TOC - Assignment - 6.

① Convert the CFG into CNF.

Ans $S \to ABC$.
$C \to BaB \mid c$
$B \to b \mid bb$
$A \to a$.

Here,
$S \to ABC$ Can be represented as
$S \to C_1 C$. which is in the form of CNF.
Hence, $C_1 \to AB$ which is also a CNF

$C \to BaB$. Can be written as
$C \to C_2 B$.
and
$C_2 \to Ba$. Can be written as
$C_2 \to BC_3$.
and
$C_3 \to a$. is also a CNF.
$C \to c$ is also a CNF.
$A \to a$ is also a CNF.

$B \to b$ is a CNF.

$B \to bb$. Can be written as
$B \to C_4 C_4$.
$C_4 \to b$.

Hence, CNF's are.

~~S → C₂B~~

S → C, c.

C₁ → AB.

C → C₂B

~~C → Bc~~.

C₂ → BC₃.

C₃ → a

C → c.

A → a.

B → b.

B → C₄C₄.

C₄ → b.