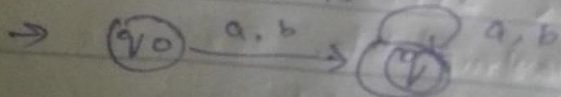


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Subject :- Compiler Construction
Semester :- 6th
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Date :- 22, 06 - 2020

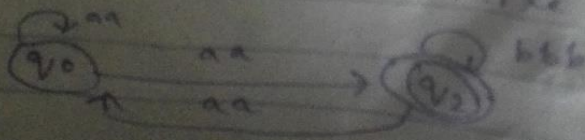
Q. (1) Build an FA accepting the language L of strings defined over $\Sigma = \{a, b\}$, beginning with and ending in same letters.

Ans (1) Beginning from and ending in same letters



Q. (2)

Ans: → An FA which has quadruple as or tuple



Q. (3)

(3)

Ans → Construct regular expression.

(i) All words having even length.

$$(a+b)(a+b)^*$$

(ii) All words having even length.

$$(a+b)^* a a (a+b)^* b b (a+b)^*$$

(iii) All words having at least double a or triple b.

$$(a+b)^* (a a + b b b) (a+b)^*$$

(iv) All words starts with double a or quadruple b.

$$a a + b b b (a+b)$$

Q. (4)

Ans

Mealy Machine:

(1) A Mealy machine generates an output based on its current state and output. So the state diagram will include both an input and output signal for each transition edge.

(2) The output change asynchronously with the enabling clock edge.

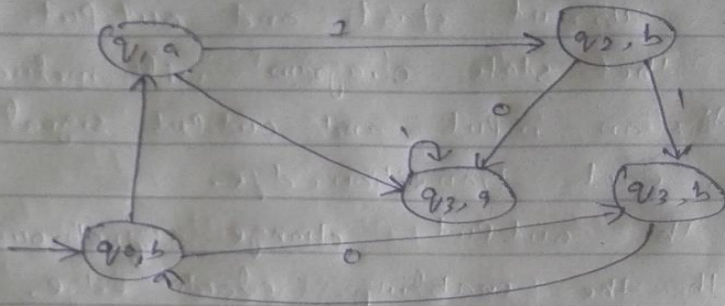
(3) A Mealy machine will have the same number of states than a Moore Machine.

→ Moore Machine:

(1) The output of Moore machine depends only on the machine current state, and transitions are not directly dependent upon inputs.

(2) The output change when the state changes and the state change is synchronous with the enabling clock edge, output change synchronously with this clock edge.

(3) A Moore machine can have more number of states than a mealy machine.



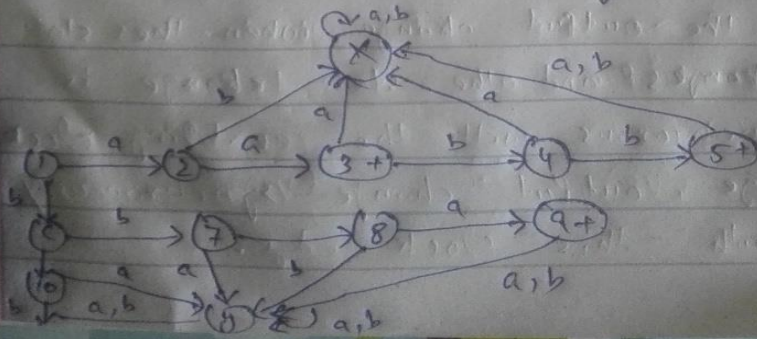
(Mealy to Moore conversion)

Q.: (6)

(6)

Ans → Transition Table for the given diagram.

(-) is the starting state and (+) is the ending state.



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→ Transition Table

	a	b
1-	2	6
2	3	X
3+	X	4
4	X	5
5+	X	X
6	10	7
7	y	8
8	9	y
9+	y	y
10	y	11
11+	y	y
X	X	X
y	y	y

End

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