

Md. Ishtiaq Ahamed Fahim
2012518642
Lab-5

Truth Table, Kmap:

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Title: De B A

Decimal	Input	output						
		a	b	c	d	e	f	g
0	0 0 0 0	1	1	1	1	1	1	0
1	0 0 0 1	0	1	1	0	0	0	0
2	0 0 1 0	1	1	0	1	1	0	1
3	0 0 1 1	1	1	1	1	0	0	1
4	0 1 0 0	0	1	1	0	0	1	1
5	0 1 1 1	1	0	1	1	0	1	1
6	0 1 0 0	1	0	1	1	1	1	1
7	0 1 1 1	1	1	1	0	0	0	0
8	1 0 0 0	1	1	1	1	1	1	1
9	1 0 1 1	1	1	1	1	0	1	1

Diagram of a 7-segment display with segments labeled a through g.

Digit patterns for 0-9:

```

  0 1 3 2
  4 5 7 6
  12 13 15 14
  8 9 11 10
  
```

(a) Kmap

De \ BA	00	01	11	10
00	1	0	1	1
01	0	1	1	1
11	X	X	X	X
10	1	1	X	X

Groupings: CA, D, C'A', B

(b) Kmap

De \ BA	00	01	11	10
00	1	1	1	1
01	1	0	1	0
11	X	X	X	X
10	1	1	X	X

(c) Kmap

De \ BA	00	01	11	10
00	1	0	1	1
01	1	1	1	1
11	X	X	X	X
10	1	1	X	X

Equations:

$$a = B + D + CA + C'A'$$

$$b = e' + B'A' + AB$$

$$c = e + D' + A'$$

(d) Kmap

De \ BA	00	01	11	10
00	1	0	1	1
01	0	1	0	1
11	X	X	X	X
10	1	1	X	X

(e) Kmap

De \ BA	00	01	11	10
00	1	0	0	1
01	0	0	0	1
11	X	X	X	X
10	1	0	X	X

Equation:

$$d = D + e'A' + BA' + eB'A + e = e'A' + BA' + e'B$$

TRIZON VET

① Kmap

De \ BA	00	01	11	10
00	1	0	0	0
01	1	1	0	1
11	X	X	X	X
10	1	1	X	X

$$f = D + C\bar{B} + \bar{A}C + B'A'$$

② Kmap

De \ BA	00	10	11	10
00	0	0	1	1
01	1	1	0	1
11	X	X	X	X
10	1	1	X	X

$$g = D + C\bar{B}' + BA' + B\bar{C}'$$

