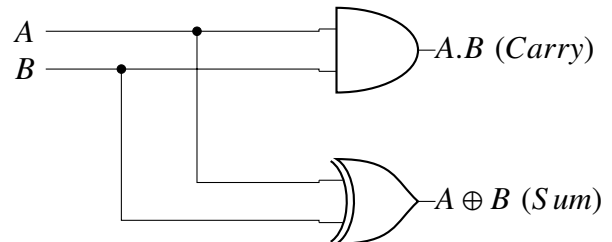

Fig. 1: Circuit Diagram of Half Adder

3 TRUTH TABLE OF HALF ADDER

The truth table corresponding to sum and carry for various choices of input A, B is shown below:

A	B	Sum	Carry
0	0	0	0
0	1	1	0
1	0	1	0
1	1	0	1

4 CIRCUIT DIAGRAM