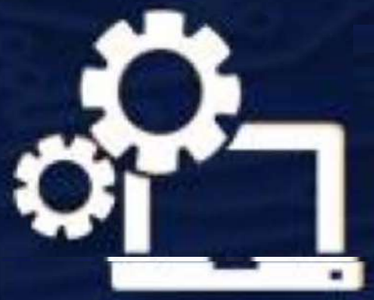
CS & IT ENGINEERING



Theory of Computation

Context Free Languages

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DPP - 02 Discussion Notes

01 Question

02 Discussion

Q.1

Which of the following is string accepting mechanism of PDA.

[MSQ]

A. PDA using final state.

B. PDA using empty stack.

C. PDA using both empty stack and final state.

D. PDA using transition state.

(a, b, c)

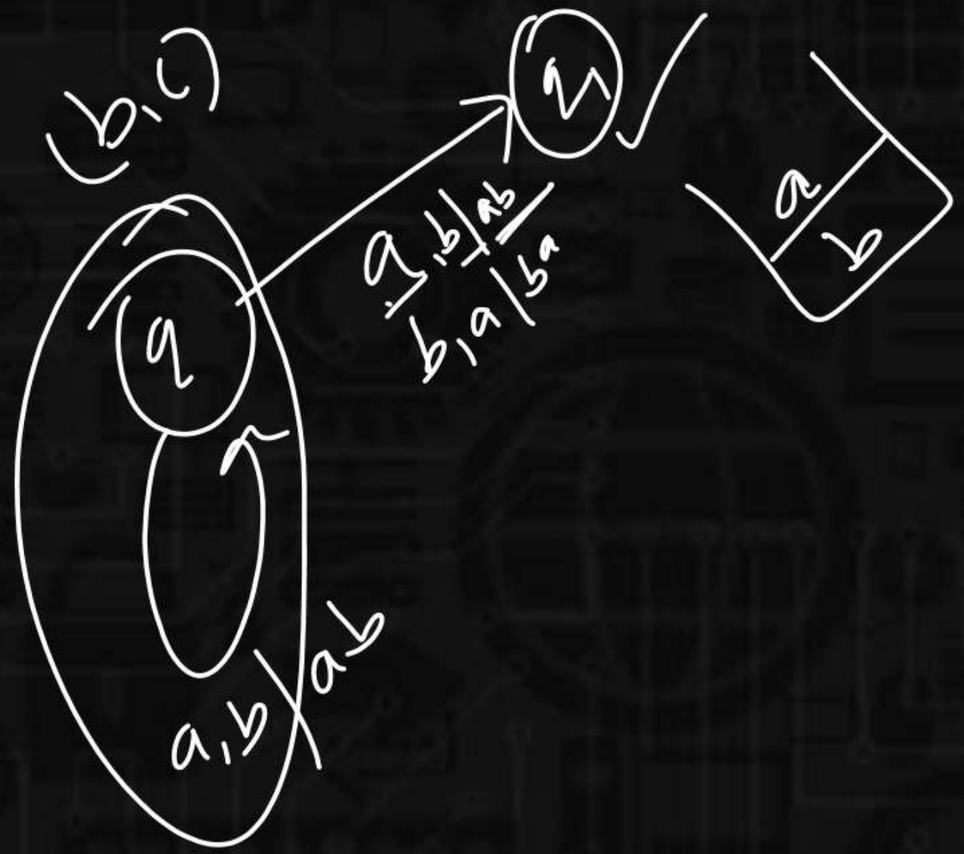
Q.2 Which of the following is correct push operation: **[MSQ]**

A. $\Sigma(q, a, b) = (q', ab)$

B. $\delta(q, a, b) = (q, ab)$

C. $\delta(q, a, b) = (q', ab)$

D. $\Sigma(q, a, b) = (q', \in)$



Q.3 [NAT]

Consider the following statements:

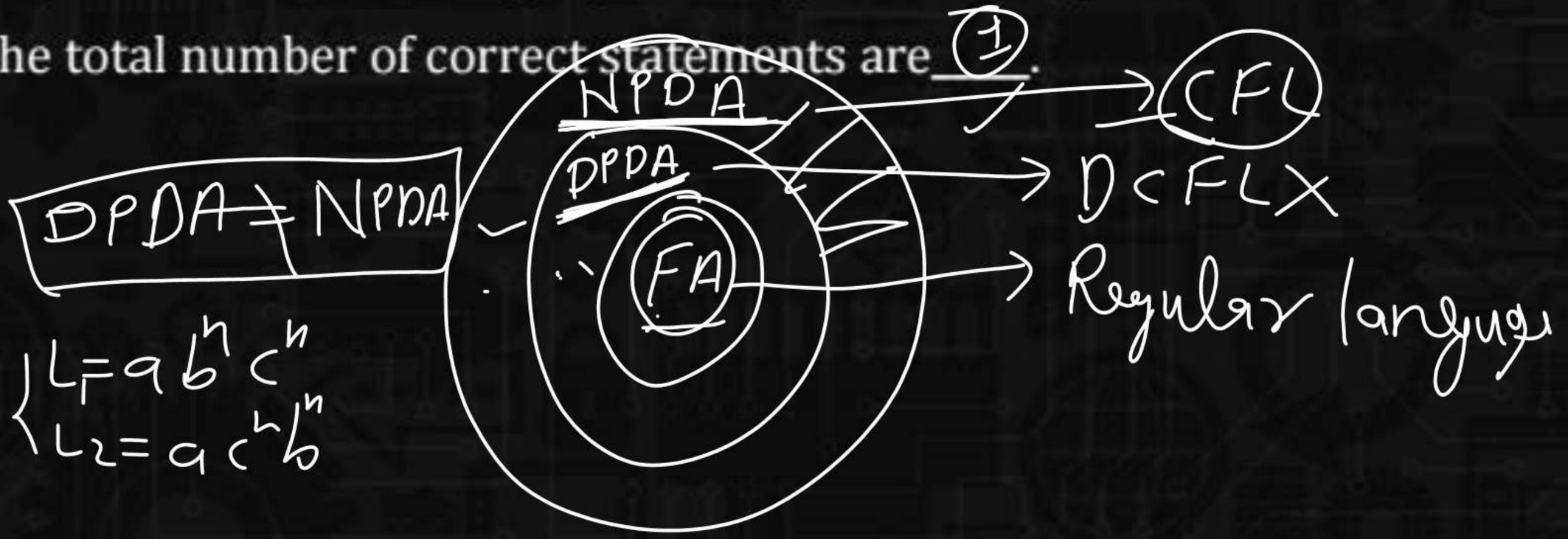
(I) All DPDA are NPDA.

(II) All NPDA are DPDA.

(III) All NPDA and DPDA are equivalent.

(IV) All context free language are regular language.

The total number of correct statements are 1.



Q.4

What does following transition means:

$\delta(q, \in, b) = (q, b)$

[MCQ]

A. Push b

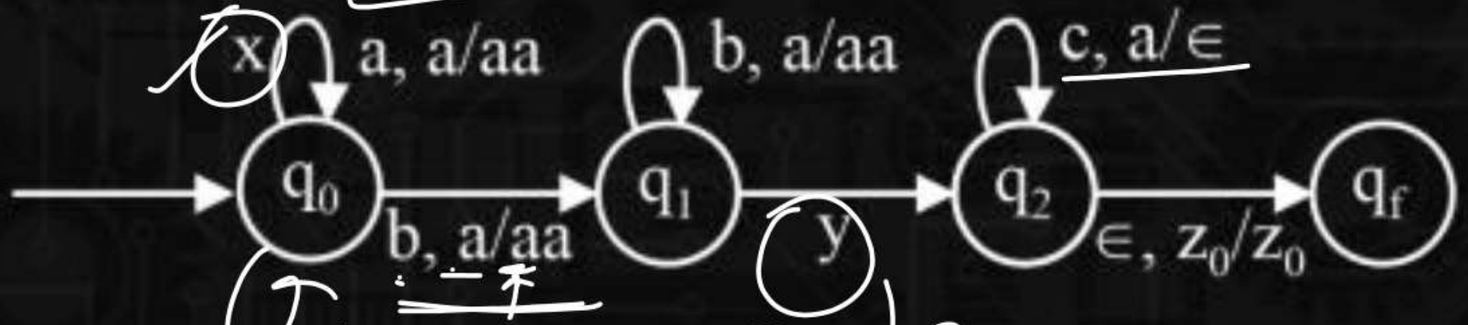
B. Pop b

C. Read b

D. No operation

Q.5 What are the values of x and y, if the language accepted by NPDA is $L = \{a^m b^n c^{(m+n)} \mid m, n \geq 1\}$.

[MCQ]



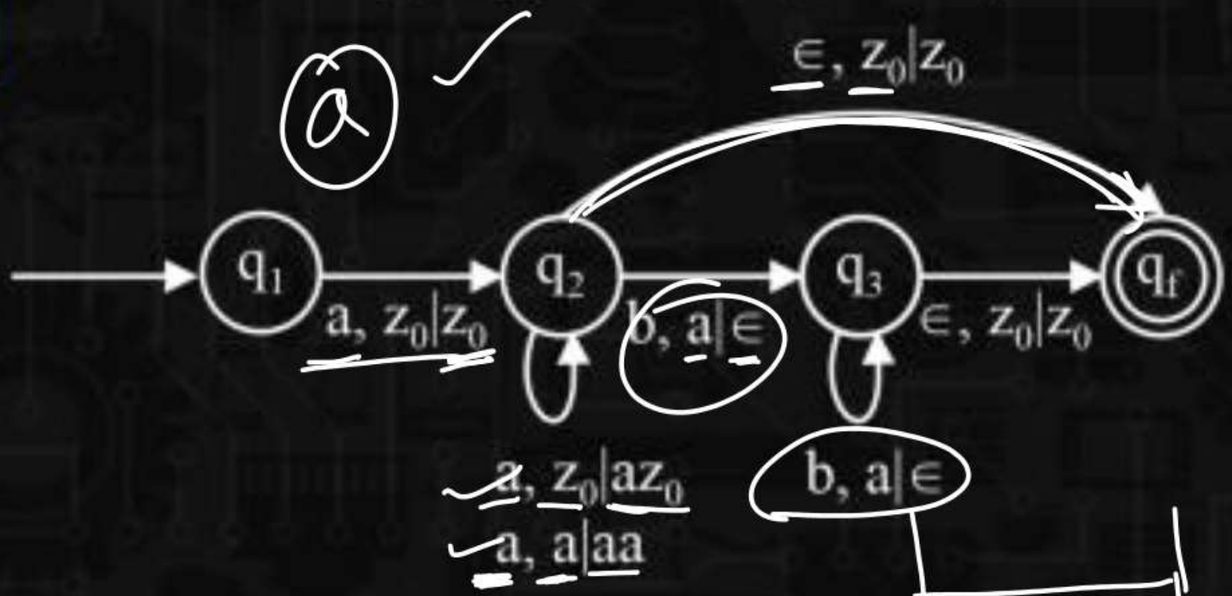
A. $x = \in, a/a$; $y = c, b/\in$

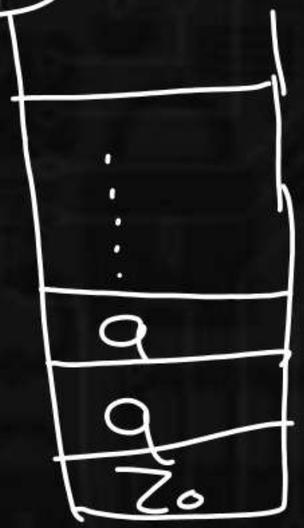
B. $x = a, z_0/z_0$; $y = c, b/c$

C. $x = a, a/aa$; $y = b, c/c$

D. $x = a, z_0/az_0$; $y = c, a/\in$

Q.6 Which language is accepted by the following PDA. [MCQ]





A. $L = \{a^n b^{n+1} \mid n \geq 1\}$

B. $L = \{a^{n+1} b^m \mid n, m \geq 1\}$

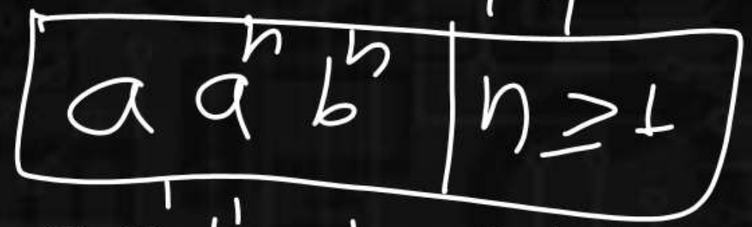
C. $L = \{a^{n+1} b^n \mid n \geq 0\}$

D. $L = \{a^n b^{n+1} \mid n \geq 0\}$

a a b

skip ↑ ↑

Push Pop



a a b

⇒ a a b

$\{a a^n b^n \mid n \geq 0\}$

$\{a^{n+1} b^n \mid n \geq 0\}$

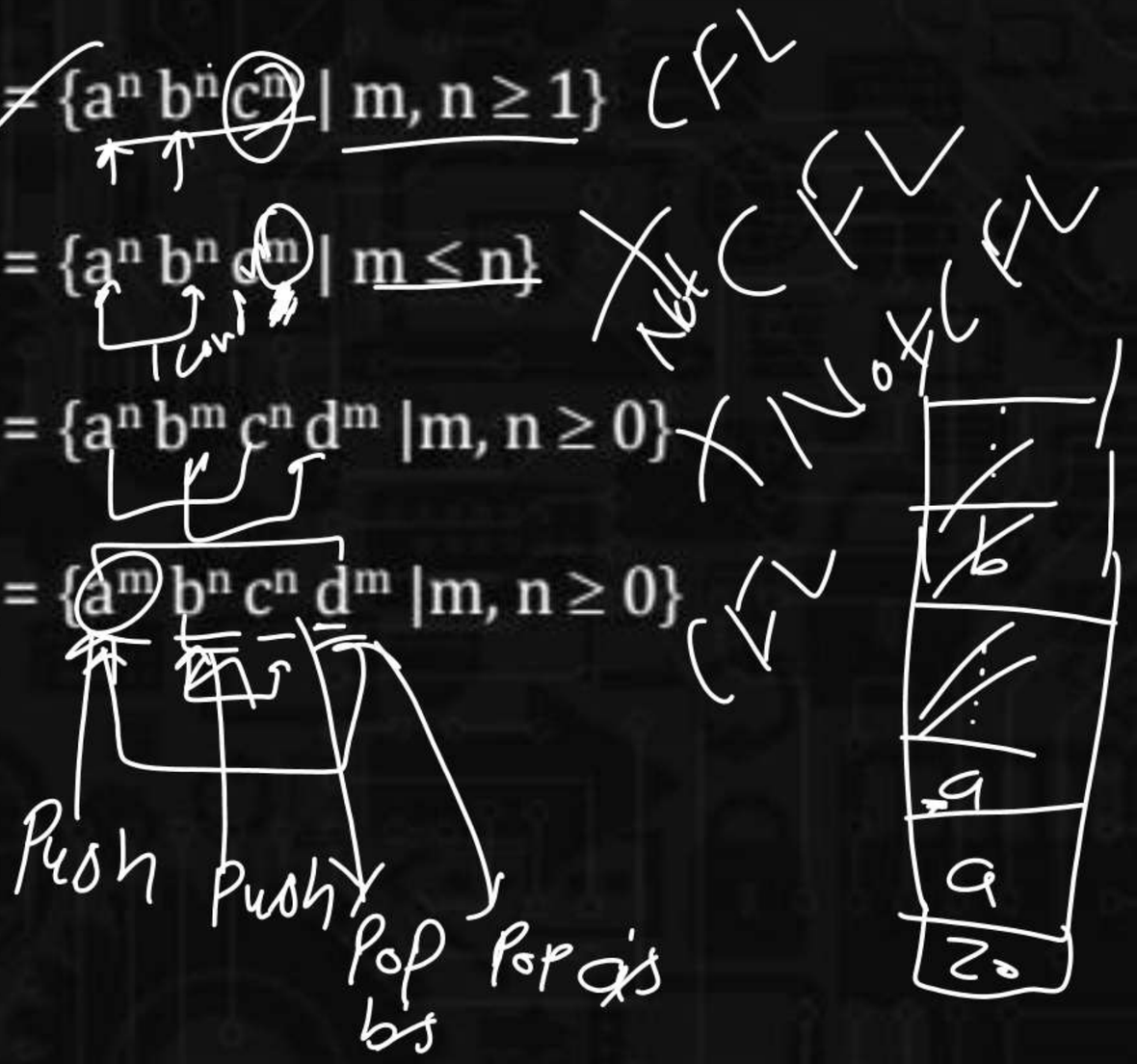
Q.7 Which of the following languages are accepted by PDA. [MSQ]

A. $L = \{a^n b^n c^m \mid m, n \geq 1\}$

B. $L = \{a^n b^n c^m \mid m \leq n\}$

C. $L = \{a^n b^m c^n d^m \mid m, n \geq 0\}$

D. $L = \{a^m b^n c^n d^m \mid m, n \geq 0\}$




THANK YOU GW
SOLDIERS !