SARVAJANIK COLLEGE OF ENGINEERING AND TECHNOLOGY
COMPUTER ENGINEERING DEPARTMENT
Subject : Theory of Computation (TOC) (2160704)
Assignment – 1
(Topic : CFG)

Q:1   **Find CFGs generating each of the languages below over Σ = {a,b} :**

(A)   Even - Even Language

(B)   The set of odd-length strings with middle symbol "a".

(C)   The set of even-length strings with the two middle symbols equal.

(D)   The set of odd-length strings with same first, middle and last symbol.

(E)   Non - palindrome language

Q:2   **Describe the language generated by the following CFGs over Σ = {a,b} :**

(A) $S \rightarrow aT \mid bT \mid {}^\wedge$
$T \rightarrow aS \mid bS$

(B) $S \rightarrow SaS \mid b$

(C) $S \rightarrow aSa \mid bSb \mid aAb \mid bAa$
$A \rightarrow aA \mid bA \mid {}^\wedge$

Prepared By : Prof. Bintu Kadhiwala, Asst. Professor, CO Deptt., SCET, Surat