

ASSIGNMENT NO. 5

MD UMAID SHAAN

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1 Boolean Expression For "e"

$$e = A.\overline{B}.\overline{C}.\overline{D} + A.B.\overline{C}.\overline{D} + \overline{A}.\overline{B}.C.\overline{D} + A.\overline{B}.C.\overline{D} + A.B.C.\overline{D} + A.\overline{B}.\overline{C}.D \quad (1)$$

2 K-Map For The Given Expression

| | | AB | | | |
|------|----|------|----|----|----|
| | | 00 | 01 | 11 | 10 |
| CD | 00 | 0 | 0 | 1 | 1 |
| | 01 | 0 | 0 | 0 | 1 |
| | 11 | X | X | X | X |
| | 10 | 1 | 0 | X | X |

Figure 1: K-Map for e using don't care condition

3 Simplified Expression

$$e = \overline{B}.A + A.\overline{D} + \overline{B}.C$$