Theory of Computation
Course Code: 10B11CI513
Tutorial-3

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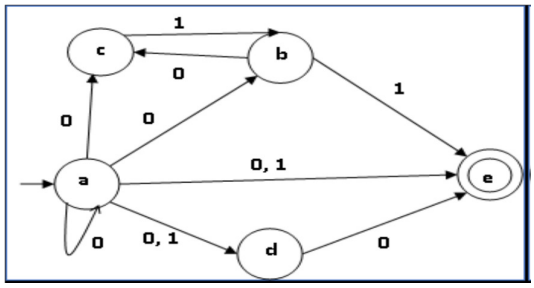
1. Find its equivalent DFA for the NDFA shown in the figure below.



2. Find the equivalent Mealy machine for the following Moore machine:

Present State	Next State		Output
	a = 0	a = 1	
→a	d	b	1
b	a	d	0
c	c	c	0
d	b	a	1

State table of a Moore Machine

3. Let us consider the following Mealy Machine, find its equivalent Moore machine.

Present State	Next State			
	a = 0		a = 1	
	Next State	Output	Next State	Output
→a	d	0	b	1
b	a	1	d	0
c	c	1	c	0
d	b	0	a	1

State table of a Mealy Machine

4. The one's complement of an input bit string is a string that has 1 wherever there was a 0, and a 0 wherever there was a 1; for example, the one's complement of 001 is 110. Construct a Mealy machine that computes the one's complement.

5. Construct a nondeterministic finite automaton accepting {ab, ba}, and use it to find a deterministic automaton accepting the same set.

6. Construct a nondeterministic finite automaton accepting {ab, ba}, and use it to find a deterministic automaton accepting the same set.