Name, Surname :
Number :
Course Code :
Course Name :
Exam : ○ Quiz ● Midterm ○ Final
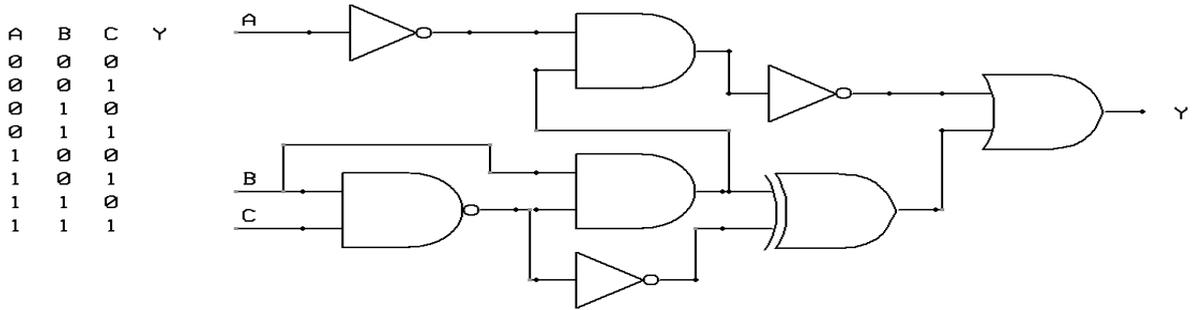Date :

Please make sure to write your name and student number on each paper that you have used

Question Number	1	2	3	4	5	Total
Mark						

Note: **Exam duration is 60 minutes only.**

Questions

1- Determine the Boolean function for output **Y** as a functions of three input A,B,C in figure below

2- Design a combinational circuits that subtract **one to a 4 bit binary** number, A_3 ,A_2 ,A_1 ,A_0 .*For example*, if the input of the circuit is, A_3 ,A_2 ,A_1 ,A_0 =1101, the output is 1101-1= **1100**

3- **Simplify** the boolean fonction, $F(a,b,c,d)=\sum(1,3,6,9,11,15)$, don't care conditions $d(a,b,c,d)= \sum(4,5,7,10,12)$ and **draw** the logic circuit.

4- Design a combinational circuit with **three inputs** and **one output**. The output is 1 when the binary value of the inputs is _less_ than 3. The output is 0 otherwise.

5- Design the 3 bit full adder with using **3x8 decoder** and **OR gates**

Yrd.Doç.Dr. Oğuz ATA