19010108 S

(c) Tab form

P_2 P_1 P_0	X	N S	Y
0 0 0	0	0 0 0	0
0 0 0	1	0 0 1	1
0 0 1	X	0 1 0	1
0 1 0	X	0 1 1	1
0 1 1	X	1 0 0	1
1 0 0	X	1 0 1	1
1 0 1	0	0 0 0	1
1 0 1	1	1 1 0	1
1 1 0	0	0 0 0	0
1 1 0	1	1 1 0	0

(D)

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19010108S

Q.1 We are asked to design a [illegible]

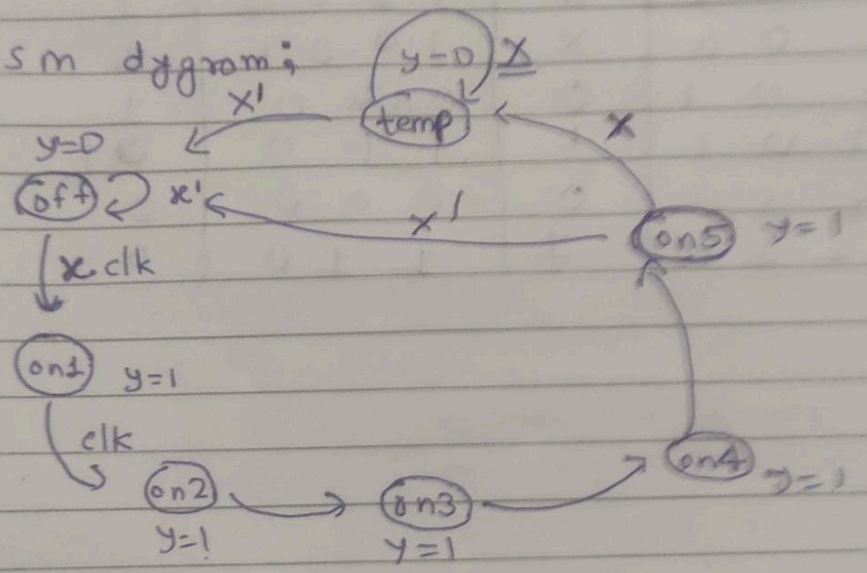
inputs => x

output => y

if x=0, return to start

if x=1, y should become 1 for five clocks and return to 0 after that.

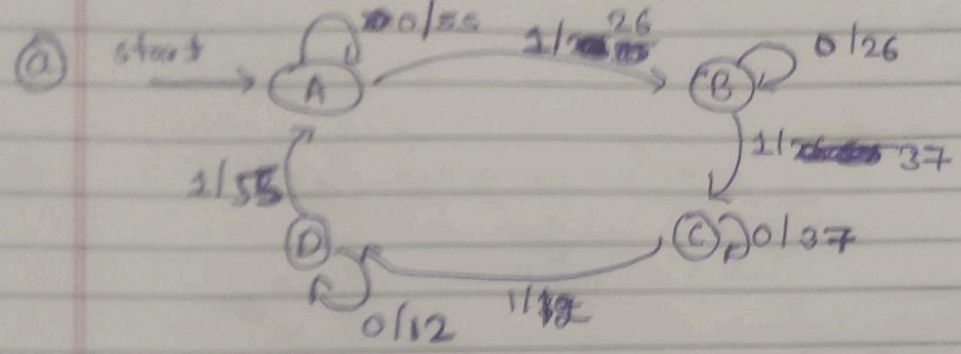
(a) FSM dygram:



(b) For verifying these properties:-

Q.6 We need to design a Mealy type FSM for counter which count 5, 26, 37, 12 & repeat if whenever X = 1, otherwise we need to hold the counter value to present state.

(a)



(b) We can state it like this :-

	P S	X	Y (output) P5 P4 P3 P2 P1 P0
A	0 0	0	1 0 1 0 1 1 1
B	0 1	0	0 1 1 0 1 0
C	1 0	0	0 0 0 1 0 1
D	1 1	0	0 0 1 1 0 0
	1 1	1	1 1 0 1 1 1
	0 0	1	0 1 1 0 1 0
	0 1	1	1 0 0 1 0 1
	1 0	1	0 0 1 1 0 0

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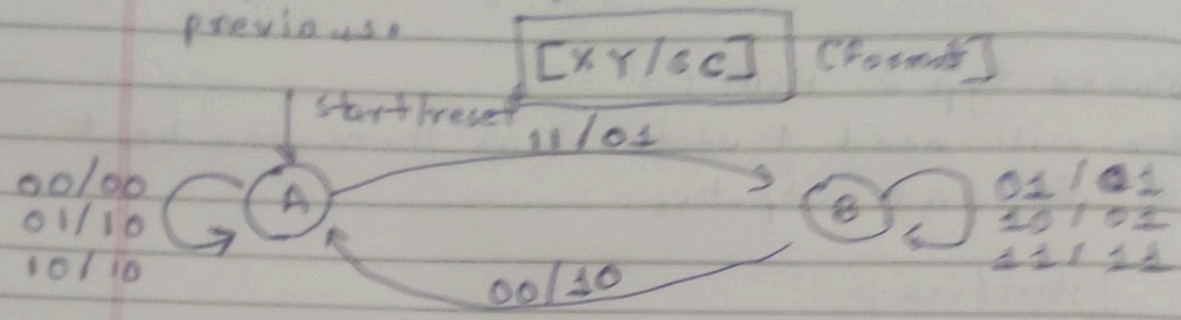
(iii) Melay Implementation :-
We need only two states for it.

⇒ input and output formats are same as previous.



Here ;
A state is when carry is 0.
B is when carry is 1.

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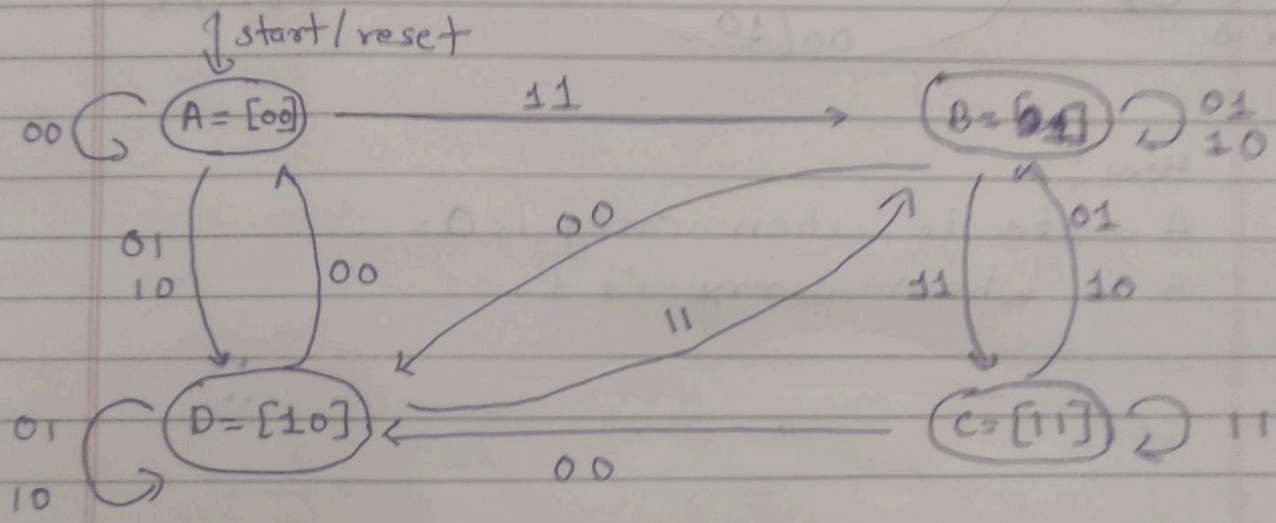
Q.4 Given :
X and Y → inputs
S and C → outputs
We need to draw melay & moore FSM for

(i) Moore type FSM :-
We will need 4 states as there can be 4 different outputs.



Input Format ⇒ {X, Y}
Output Format ⇒ [S, C]
at state A ⇒ [00]
B ⇒ [01]
C ⇒ [11]
D ⇒ [10]