Quiz: NFA/DFA/epsilon-NFA

- Due Mar 15 at 11:59pm
- Points 65
- Questions 6
- Available Mar 3 at 12am - Mar 15 at 11:59pm
- Time Limit None
- Allowed Attempts Unlimited

Instructions

This quiz was locked Mar 15 at 11:59pm.

> ⚠ Correct answers are no longer available.

Score for this attempt: 65 out of 65
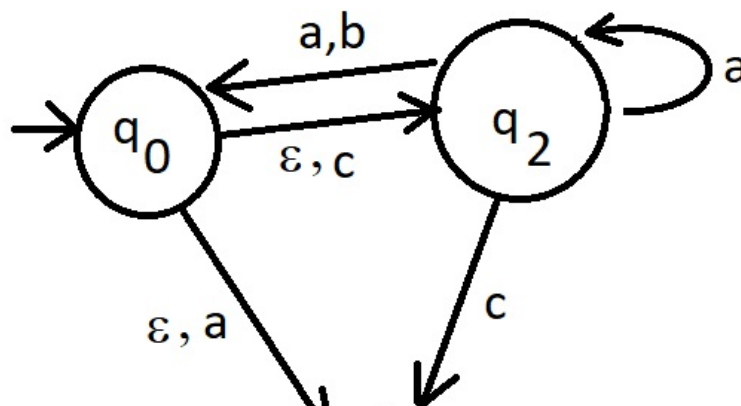Submitted Mar 15 at 11:11pm
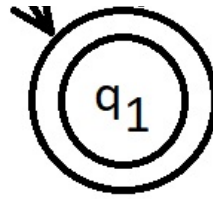This attempt took 5 minutes.

⋮⋮

Question 1
10 / 10 pts

In the process of the conversion of the following epsilon Non-deterministic Finite Automaton (ε-NFA) to the NFA,

M is defined as this set: $\varepsilon^*(\varepsilon^*(q_2) \times \{c\})$ where ε^* means epsilon-closure.

Which one(s) of the following belong(s) to M?
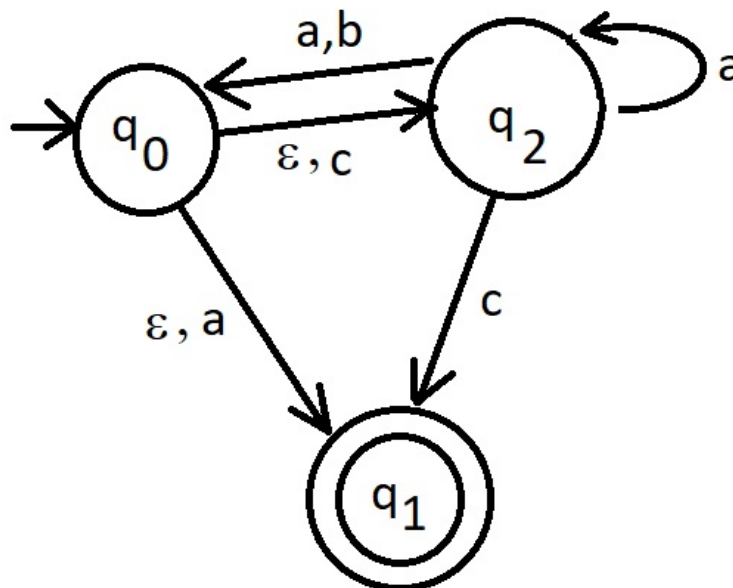
- ☐ q_0
- ☑ q_1
- ☐ q_2
- ☐ none

Question 2

10 / 10 pts

After the conversion of the following ε-NFA to the Non-deterministic Finite Automaton (NFA),
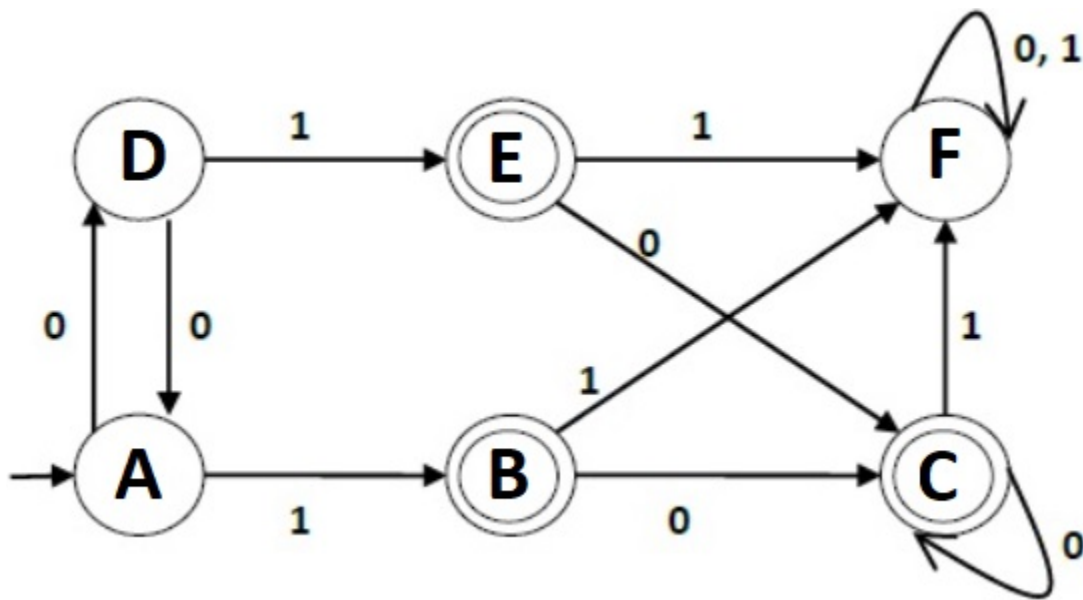

If δ denotes the transition function of the NFA, then in the final NFA we have: $\delta(q_0, x) = q_1$. What value(s) can the parameter x have?

☑ a

☑ b

☑ c

☐ ε

⋮⋮

Question 3

10 / 10 pts

During the process of the minimization of the following DFA using Equivalence Theorem,

What are the 1-equivalence partition sets?
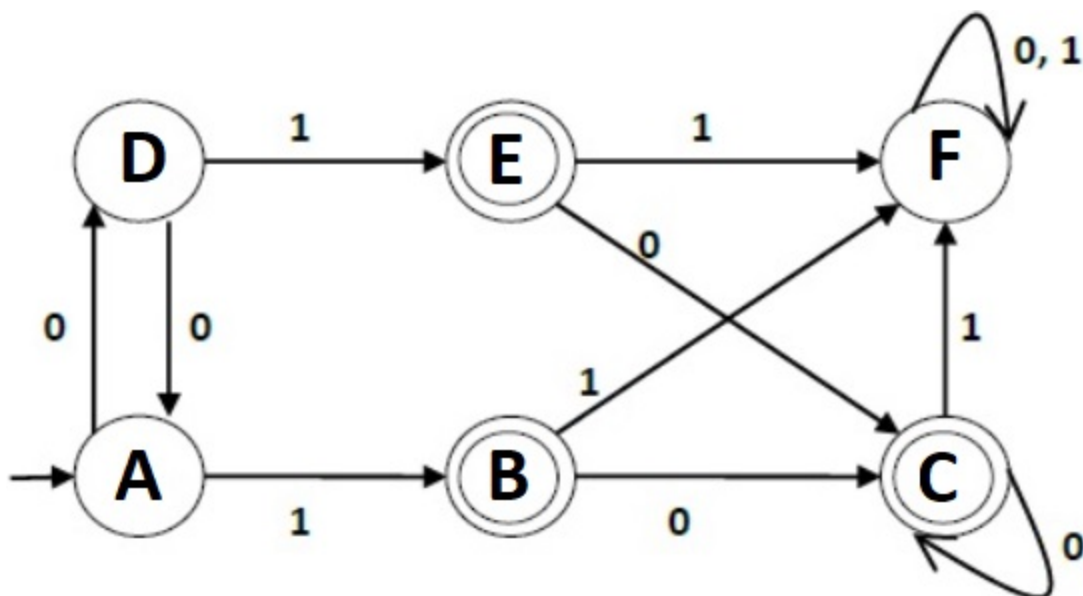
Your Answer:

{A,D}{F}{B,C,E}

{A,D}, {F}, {B,C,E}

⋮⋮

Question 4

15 / 15 pts

After the following Deterministic Finite Automaton (DFA) has been minimized using Myphill-Nerode method,

The total number of states will be [3] and the initial state is [AD] and the final state is [BCE] .
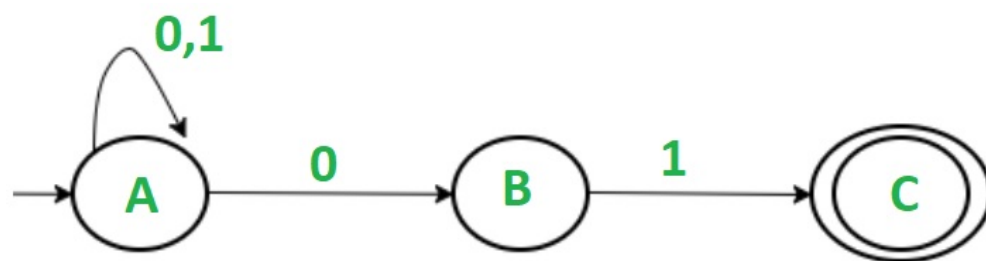
Answer 1:
3
Answer 2:
AD
Answer 3:
BCE

⋮⋮

Question 5
10 / 10 pts

We convert the following Non-deterministic Finite Automaton (NFA) to the Deterministic Finite Automaton (DFA) using subset construction method.

In the resulting DFA, what are the states? And which one(s) the final state?

⦿ The states are A, AB, AC, and the final state is AC.

◯ The states are A, BC, and the final state is BC.

◯ The states are A, AB, AC, BC and the final states are AC and BC.

◯ The states are A, AB, AC, BC and the final states is AC.

◯ The states are AB, AC, BC and the final states are AC and BC.

◯ The states are AB, AC, BC and the final states is AC.

⠿
Question 6

10 / 10 pts

We convert the following Non-deterministic Finite Automaton (NFA) to an equivalent Dtererministic Finite Automaton (DFA) using the subset construction method. In the resulting DFA, if δ is the transition function, then $\delta(A,0)$ is [AB] , and $\delta(A,1)$ is [A] .
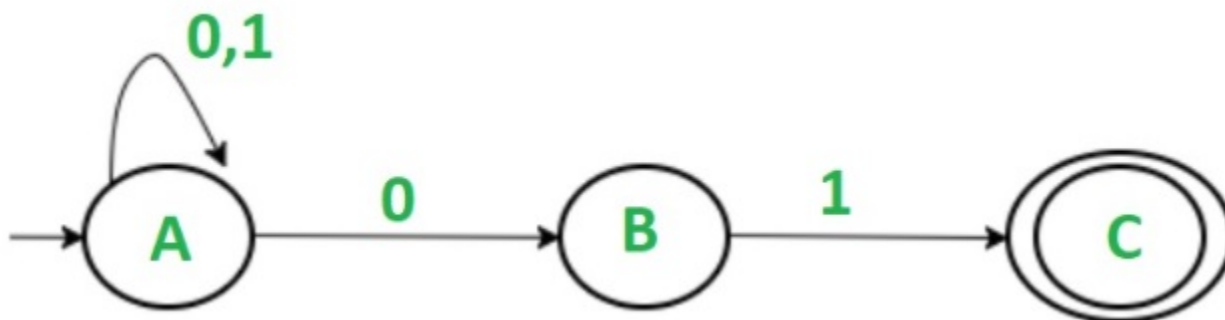
Answer 1:
AB
Answer 2:
A

Quiz Score: 65 out of 65