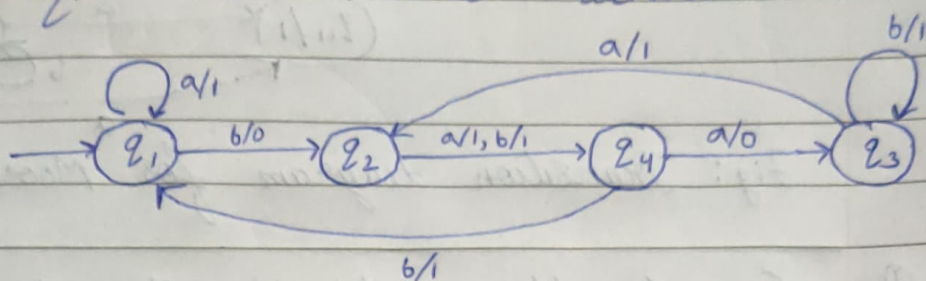# CS-501 Theory of Computation
Assignment - 2

Q1. Convert following Mealy machine to equivalent Moore machine.

Ans. Transition table for above mealy machine is as follows -

	Next State			
Present State	a		b	
	State	O/P	State	O/P
q_1	q_1	1	q_2	0
q_2	q_2	1	q_4	1
q_3	q_3	1	q_3	1
q_4	q_4	0	q_1	1

Transition table for Moore Machine :-

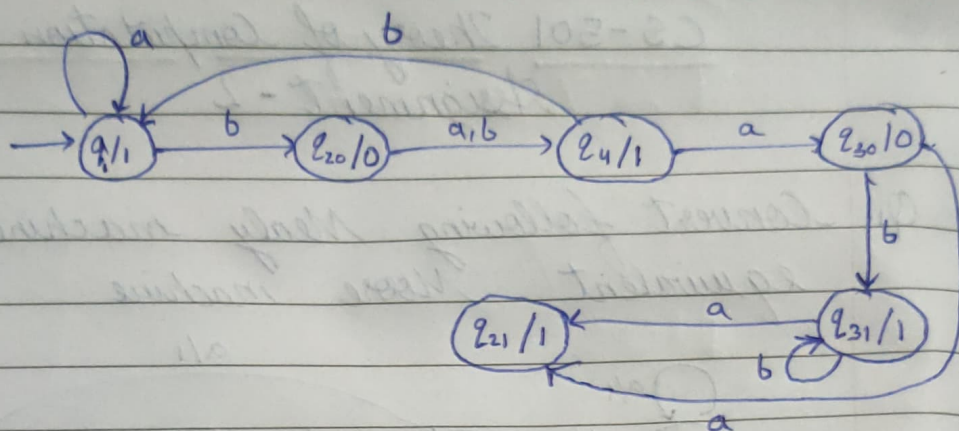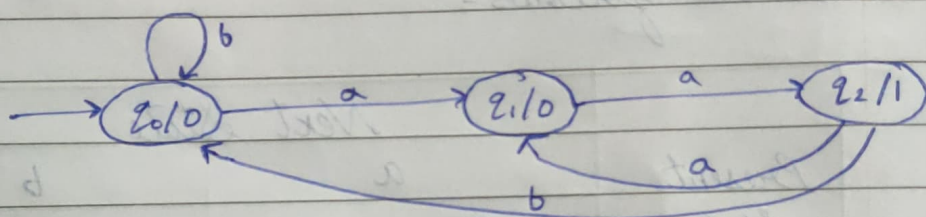|	Next State		Output
Present State	a = 0	a = 1	
q_1	q_1	q_2	1
q_{20}	q_4	q_4	0
q_{21}	ϕ	ϕ	1
q_{30}	q_{21}	q_{31}	0
q_{31}	q_{21}	q_{31}	1
q_4	q_3	q_4	1

Fig: Transition diagram for Moore Machine

Q2. Convert Moore Machine to Equivalent Mealy Machine.

Ans) Transition Table for above Moore Machine-

Present State	Next State		Output
	State	State	
q_0	q_1	q_0	0
q_1	q_1	q_2	0
q_2	q_1	q_0	1

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Transition table for Mealy Machine

Present State	Next State			
	a State	a Output	b State	b Output
q_0	q_1	0	q_2	0
q_1	q_1	0	q_2	1
q_2	q_1	0	q_0	0

Transition diagram for Mealy Machine