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CS302 Assignment No1 Spring 2023

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Question No 01

Marks (20)

Simplify the stated 5 Variable Boolean Expression using the Karnaugh Map method.

$$F(A, B, C, D, E) = \sum (1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31)$$

With the following Don't Care Conditions

$$F(A, B, C, D, E) = \sum (2, 6, 10, 14, 18, 22, 26, 30)$$

Solution:

Min term = 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31

Don't Care = 2, 6, 10, 14, 18, 22, 26, 30

A = 0

BC\DE	00	01	11	10
00	0	1	3	2
01	4	5	7	6
11	12	13	15	14
10	8	9	11	10

A = 1

BC\DE	00	01	11	10
00	16	17	19	18
01	20	21	23	22
11	28	29	31	30
10	24	25	27	26

A = 0

BC\DE	00	01	11	10
00	0	1	1	X
01	0	1	1	X
11	0	1	1	X
10	0	1	1	X

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$\oplus A = 1$

BC\DE	00	01	11	10
00	0	1	1	X
01	0	1	1	X
11	0	1	1	X
10	0	1	1	X

Position = 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31

Final Expression = E



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