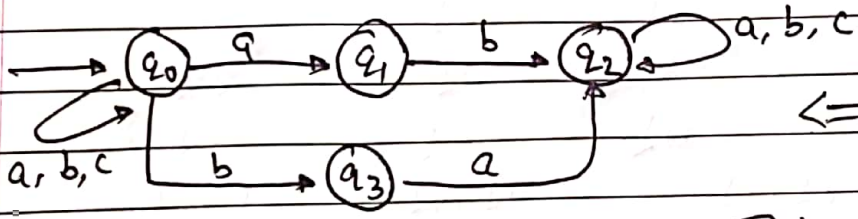
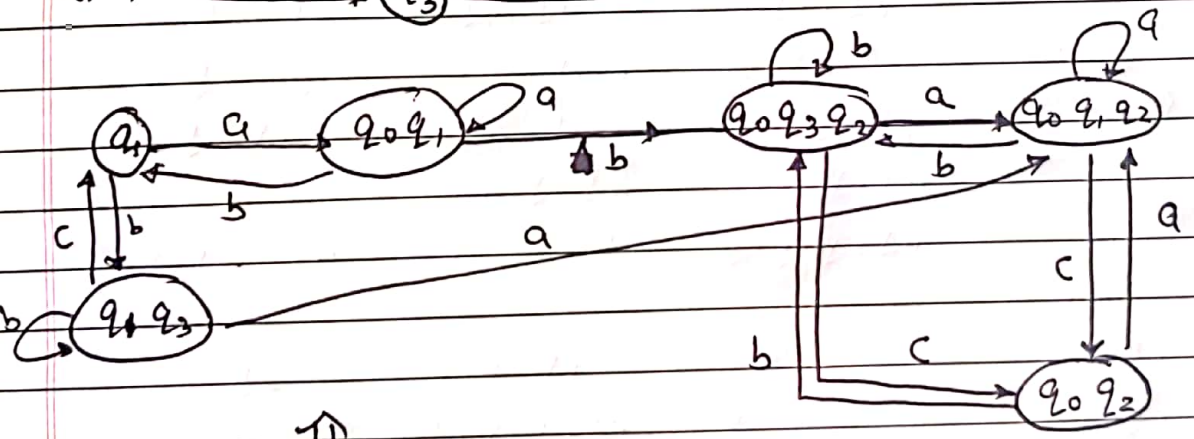
Devansh Shah B1
1914078 Tutorial 2

Q1)

	a	b	c
q_0	$q_0 q_1$	$q_0 q_3$	q_0
$q_0 q_1$	$q_0 q_1$	$q_0 q_2 q_3$	q_0
$q_0 q_3$	$q_0 q_1 q_2$	$q_0 q_3$	q_0
$q_0 q_2 q_3$	$q_0 q_1 q_2$	$q_0 q_3 q_2$	$q_0 q_2$
$q_0 q_1 q_2$	$q_0 q_1 q_2$	$q_0 q_3 q_2$	$q_0 q_2$
$q_0 q_2$	$q_0 q_1 q_2$	$q_0 q_3 q_2$	$q_0 q_2$



<= NFA



DFA

Ans 2) DFA states consist of sets of NFA states, an N-state NFA may be converted to a DFA with at most 2n states.

→ For every n, there exist n-state NFA such that every subset of states is reachable from the initial subset so that DFA has exactly 2^n states.

→ When converting an NFA with nn states to a DFA, you are going to have more states in a DFA then you did in the NFA but DFA has less than 2^n 2^n states.

→ There is no reject state in NFA as there is in DFA, hence decreasing the states.