Date
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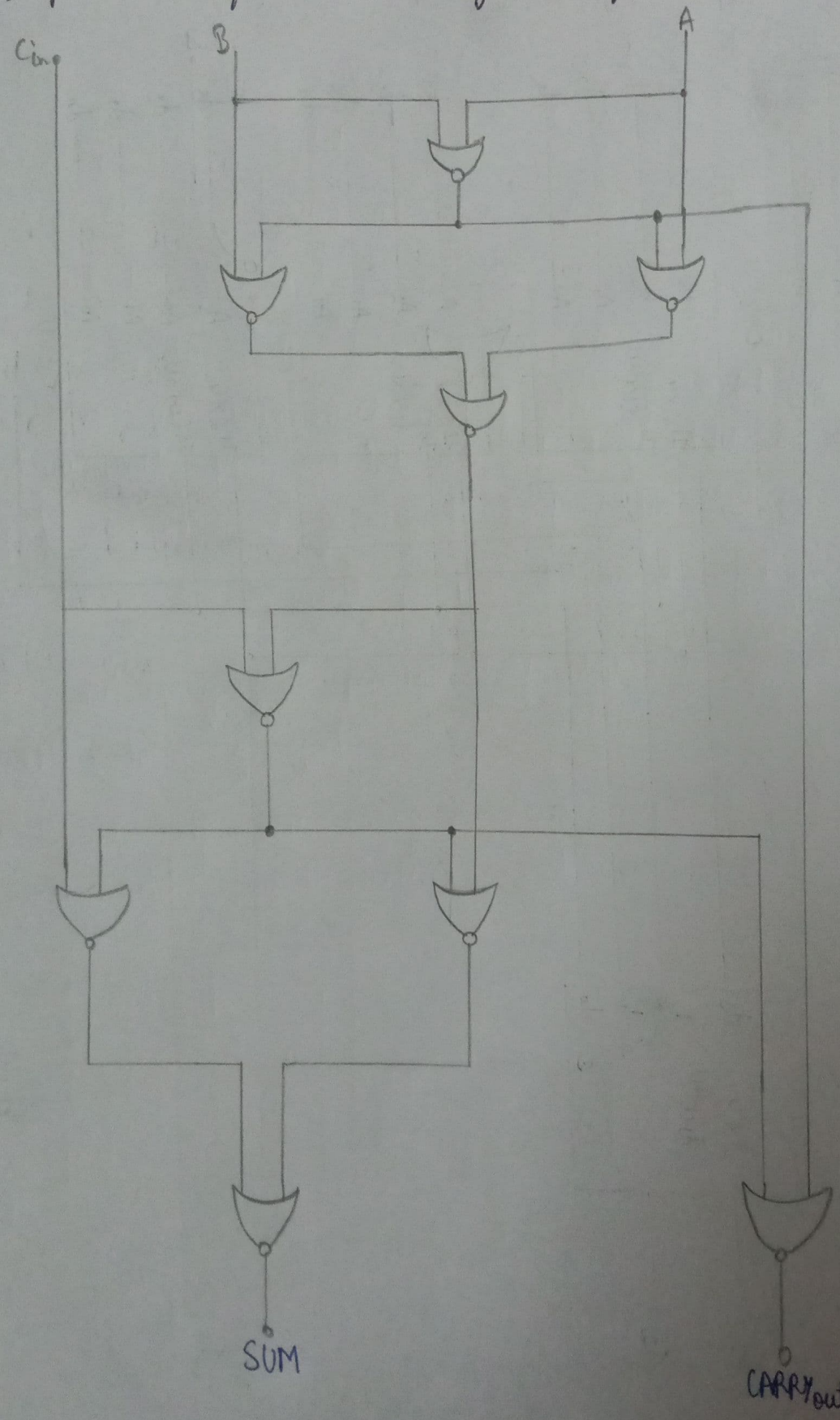
Question - 5 →

(b) Implement a full adder using NOR gates –



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A full adder takes 3 input and gives 2 output sum & carry

In this circuit diagram, A full adder using nor gates has been implemented

There are three inputs C_{in}, A and B

Question 5 (a)

4 bit combinational circuit using NAND gates :

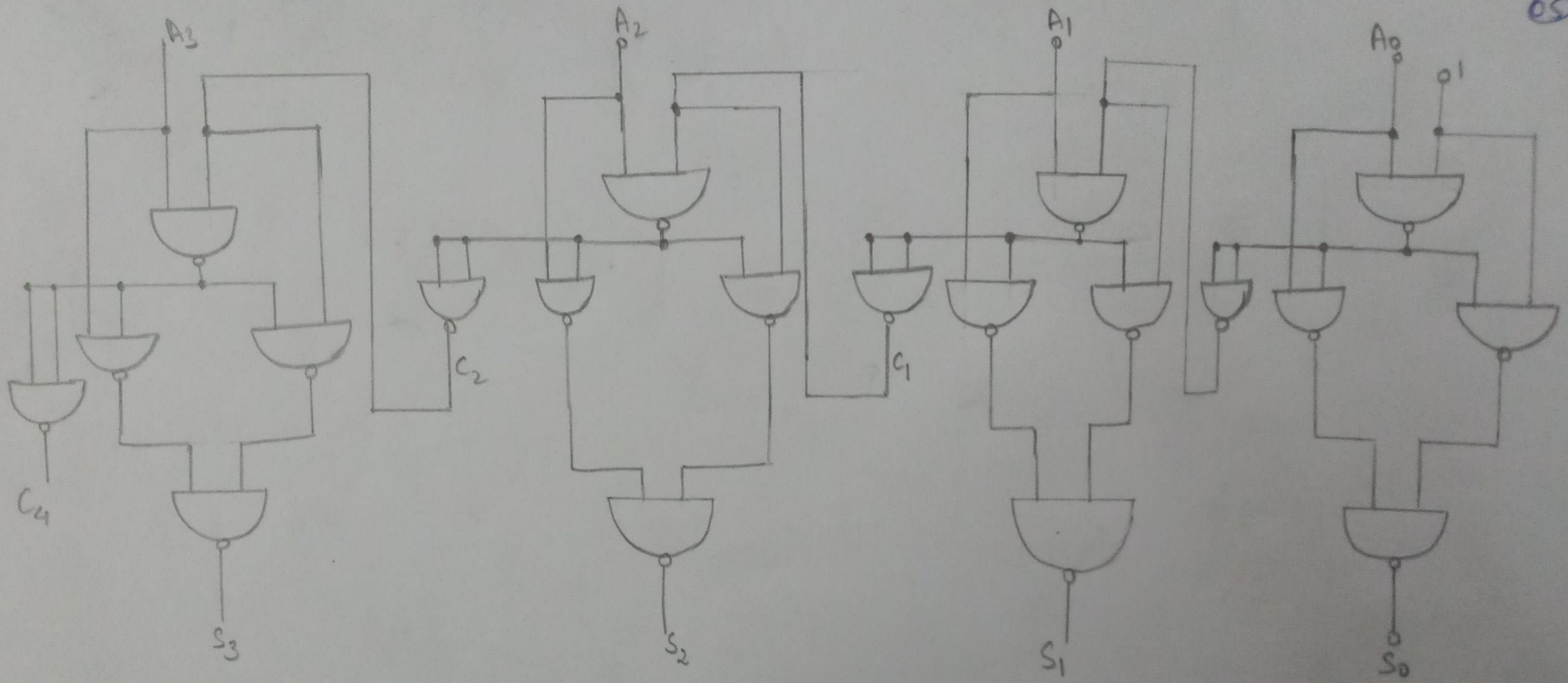
4 half adders (using NAND gates) is used in this circuit diagram to implement a 4 bit combinational circuit.

In a half adder there are two inputs, x and y, which returns two outputs, sum and carry.

Let us consider, the binary value is stored in a register A. now, we have used 4 half adders for 4 bit incrementer and we will pass one bit in each half adder in one input, say (x), and for first half adder (in which we are passing A_0, we will pass 1 in its second input y.

Now, the carry from previous half adder is passed to next half adder's y-input.

for, last half adder carry from it represent if the incrementation caused overflow or not.



4- bit Combinational circuit using NAND gates