EC2014,25

dilip

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1 Question

Minimised expression for $(x + y)(x + \overline{y}) + \overline{(x\overline{y}) + \overline{x}}$

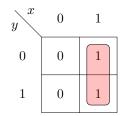(a) x

(b) y

(c) xy

(d) $x+y$

2 Answer

let,

$$F = (x + y)(x + \overline{y}) + \overline{(x\overline{y}) + \overline{x}} \tag{1}$$

2.1 Truth Table

x	y	F	Minterm
0	0	0	-
0	1	0	-
1	0	1	$x\overline{y}$
1	1	1	xy

Table 1: Truth table for F

3   K-Map

x y	0	1
0	0	1
1	0	1

From the k-map we can conclude that the simplified expression for F is

$$F = x \tag{2}$$