Module 3

Question Bank

Q.1. Explain what do you mean by CFG and how to simplify CFG?

Q.2. Remove unit production from the following:

$S \rightarrow XY$

$X \rightarrow a$

$Y \rightarrow Z \mid b$

$Z \rightarrow M$

$M \rightarrow N$

$N \rightarrow a$

Q.3. Remove null production from the following:

$S \rightarrow ASA \mid aB \mid b$

$A \rightarrow B$

$B \rightarrow b \mid \epsilon$

Q.4. Convert the given grammar to CNF

$S \rightarrow aAD$

$A \rightarrow aB \mid bAB$

$B \rightarrow b$

$D \rightarrow d$

Q.5. Convert the given grammar to CNF

$S \rightarrow 1A \mid 0B$

$A \rightarrow 1AA \mid 0S \mid 0$

$B \rightarrow 0BB \mid 1S \mid 1$

Q.6. Remove useless production from the following:

S → aS | A | C

A → a

B → aa

C → aCb

Q. 7. Simplify the following grammar:

S → aA | aBB

A → aaA | ϵ

B → bB |bbC

C → B