

Day: \_\_\_\_\_

Date: \_\_\_\_\_

## Assignment #02

Submitted by:

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Reg No :

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Section :

'B' Software Engineering

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# Question. No.1

Given the boolean function  $Q(a,b,c,d,e)$

represented in canonical form, where

$$Q(a,b,c,d,e) = \sum_m(0, 1, 2, 3, 9, 11, 17, 19, 23, 25, 29, 31) + d(4, 7, 13, 14, 21, 30)$$

Quads

solutions-

Quad 1

		$\bar{c}de$	$\bar{c}\bar{d}e$	$\bar{c}d\bar{e}$	$\bar{c}\bar{d}\bar{e}$	$c\bar{d}e$	$c\bar{d}\bar{e}$	$cd\bar{e}$	$cd\bar{d}e$
$a\bar{b}$	$\bar{b}$	000	001	011	010	100	101	111	110
$\bar{a}b\bar{0}0$	1	1	1	1	1	1	1	0	0
	4	5	7	6	20	21	23	22	
$\bar{a}b0\bar{1}$	X	0	X	0	0	X	1	0	
	12	13	15	14	28	29	31	30	
$a\bar{b}11$	0	X	0	X	0	1	1	X	
	8	9	11	10	24	25	27	26	
$\bar{a}\bar{b}10$	0	1	1	0	0	1	0	0	Quad 4

Quad 2

Quad 3

$$Q = \bar{a}\bar{b}\bar{e} + \bar{b}\bar{c}e + c\bar{d}e + b\bar{c}e$$

$$+ \bar{a}\bar{b}$$

## Question No2

Using the K-map provide,  
 Simplify the following  
 Boolean function based on the  
 variable A, B, C and D.

Sol:-

$AB \backslash CD$	00	01	11	10	
$\bar{A}\bar{B}$	0	0	X	0	
$\bar{A}B$	1	1	0	0	
$A\bar{B}$	1	0	0	1	
$A.B$	1	X	1	1	

$$F = B.C' + B.C.D' + A.D' + A'.B'$$