CS & IT ENGINEERING

Theory of Computation

Basics of Finite Automata

DPP 04 Discussion

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01 Question

02 Discussion

Q.1 Consider following two statements:

✓ **S_1:** Every DFA can be converted into equivalent NFA (By definition)

✗ **S_2:** NFA design is easy because NFA help us to write a program.

Which of the following is correct? **[MCQ]**

A. S_1 only.

B. S_2 only.

C. Both S_1 and S_2 are correct.

D. Both are incorrect.

Q.2

Which of the following statements is/are correct about finite automaton?

[MSQ]

A. Finite automata represent only finite language.

B. Finite automata represents only infinite language.

C. Transition function in NFA is $Q \times \sum \cup \{\in\} \rightarrow 2^Q$

D. Every regular language is finite.

Q.3

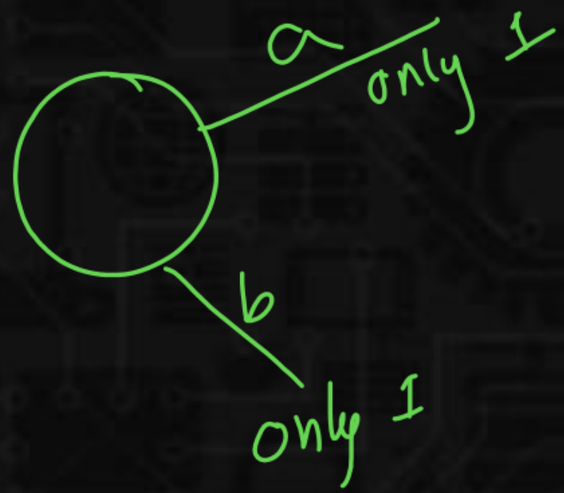
From each state, how many transitions are possible in DFA for each input symbol? [MCQ]

A. Exactly 1

B. At least 1

C. Exactly 2

D. Al least 2



Q.4

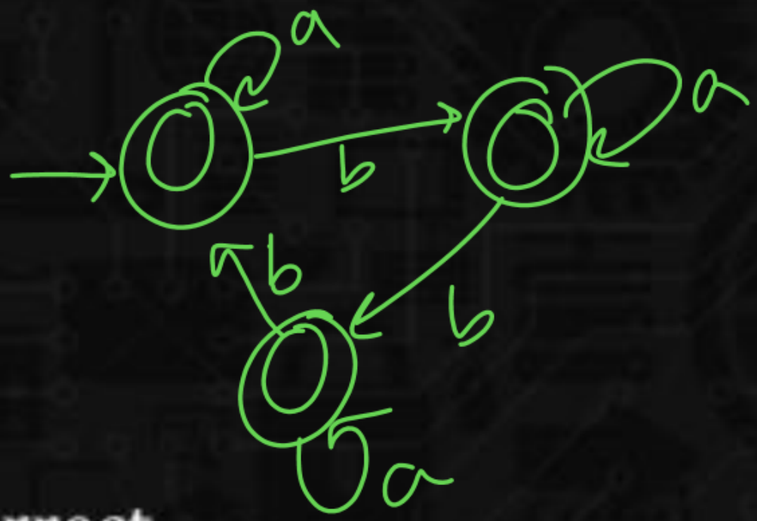
Consider following two statements:

S_1: If every state is final state in DFA, then L(DFA) = Σ^*

S_2: If every state is non-final state in DFA, then L(DFA) = {$\in$}

correct

wrong [MCQ]



L(DFA) = { }
= ϕ

A. S_1 only.

B. S_2 only.

C. Both S_1 and S_2 are correct.

D. Both are incorrect.

Q.5 For L = $\{(a + b)^2\}$, how many states are required in minimal DFA? **[MCQ]**

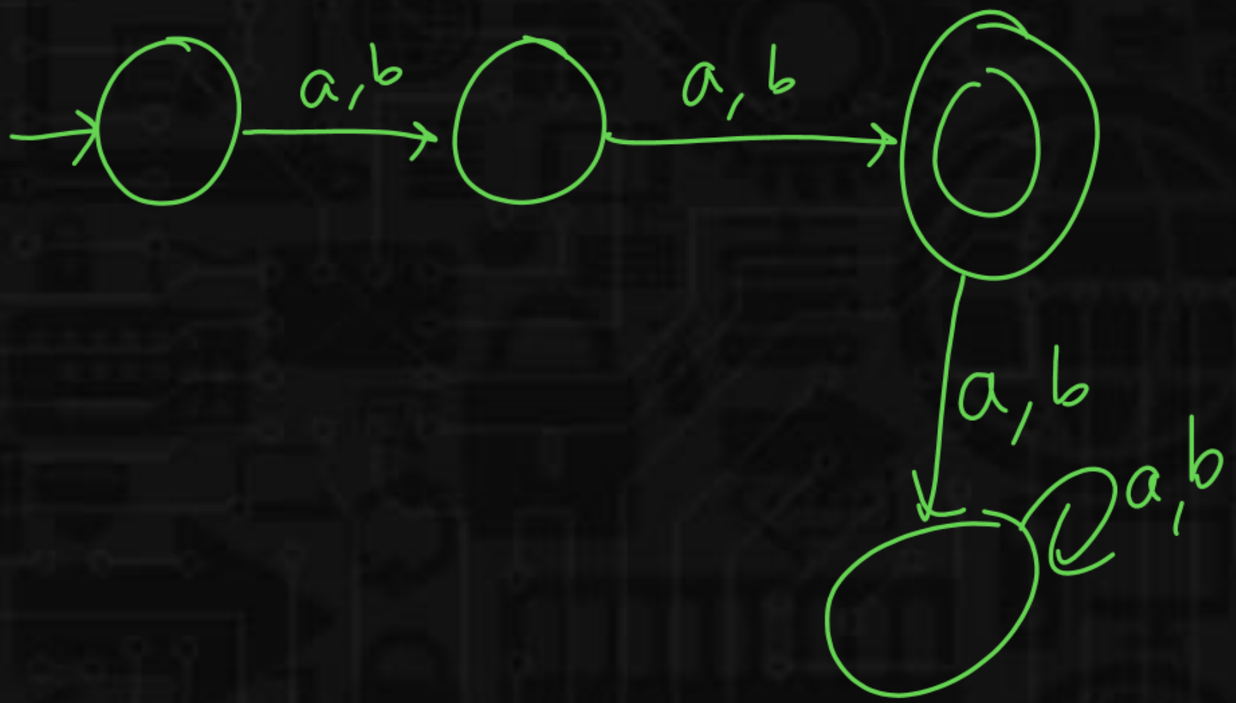
$= \{aa + ab + ba + bb\}$

A. 2

B. 3

C. 4 ✓

D. 1



$L = (a+b)^{100}$

$100 + 2$

102 states


THANK YOU GW
SOLDIERS !