

Step-2

7 states, 3 bit shift registers (s_2, s_1, s_0)

3 bit shift registers (s_2, s_1, s_0)

3 bits for the next state (n_2, n_1, n_0)

a = input

x, y, z = output

Step-3 : Encoding states

	S_2	S_1	S_0
wait	0	0	0
C_1	0	0	1
C_2	0	1	0
C_3	0	1	1
C_4	1	0	0
C_5	1	0	1
C_6	1	1	0

	inputs				outputs					
	s2	s1	s0	a	x	y	z	n2	n1	n0
wait	0	0	0	0	0	0	0	0	0	0
	0	0	0	1	0	0	0	0	0	1
c1	0	0	1	0	0	1	1	0	0	1
	0	0	1	1	0	1	1	0	1	0
c2	0	1	0	0	1	1	1	0	1	0
	0	1	0	1	1	1	1	0	1	1
c3	0	1	1	0	0	1	0	0	1	1
	0	1	1	1	0	1	0	1	0	0
c4	1	0	0	0	0	0	1	1	0	0
	1	0	0	1	0	0	1	1	0	1
c5	1	0	1	0	1	0	1	1	0	1
	1	0	1	1	1	0	1	1	1	0
c6	1	1	0	0	1	0	0	1	1	0
	1	1	0	1	1	0	0	0	0	0
unused	1	1	1	0	0	0	0	0	0	0
	1	1	1	1	0	0	0	0	0	0

Step-5 =

$s_2 s_1 \backslash s_0$	00	01	11	10
00	0	0	0	0
01	1	1	0	0
11	1	1	0	0
10	0	0	1	1

$$x = s_1 s_0' + s_2 s_1' s_0'$$

$s_2 s_1 \backslash s_0$	00	01	11	10
00	0	0	1	1
01	1	1	1	1
11	0	0	0	0
10	0	0	0	0

$$y = s_2' s_1 + s_2' s_0$$

$$y = s_2' (s_1 + s_0)$$

$s_2 s_1 \backslash s_0$	00	01	11	10
00	0	0	1	1
01	1	1	0	0
11	0	0	0	0
10	1	1	1	1

$$z = s_2 s_1' + s_1' s_0 + s_2' s_1 s_0'$$

$$z = s_1' (s_2 + s_0) + s_2' s_1 s_0'$$

$s_2 s_1 a$	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	1	0	0	0
10	1	1	1	1

$$n_2 = s_2 s_1' + s_2 s_0' a' + s_2' s_1 s_0 a$$

$s_2 s_1 \backslash s_0 a$	00	01	11	10
00	0	0	1	0
01	1	1	0	1
11	1	0	0	0
10	0	0	1	0

$$n_1 = s_1 s_0' a' + s_2' s_1 s_0'$$

$$+ s_2' s_1 a' + s_1' s_0 a$$

$$n_1 = s_1 s_0' a' + s_1' s_0 a$$

$$+ s_2' s_1 (s_0' a)'$$

$s_2 s_1 \backslash s_0 a$	00	01	11	10
00	0	1	0	1
01	0	1	0	1
11	0	0	0	0
10	0	1	0	1

$$n_0 = s_2' s_0' a$$

$$+ s_2' s_0 a'$$

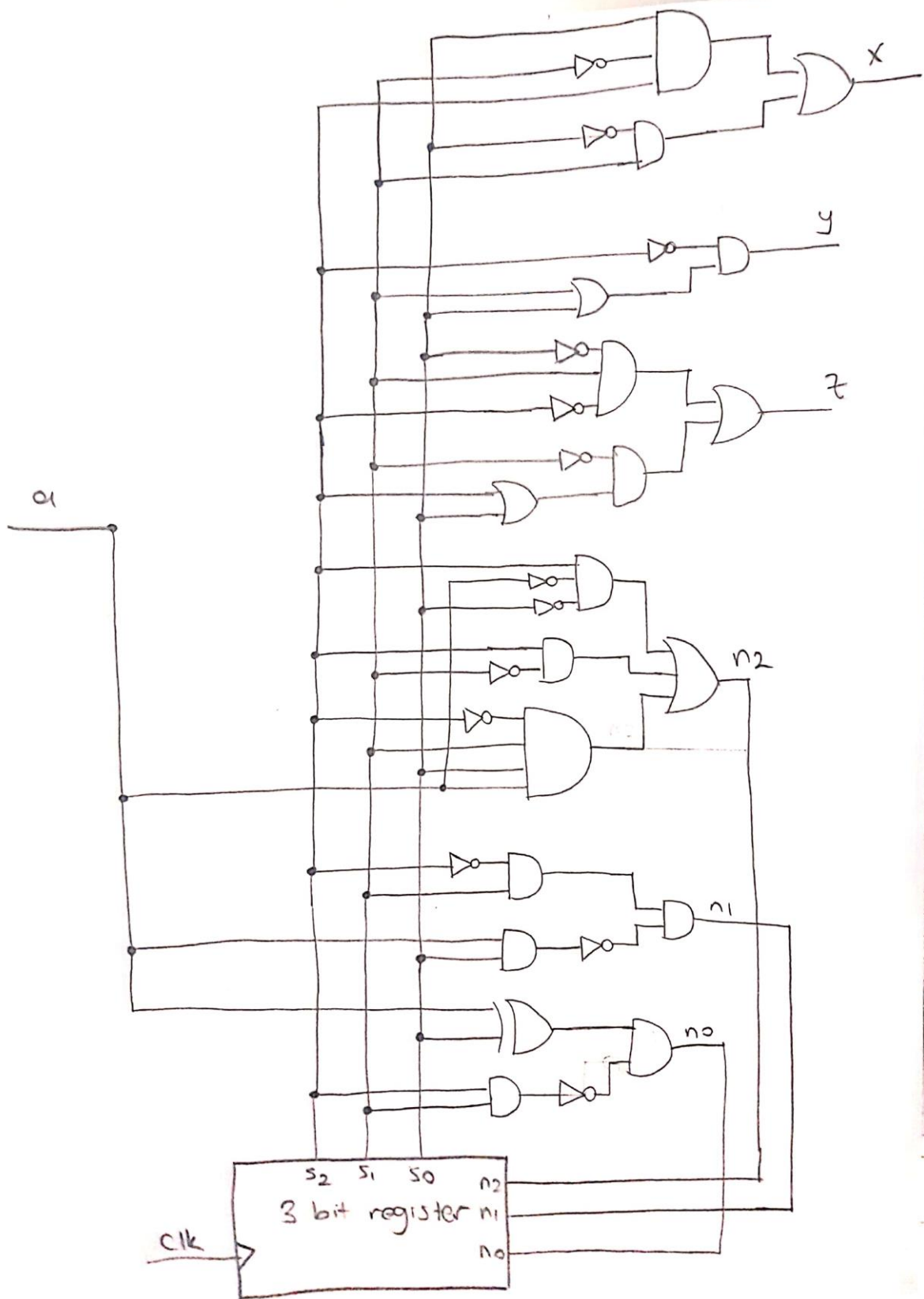
$$+ s_1' s_0' a + s_1' s_0 a'$$

$$n_0 = s_2' (s_0' a + s_0 a')$$

$$+ s_1' (s_0' a + s_0 a')$$

$$n_0 = (s_0' a + s_0 a') (s_1' + s_2')$$

$$n_0 = (s_0 \oplus a) (s_2 + s_1)'$$



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