



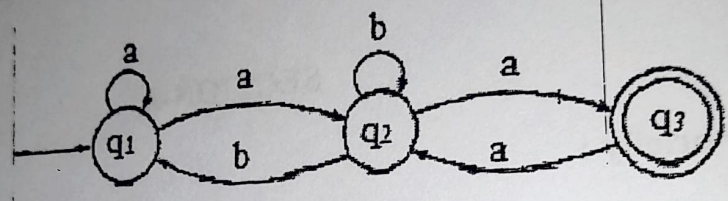


## SECTION-B

2. Construct a Moore machine equivalent to the Mealy machine M defined by following table:

Present State	Next State			
	a=0		a=1	
	state	output	state	output
→ q <sub>1</sub>	q <sub>1</sub>	1	q <sub>2</sub>	0
q <sub>2</sub>	q <sub>4</sub>	1	q <sub>4</sub>	1
q <sub>3</sub>	q <sub>2</sub>	1	q <sub>3</sub>	1
q <sub>4</sub>	q <sub>3</sub>	0	q <sub>1</sub>	1

3. Prove that string represented by following transition system is  $(a+ a(b+aa)^*b)^* a(b+aa)^*a$ .



4. What are the different types of Grammars and Languages associated with it?
5. Explain the concept of ambiguity with the help of example.
6. Describe any two representation of TM.

## SECTION-C

7. Design PDA for  $\{a^m b^n \mid m > n\}$
8. Find a grammar in GNF equivalent to the grammar  

$$E \rightarrow E + T \mid T \qquad T \rightarrow T * F \mid F \qquad F \rightarrow (E) \mid a$$
9. Write a note on Universal Turing Machines and Rice Theorem.

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