

Truth table of Decimal to BCD encoder :-

Inputs										Outputs			
9	8	7	6	5	4	3	2	1	0	a	b	c	d
0	0	0	0	0	0	0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	0	0	0	0	0	0	1	0	0	0	0	1
0	0	0	0	0	0	0	1	0	0	0	0	0	1
0	0	0	0	0	0	1	0	0	0	0	0	1	0
0	0	0	0	0	1	0	0	0	0	0	0	1	1
0	0	0	0	1	0	0	0	0	0	0	0	1	0
0	0	0	1	0	0	0	0	0	0	0	1	1	0
0	0	1	0	0	0	0	0	0	0	0	0	1	1
0	1	0	0	0	0	0	0	0	0	1	0	0	0
1	0	0	0	0	0	0	0	0	0	1	0	0	1

~~books GCD of 10m1000 to oldest Hwy~~

Expression of a, b, c, d :-

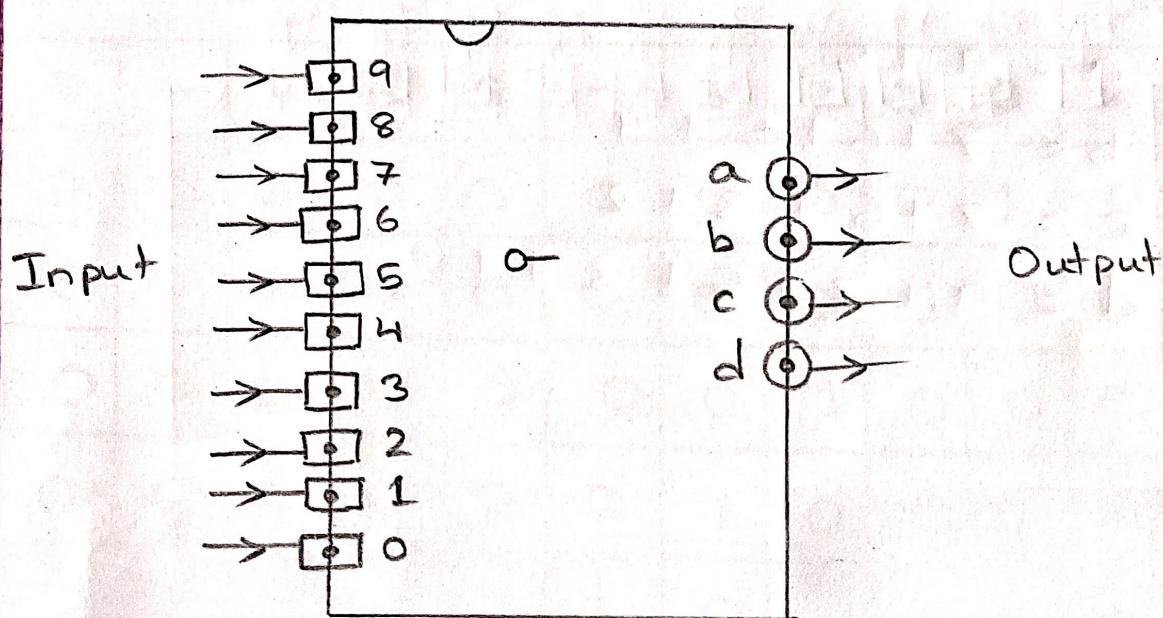
$$a = 9 + 8$$

$$b = 7 + 6 + 5 + 4$$

$$c = 7 + 6 + 3 + 2$$

$$d = 9 + 7 + 5 + 3 + 1$$

Block diagram of Decimal to BCD encoder



[a is MSB]