ASSIGNMENT 6(2)

lmadhuripagolu

December 2020

1 QUESTION

The boolean expression F(X,Y,Z)=$\overline{X}Y\overline{Z}+X\overline{Y}\overline{Z}+XY\overline{Z}+XYZ$ converted into the canonical product of sum(POS) form is
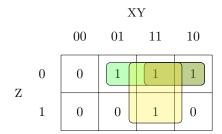
2 ANSWER

2.1 table

X	Y	Z	F	maxterms
0	0	0	0	X+Y+Z
0	0	1	0	X+Y+$\overline{Z}$
0	1	0	1	-
0	1	1	0	$X+\overline{Y}+\overline{Z}$
1	0	0	1	-
1	0	1	0	$\overline{X}+Y+\overline{Z}$
1	1	0	1	-
1	1	1	1	-

Table 1: truth table

product of sum =(X+Y+Z)(X+Y+$\overline{Z}$)(X+$\overline{Y}+\overline{Z}$))($\overline{X}+Y+\overline{Z}$)

2.2   k-map

XY

		00	01	11	10
Z	0	0	1	1	1
	1	0	0	1	0

from the k-map Product of Sum(POS)
for the question is F=$\overline{X}(\overline{Y} + Z)(\overline{X} + Z)$

2.3   logic gates

Z   Y   X