Assignment #4.

Roll no: 20K-0409.

Question 2

Solution.

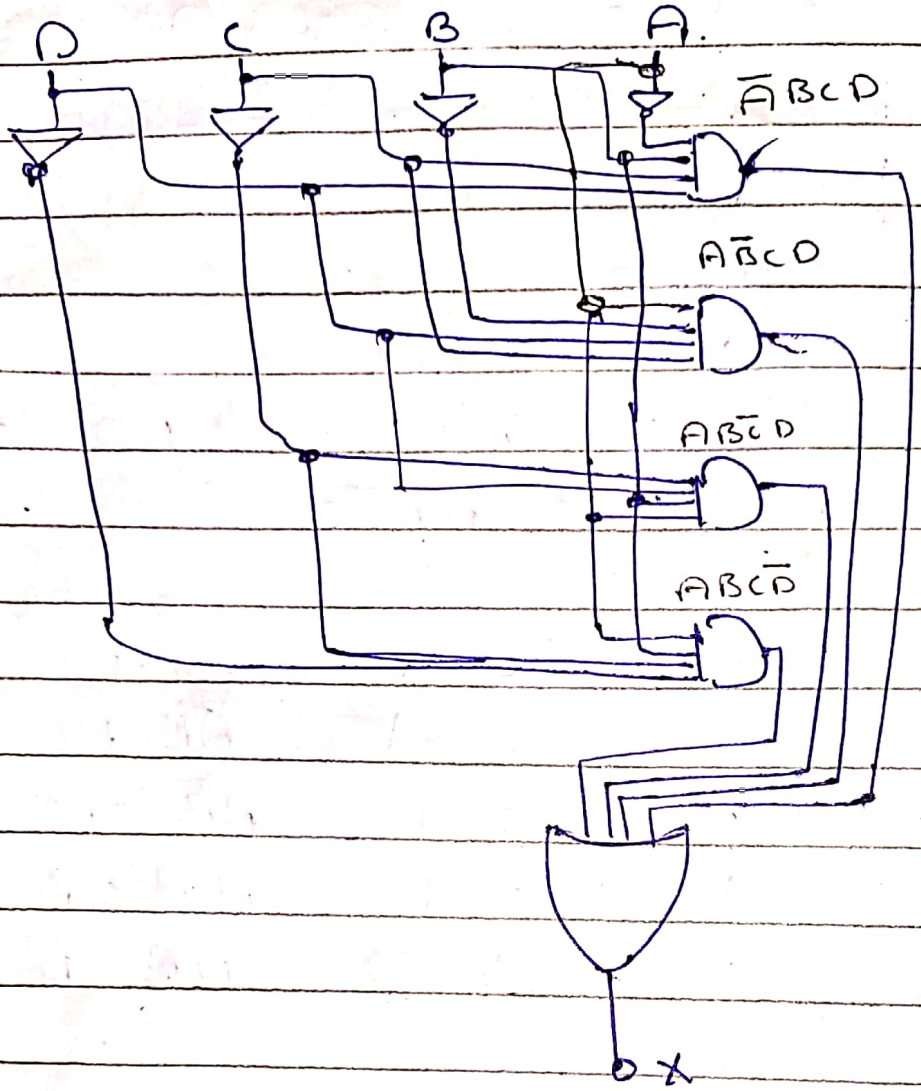
Out of 16 there are 4 possible combination of inputs.

A	B	C	D	X
0	1	1	1	$\bar{A}BCD$
1	0	1	1	$A\bar{B}CD$
1	1	0	1	$AB\bar{C}D$
1	1	1	0	$ABC\bar{D}$

Expression :-

$$X = \bar{A}BCD + A\bar{B}CD + AB\bar{C}D + ABC\bar{D}.$$

circuit diagram.



Question 3.

To convert from 6-bit binary code to gray code we can apply formula:-

~~$B_5 =$~~ $G_5 = B_5$

$G_4 = B_4 \oplus B_5$

$G_3 = B_3 \oplus B_4$

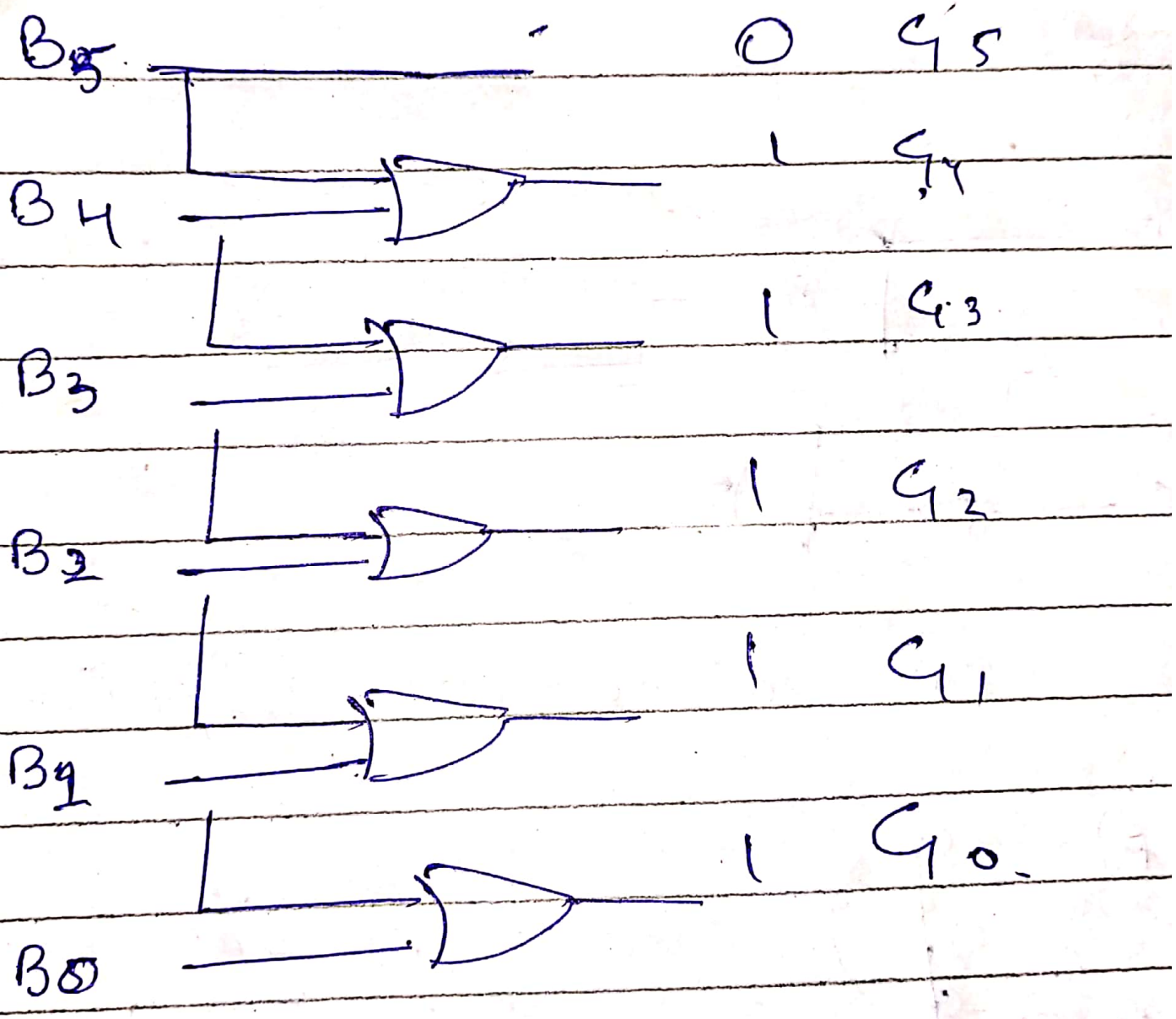
$G_2 = B_2 \oplus B_3$ $G_1 = B_1 \oplus B_2$

$G_0 = B_0 \oplus B_1$

For example $(0\,1\,0\,1\,0\,1)_2$ → Gray code.

$B_5\ B_3\ B_1$

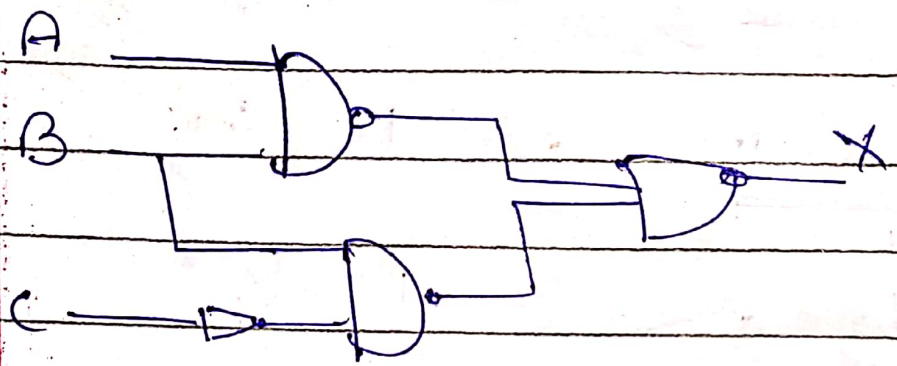
$B_4\ B_2\ B_0$



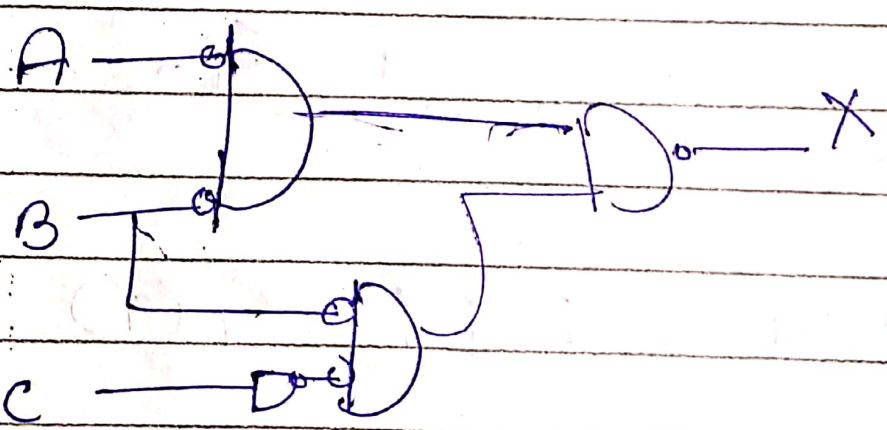
0 1 1 1 1 1 = Gray code.

Question No 1

Modifying circuit diagram from.



For active-low output.



Explanation: output would be low when A and B are low or when B and C is high.