Department of Computer Engineering, SVNIT, Surat.
Automata and Formal Languages
Tutorial – 7

1 Explain different types of grammar with an example.

2 Convert following Context Free Grammar into Chomsky Normal Form:

S-->AACD

A-->aAb|ε

C-->aC|a

D-->aDa|bDb|ε

3 Construct a DFA for $\Sigma = \{0, 1\}$ that have an
   a) Set of all strings that start with 0
   b) Set of all strings of length 2

4 Construct a DFA for $\Sigma = \{a, b\}$ that does not contain the string aabb in it.

5 Construct a DFA for $\Sigma = \{a, b\}$ that accept a language of all strings containing ‘a’ in it.

6 Construct a DFA which accepts a language of all strings starting with ‘a’ and ending with ‘b’.

7 Construct a DFA which accepts a language of all strings not starting with ‘a’ or not ending with ‘b’.

8 Construct a DFA of all strings in which the 2nd symbol is '0' and 4th symbol is '1’.

9 Construct a DFA that accepts a language L over input alphabets ∑ = {a, b} such that L is the set of all strings starting with ‘aa’ or ‘bb’.

10 Give a DFA for Σ = {a, b} that accepts any string with ‘aababb’ as a substring