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Assignment-4

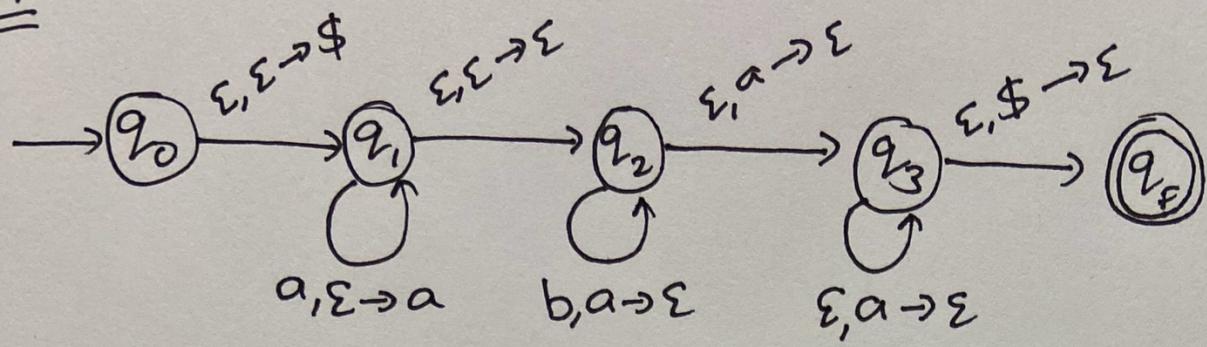
1. Find Push Down Automata and Context Free Grammars for each of the following languages. To find the PDA do not convert CFG to PDA. (20 points)

- $L = \{a^n b^m \mid n > m\}$

- $A = \{ 0^i 1^{i+1} \mid i \geq 0 \}$

Ans:

PDA

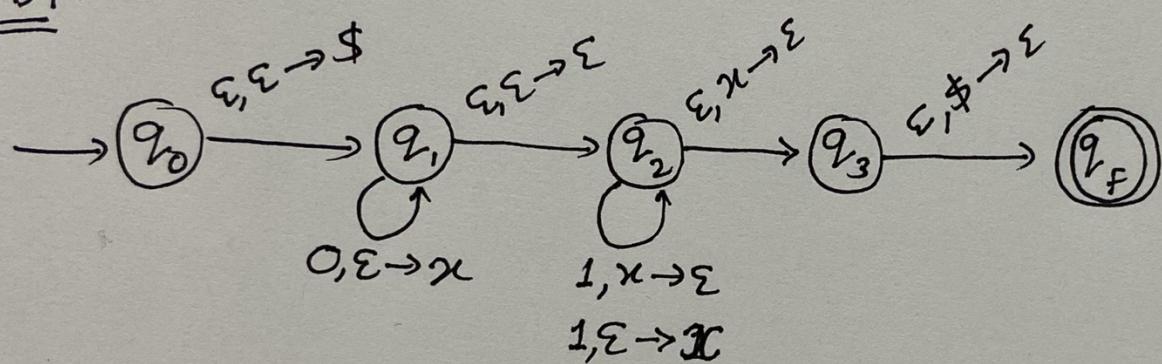


CFG

$$S \rightarrow aSb \mid aS \mid a$$

1b

PDA



CFG

$$S \rightarrow 0S1 \mid 1$$

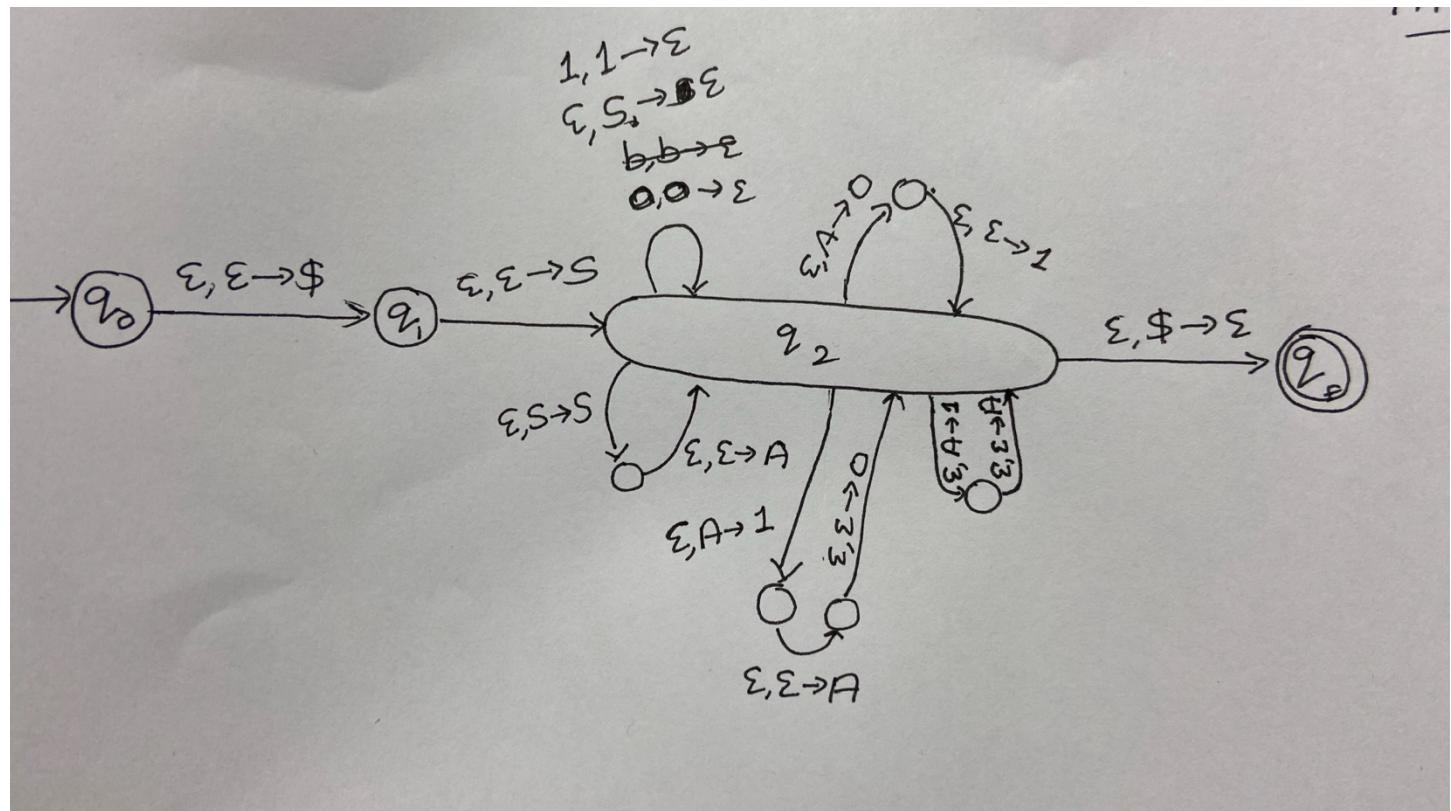
2. Convert the following Context Free Grammars to equivalent Push Down Automata.
 (10 points)

- $\begin{cases} S \rightarrow AS \mid \epsilon \\ A \rightarrow 0A1 \mid A1 \mid 01 \end{cases}$

- $\begin{cases} E \rightarrow E + T \mid T \\ T \rightarrow T \times F \mid F \\ F \rightarrow (E) \mid a \end{cases}$

Ans:

2a.



2b.

b)

