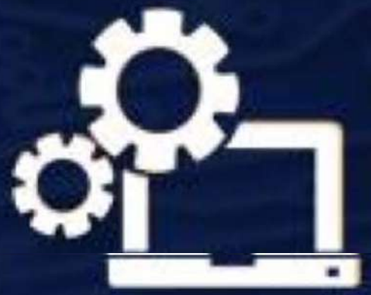
CS & IT ENGINEERING

Theory of Computation

Finite Automata



DPP 05 Discussion

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01 Question

02 Discussion

Q.1

Design deterministic finite automata of set of all binary strings over $\Sigma = \{0,1\}$, where every binary string starting with 00100. How many minimum numbers of states required for above FA?

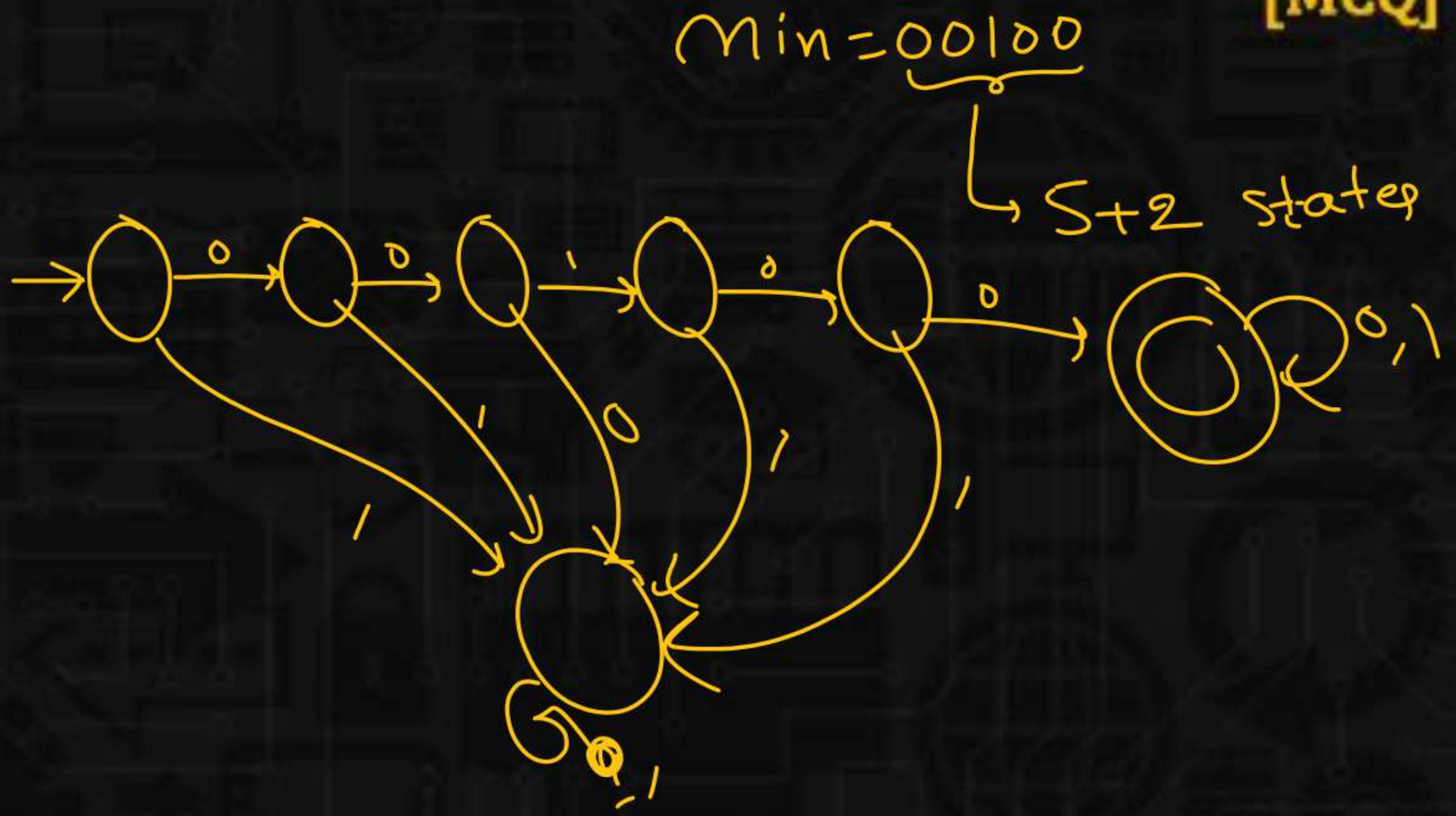
[MCQ]

A. 6

B. 5

C. 7

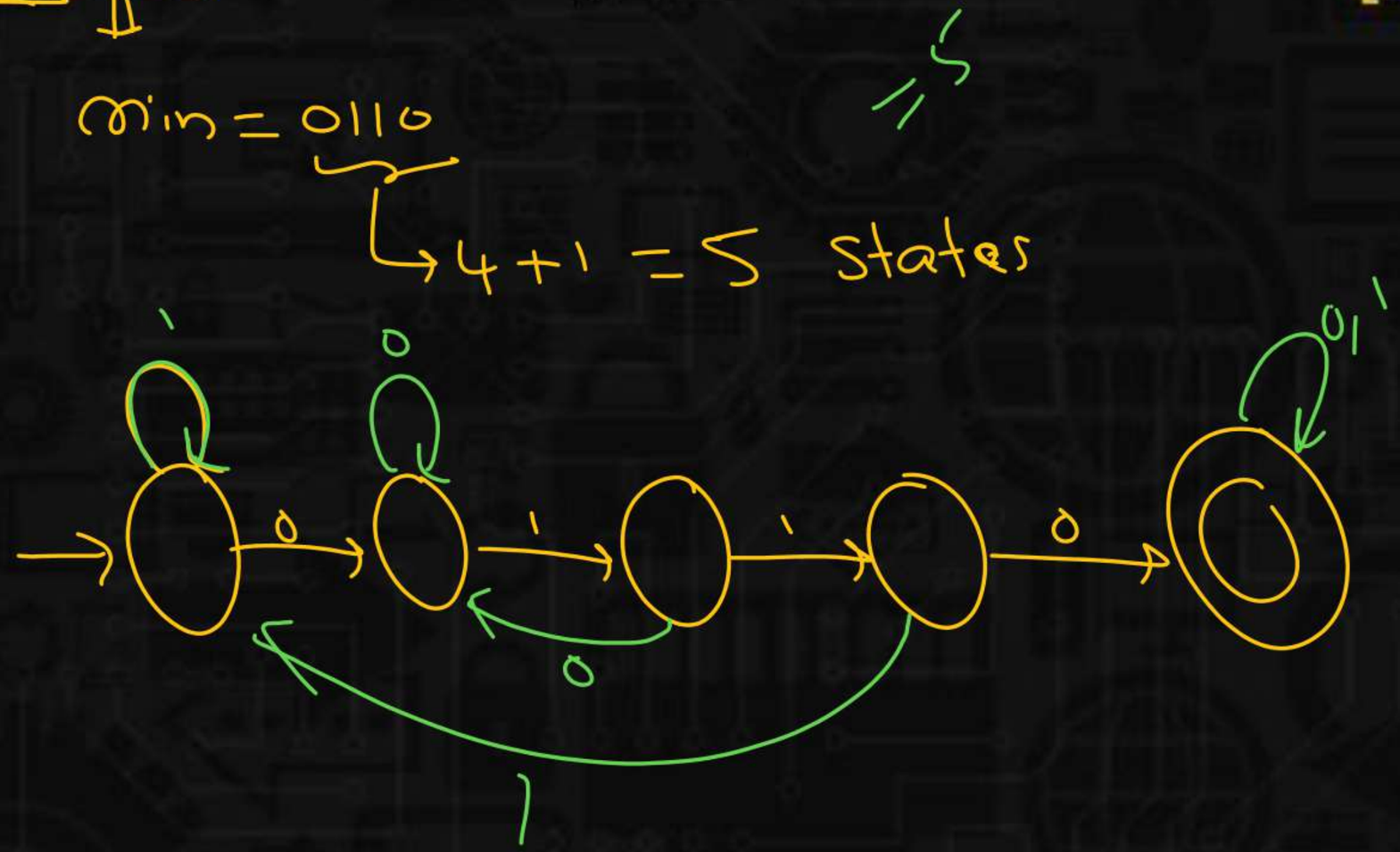
D. 4



Q.2

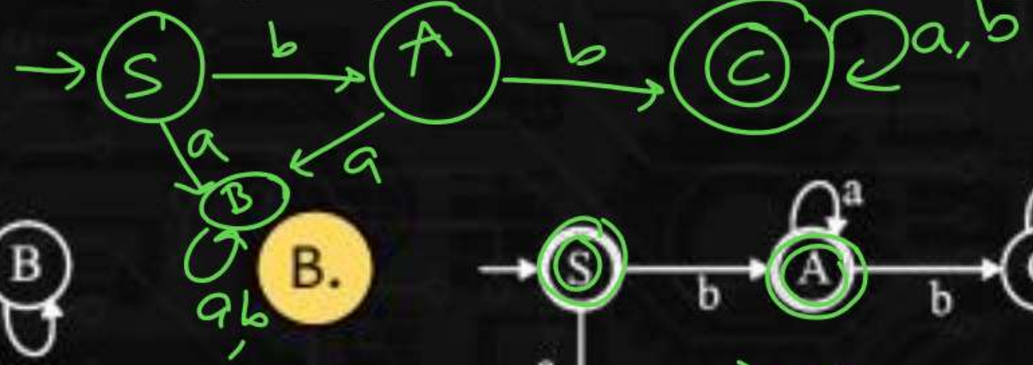
How many states are required to design a minimal DFA for set of all binary strings over $\Sigma = \{0, 1\}$ where every binary string containing 0110 as a substring? ___ .

[NAT]

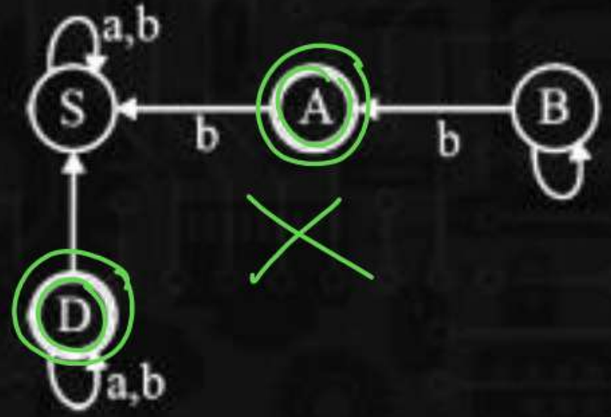


Q.3

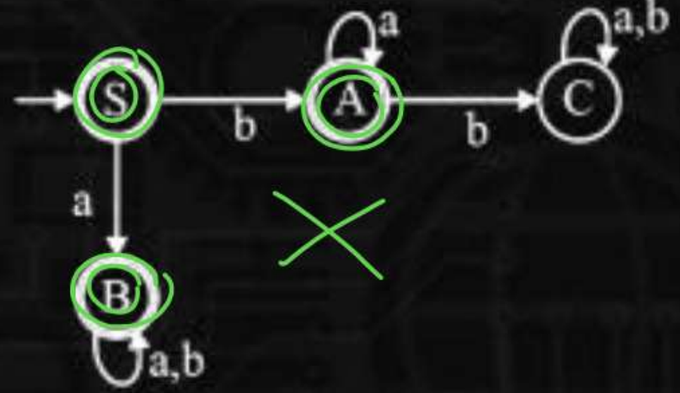
Which of the following is correct design of a minimal DFA for set of all strings over $\Sigma = \{a, b\}$ where every string does not start with bb? [MCQ]



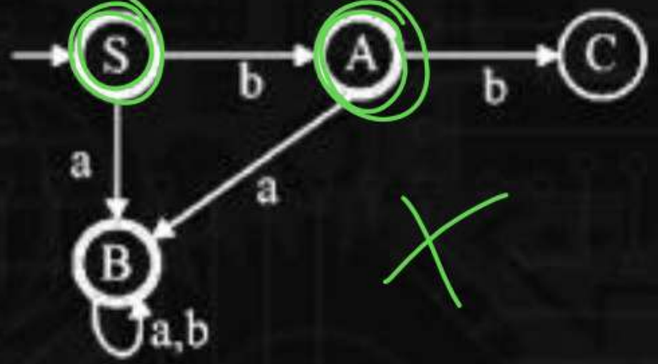
A.



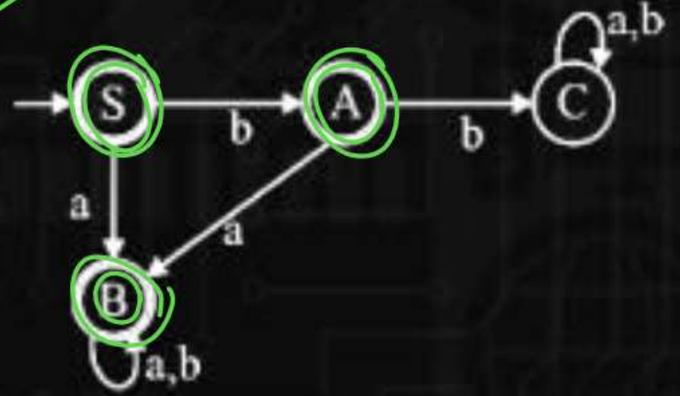
B.



C.



D.



Q.4

Which of the following statement is/are correct? [MSQ]

A. DFA is possible for every regular language.

B. DFA is also possible for some non-regular languages.

C. DFA is possible for both finite language and regular infinite language.

D. There exist only 1 unique DFA for every regular language.

Q.5 How many states required to design a minimal DFA for L = {X ba | X ∈ {a, b} *}? _____

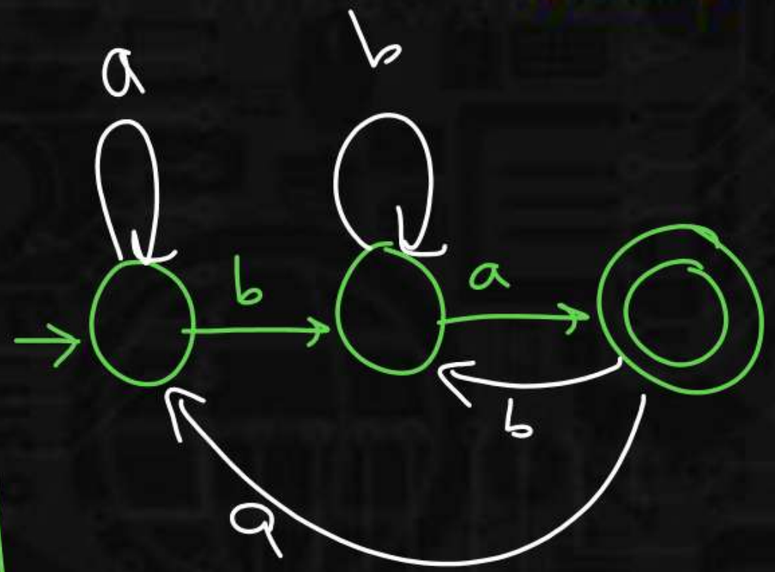
[NAT]

$(a+b)^* ba$

min = ba

→ 2+1

= 3 states

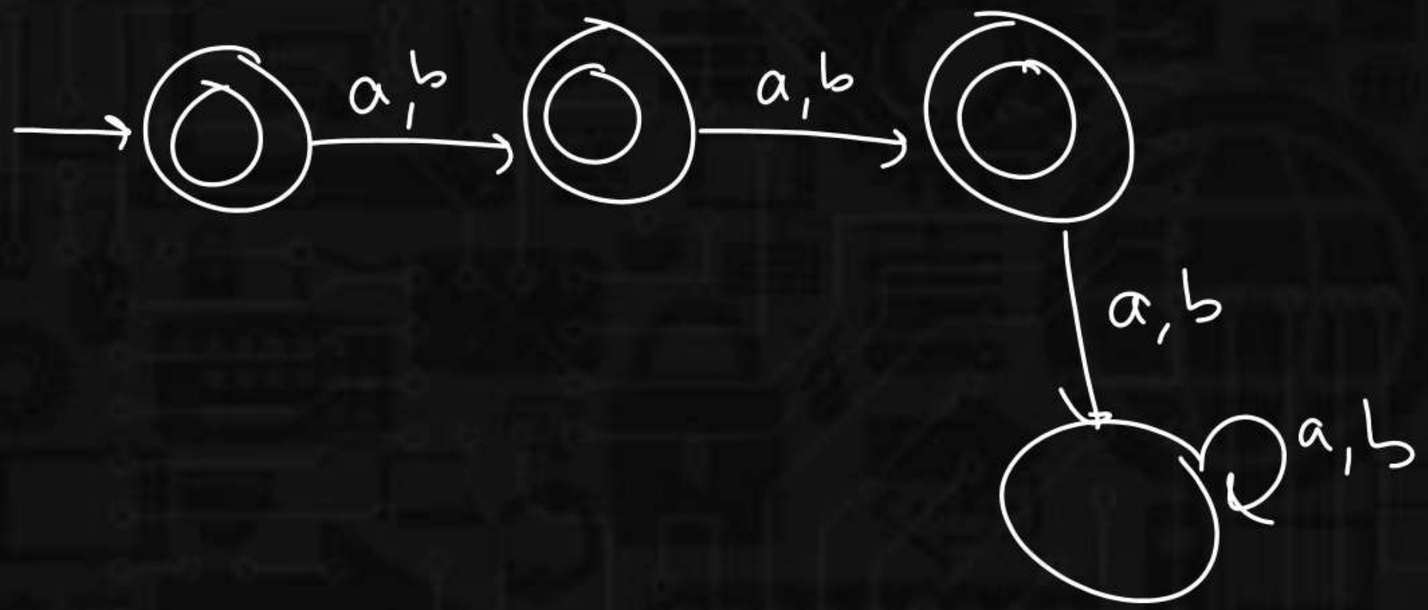


Q.6

Number of final states required to design a minimal DFA for L = $\{(\epsilon + b + a)^2 \mid \Sigma = \{a, b\}\}$ is / are ____. [NAT]

$= 3$ //

$\epsilon + a + b + aa + ab + ba + bb$




THANK YOU GW
SOLDIERS !