Tutorial - 7

Q1 Consider a 3-variable function $f(x, y, z) = \sum(3, 5, 6)$. It is minimized as $x + yz$. What are the don't cares used in this minimization.

Q2 Consider the following K-MAP.

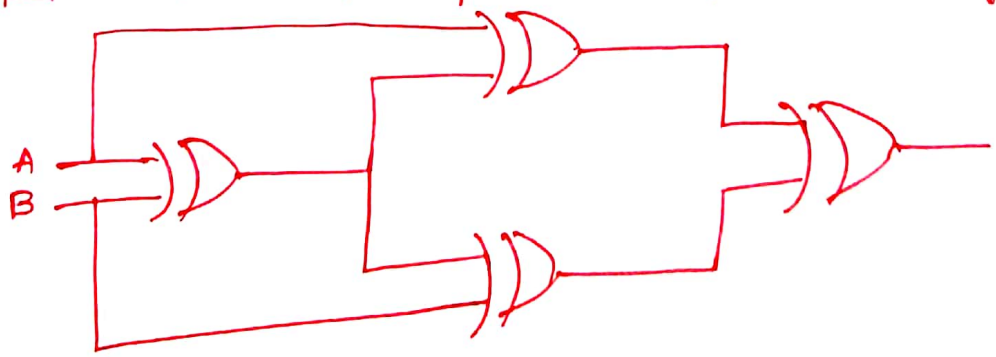
wx \ yz	00	01	11	10
00	1			1
01	1	1	1	1
11	1			1
10	1	1	1	1

Find all the minimal expression denoted by the above K-MAP.

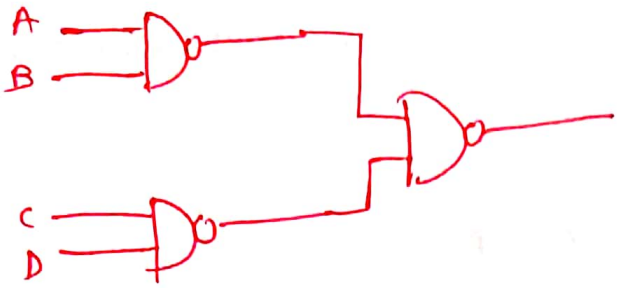
Q3 Let α, β, ν denotes don't cares. What will be their values in the minimization of sum of product expression.

wx \ yz	00	01	11	10
00	0	0	α	0
01	0	0	1	1
11	1	1	1	1
10	β	ν	0	0

Q4 What is the expression represented by following combination.



Q5/ What is the function represented by the following realization. (2)



Q6/ What is the value of α and β if the following expression is solved.

$$\begin{array}{r} (\alpha 567)_8 \\ +\ (2\beta\alpha 5)_8 \\ \hline (71\beta\alpha)_8 \end{array}$$

Q7/ Implement half adder using universal logic (i.e. NAND and NOR).