

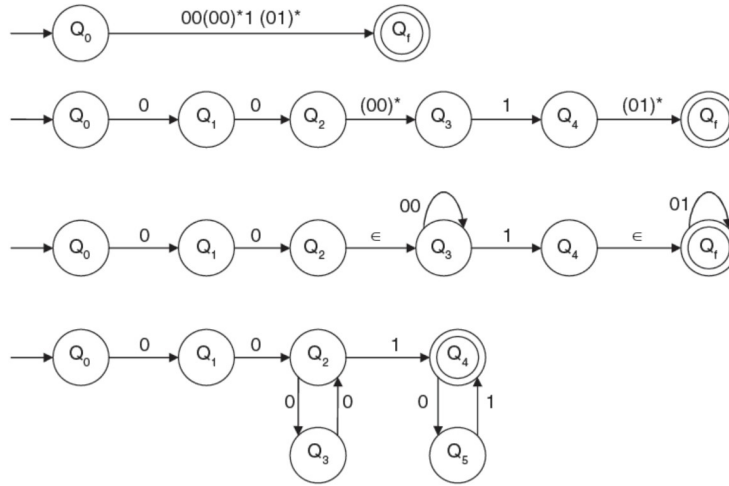
ii)  $A \rightarrow (00)^*00$   $S \rightarrow (01)^*S/1(00)^*00$

$S \rightarrow (01)^*1(00)^*00$

The regular expression is  $(01)^*1(00)^*00$ .

iii) Reversing the regular expression, we get  $00(00)^*1(01)^*$ .

iv) The finite automata constructed from the expression in step III is



v) The right linear grammar from the finite automata is

$$\begin{aligned} A &\rightarrow 0B \\ B &\rightarrow 0C \\ C &\rightarrow 0D \\ D &\rightarrow 0C \\ C &\rightarrow 0E/1 \\ E &\rightarrow 0F \\ F &\rightarrow 1E/1 \end{aligned}$$

This is the equivalent right linear grammar.

## 6.7 Normal Form

For a grammar, the RHS of a production can be any string of variables and terminals, i.e.,  $(VN \cup \Sigma)^*$ . A grammar is said to be in normal form when every production of the grammar has some specific form. That means, instead of allowing any member of  $(VN \cup \Sigma)$  on the RHS of the production, we permit only specific members on the RHS of the production. But these restrictions should not hamper the language generating power of the grammar.

When a grammar is made in normal form, every production of the grammar is converted in some specific form. These help us to design some algorithm to answer certain questions, such as if a CFG