

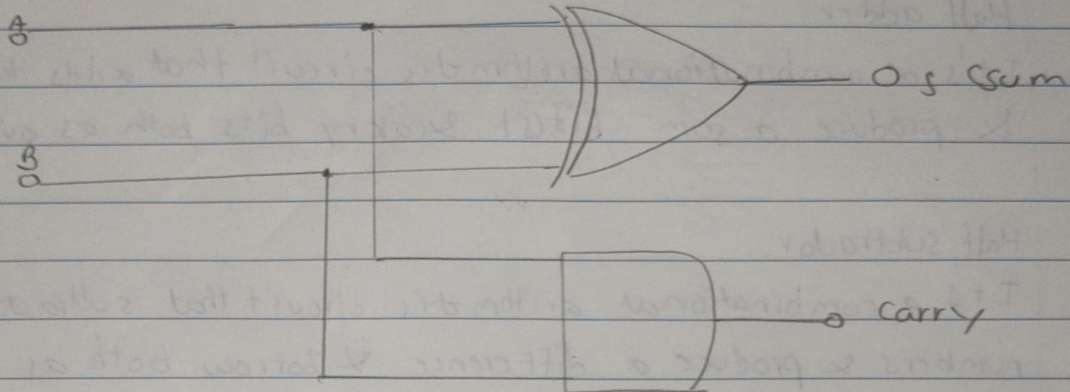
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Experiment - 3

Verify truth table of half adder & half subtractor

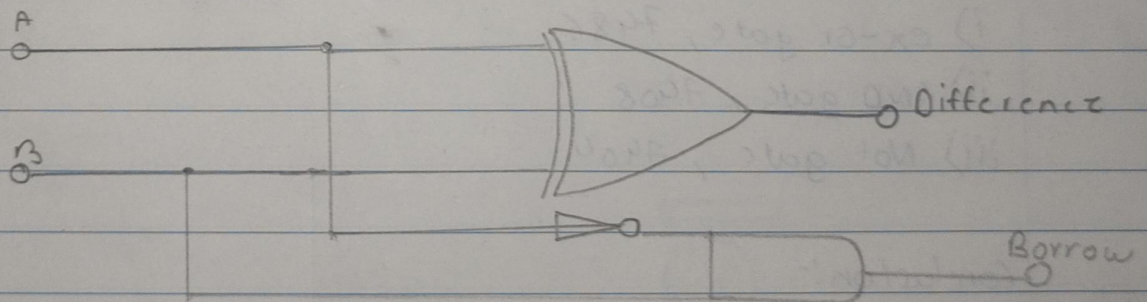
1) Logic diagram & truth table of half adder & half subtractor

Half adder



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

Half subtractor



A	B	Difference	Borrow
0	0	0	0
0	1	1	1
1	0	1	0
1	1	0	0

2) Answer the following practical related questions

a) Define half adder & half subtractor

→

Half adder

It's a combinational arithmetic circuit that adds two numbers & produce a sum bit(s) & carry bits both as output

Half subtractor

It's a combinational arithmetic circuit that subtracts two numbers & produce a difference & borrow both as output

b) List the IC number used in half adder & half subtractor

→ Half adder

i) ex-or gate, 7486

ii) AND gate, 7408

Half subtractor

i) ex-or gate, 7486

ii) AND gate, 7408

iii) Not gate, 7404

Conclusion:-

From this expt we were able to verify truth table of half adder & half subtractor