Theoretical Computer Science
Tutorial II

1) Determine an NFA accepting the language
   a) L1={x|x € {a,b,c}* and x contains the pattern abac}
   b) L2={a* U b*}
2) Determine NFA with three states that accepts language {ab, abc}*
3) Find the equivalent DFA from given NFA whose transition function is as follows.

	a	b
→ q0	{q0,q1}	-
q1	-	{q1,q2}
*q2	-	-

4) Consider following ε- NFA.

	ε	a	b	c
→ p	-	{p}	{q}	{r}
Q	{p}	{q}	{r}	-
*r	{q}	{r}	-	{p}

   a. Compute the ε-closure of each state.
   b. Give all the strings of length three or less accepted by the automaton.
   c. Convert the automaton to DFA.

5) Repeat above exercise for the following NFA.

	ε	a	b	c
→ p	{q , r}	-	{q}	{r}
Q	-	{p}	{r}	{p,q}
*r	-	-	-	-

6) Convert to DFA the following NFA
   a.

	0	1
→ p	{p,q}	{p}
q	{r}	{r}
r	{s}	-
*s	{s}	{s}

Advanced Learners Section

1) Find equivalent DFA from given NFA.

	0	1
→ p	{p,q}	{p}
q	{r,s}	{t}
r	{p,r}	{t}
*s	-	-
*t	-	-

2) Find equivalent DFA for given NFA