Assgn-6

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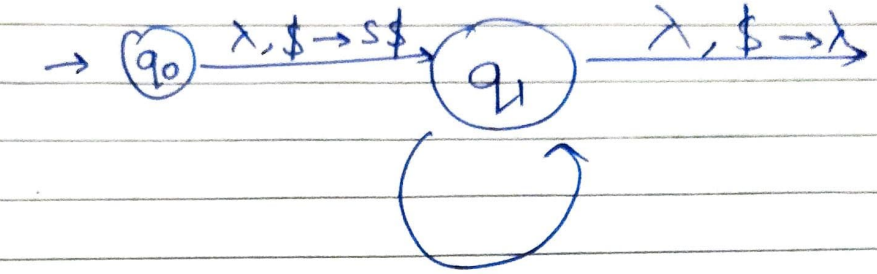
Q1

a)



λ, X → S

λ, X → 1X0

λ, S → X

λ, S → 0S1

1, 1 → λ

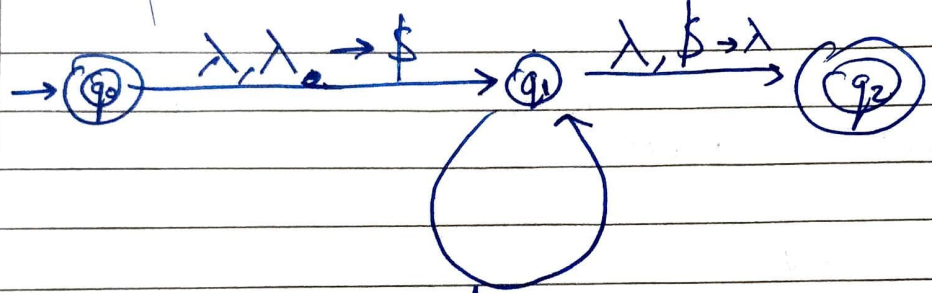
0, 0 → λ

Q8

a) $\{w \in \Sigma^* \mid w$ has equal no. of 0s & 1s$\}$

if input and TOS are same, push input

if input and TOS are different, pop stack

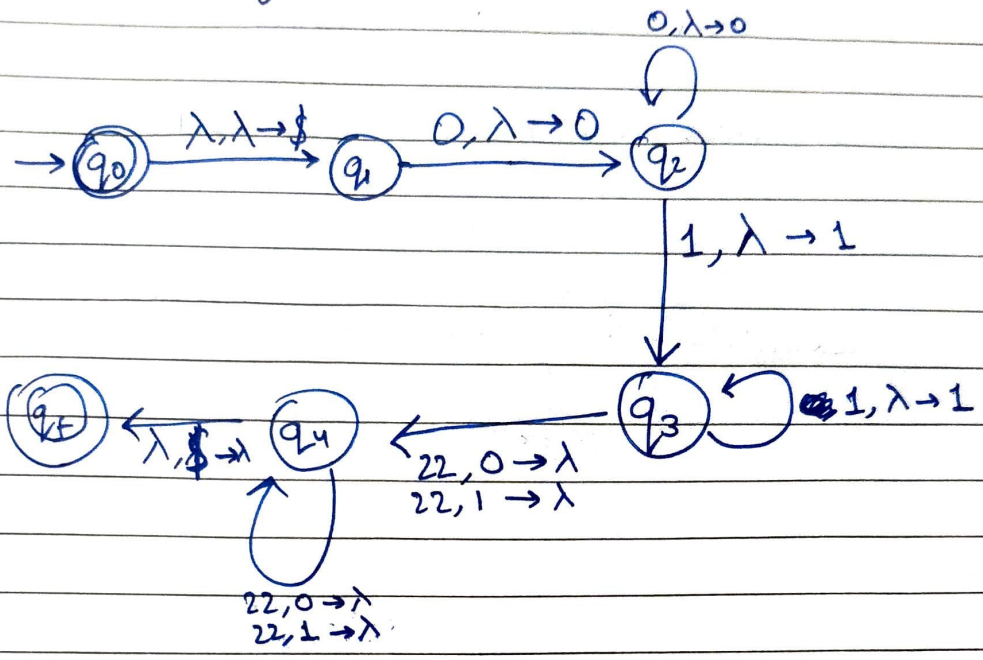


a, $ → a
a, a → a
b, $ → b
b, b → b
a, b → λ
b, a → λ

deterministic

b). Push all 0s and 1s in stack

For every 22 in input (two chars) pop one char from stack.

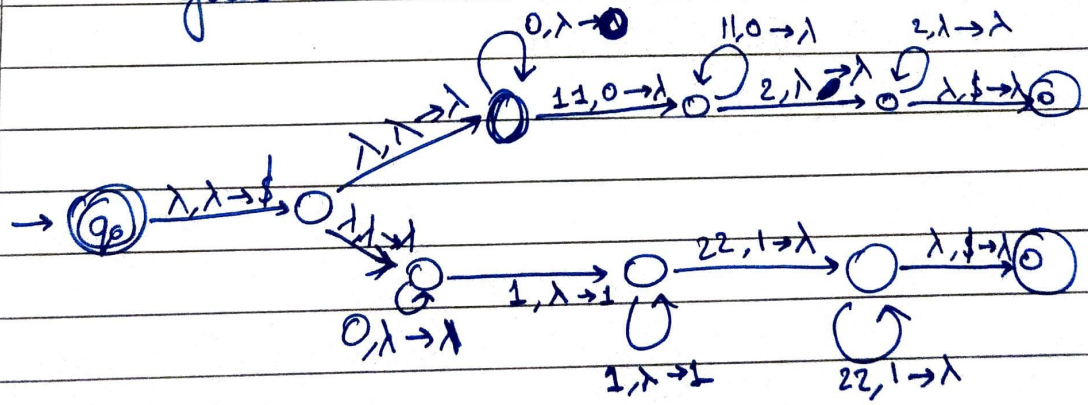


deterministic

c) ~~Push all 0's~~

make two guesses, one for $m=2n$ and one for $n=2p$.

Here non-determinism is necessary as guesses are involved



$n = 2p$

d) Non-determinism required as two conditions need to be satisfied.

for every a, push a or aa to the stack (non-determinism).

for every b, pop one element.