Assignment # 05

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Section: 5C

Question 1:-

let $a^n b^m a^n b^m$ be a context free grammar

So there exists x finite machines

Let $w = a^x b^n a^x b^n \quad \forall \; x \in n, m$

$w =$ a.... x times, b .... x times a ..... x times, b..... x times

u v

So $uvz = a^x b^x a^x b^x$

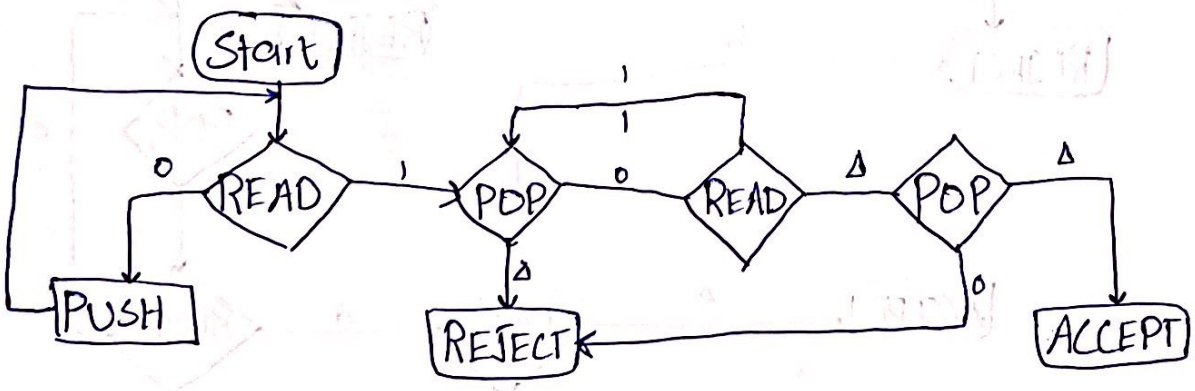
$uvvz = a^x b^x a^x b^x a^x b^x$

$= a^n b^m a^n b^m a^n b^m$

Heme $b^m a^m$ is two times more. This proves that L is non-context free grammer.

Q2:-

$0^n 1^n$. 0 0 0 1 1 1 Δ Δ

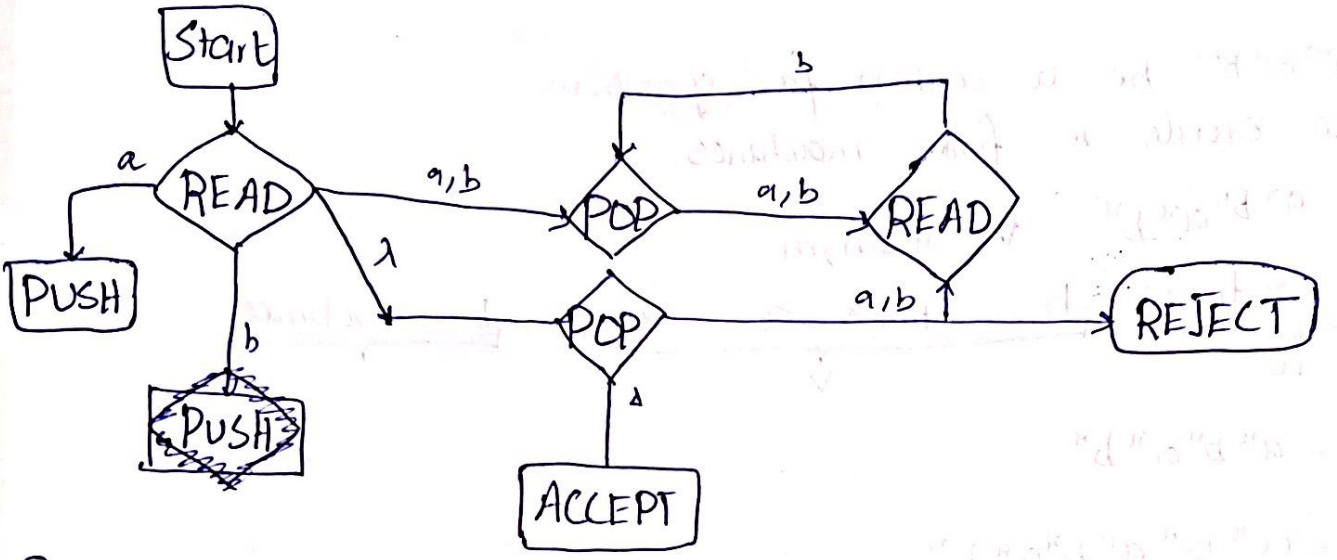


Question No 3:-

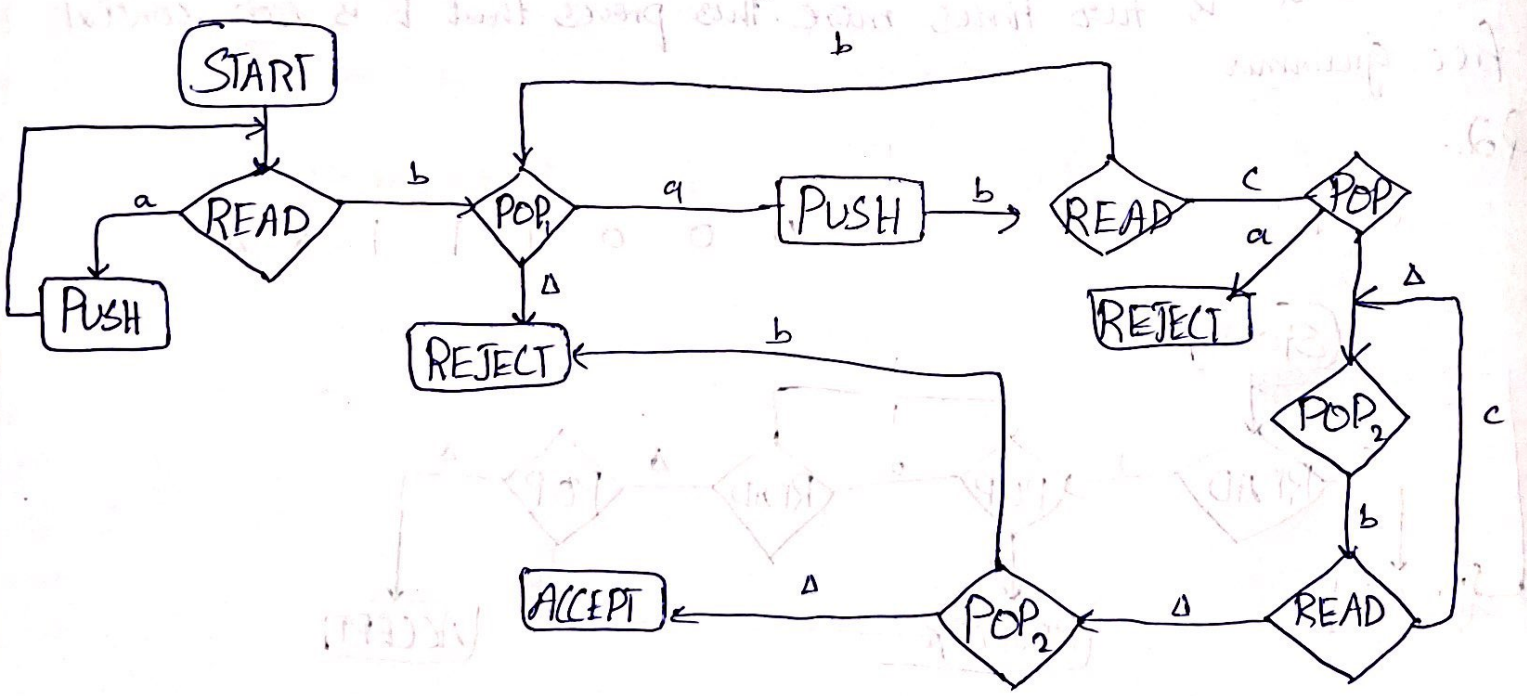
PDA accepts ODD palindrome

{ a, b, aba, bab, aaa, bbb ... }

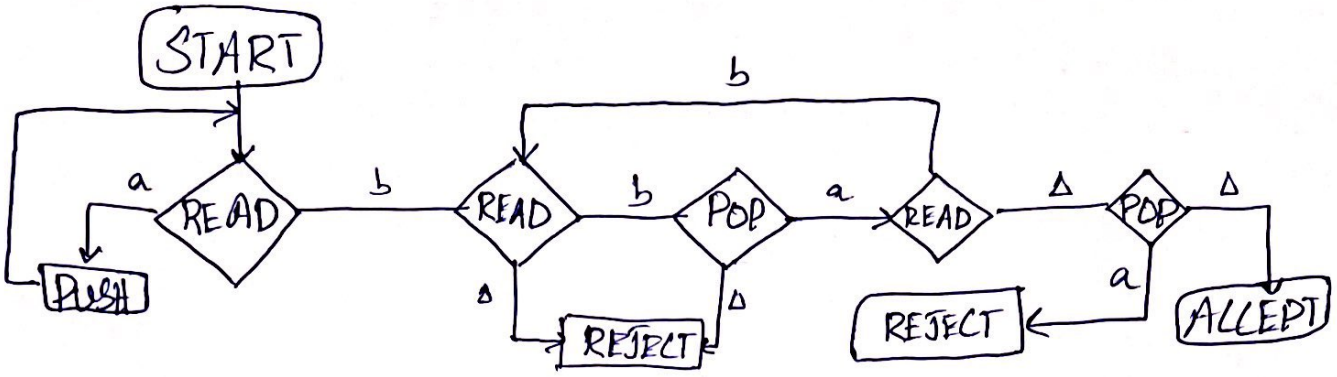
Question no: 4



Question 5:-



Question # 06



Question No: 7

$S \rightarrow aSb/ab$

1:-

CNF:-

$S \rightarrow T_a S T_b / T_a T_b$

$T_a \rightarrow a$

$T_a \rightarrow b$

$S \rightarrow T_a X / T_a T_b$

$T_a \rightarrow a$

$T_b \rightarrow b$

$X \rightarrow S T_b$