Question 1

0 out of 0.5 points

 $\{\lambda\} \cup \{a\}^+$ is equivalent to $\{a\}^*$.

Selected Answer: False

Answers: True

False

Question 2

0.5 out of 0.5 points

 Non-deterministic FA is easier to design than deterministic FA.

Selected Answer: True

Answers: True

False

Question 3

0.5 out of 0.5 points

 $\emptyset$ is equivalent to $\emptyset^*$.

Selected Answer: False

Answers: True

False

Question 4

0.5 out of 0.5 points

Non-deterministic FAs have more computation power than deterministic FAs.

Selected Answer: ✓ False

Answers: True

✓ False

Question 5

0.5 out of 0.5 points

Programming language compilers are an example of finite automata.

Selected Answer: ✓ False

Answers: True

✓ False

Question 6

0.5 out of 0.5 points

Coffee vending machine is an application of finite automata.

Selected Answer: ✓ True

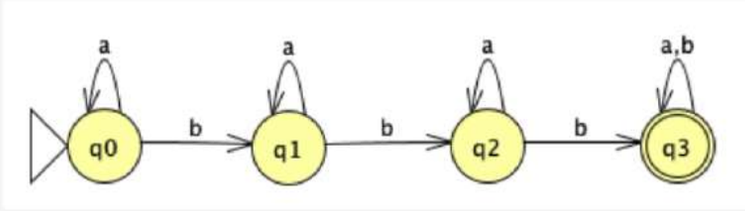
Answers: ✓ True

False

Question 7

0.5 out of 0.5 points

Consider the following DFA:



Which of the following words will be accepted by the above automata?

Selected Answer: C. baababb

Answers:

A. aaa

B. baaba

C. baababb

D. λ

Question 8

1 out of 1 points

Recall the DFA in Question 7, the language accepted by that automata is:

Selected Answer: C. All strings over $\Sigma = \{a, b\}$ with at least three b's.

Answers:

A. All strings over $\Sigma = \{a, b\}$ that contain the substring bbb.

Recall the DFA in Question 7, which of the following words will be rejected by that automata?

Selected Answer: B. baba

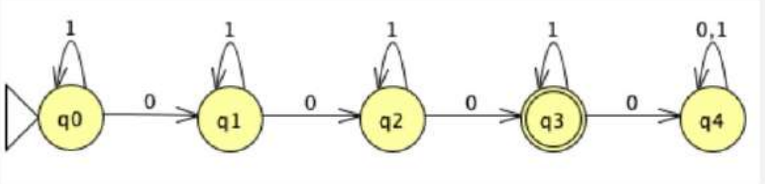
Answers:
A. ababab
B. baba
C. bbb
D. abbb

Response Feedback:

Question 10

0.5 out of 0.5 points

Consider the following DFA:



Which of the following words will be accepted by the above automata?

Selected Answer: C. 0100111

Answers:
A. 01
B. 111
C. 0100111
D. 01010101

Question 11

Recall the DFA in Question 10, the language accepted by that automata is:

Selected Answer: B. All binary strings with exactly three zero's.

Answers:

A. All binary strings with at least three zero's.

B. All binary strings with exactly three zero's.

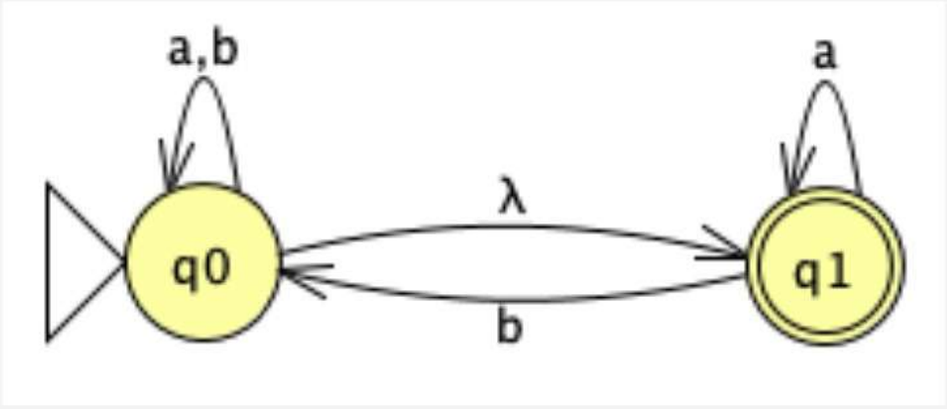
C. All binary strings that contains number of zero's divisible by three.

D. All binary strings with exactly three consecutive zero's.

Response Feedback:

Question 13

Consider the following NFA:



$$\bar{\delta}^{*}(q_1, ab) =$$

Selected Answer: A. $\{q_0, q_1\}$

Answers:

A. $\{q_0, q_1\}$

B. $\emptyset$

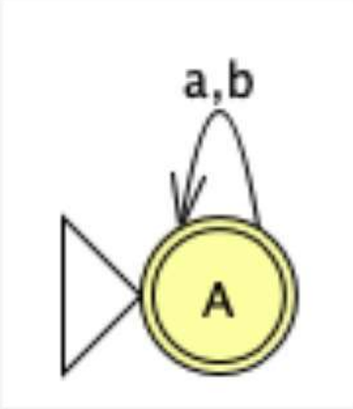
C. $\{q_0\}$

D. $\{\lambda\}$

Question 14

1 out of 1 points

Recall the NFA in Question 13, applying subset construction algorithm will result in the following DFA:



Selected Answer: True

Answers: True

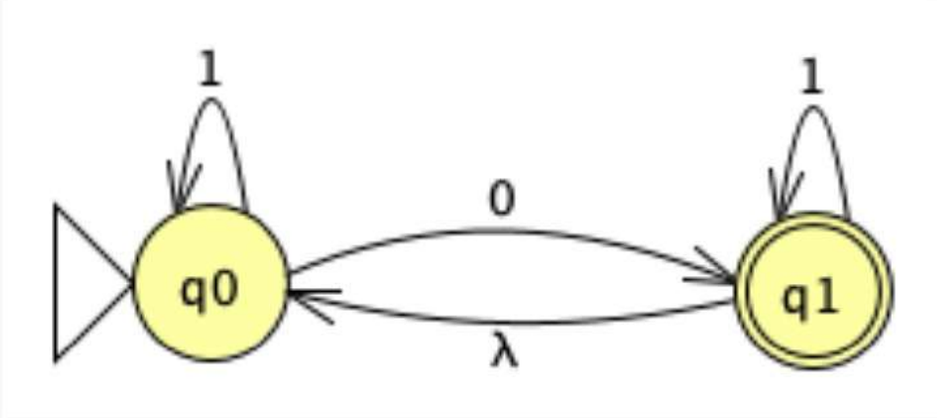
False

Response Feedback:

Question 15

0.5 out of 0.5 points

Consider the following NFA:



$\bar{\delta}^*(q_0, 1101) =$

Selected Answer: D. $\{q_0, q_1\}$

Answers:

A. $\{q_1\}$

B. $\{\lambda\}$

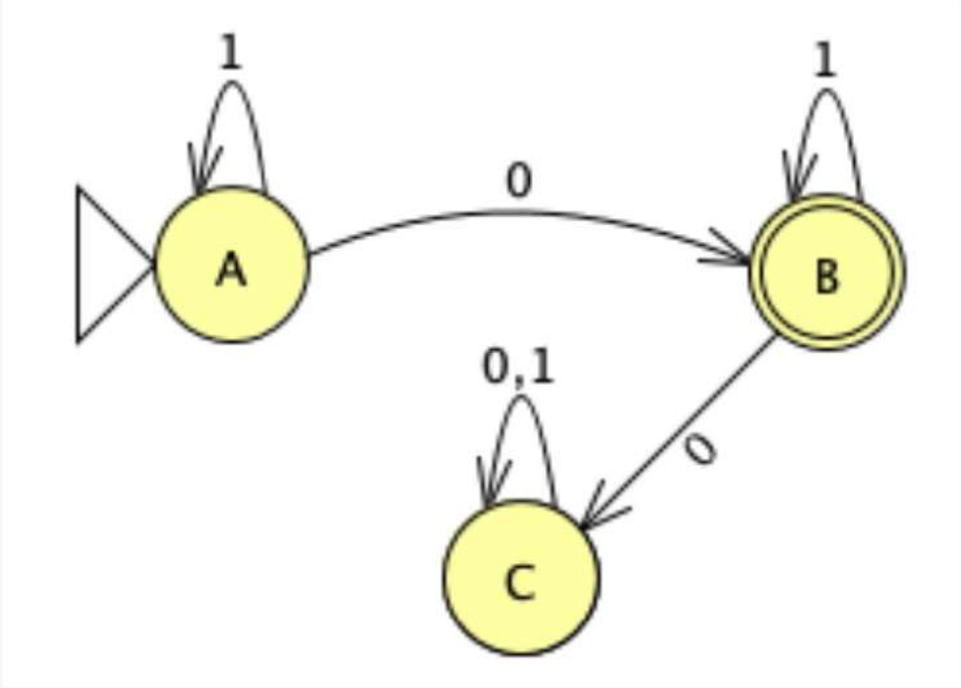
C. $\emptyset$

D. $\{q_0, q_1\}$

Question 16

1 out of 1 points

Recall the NFA in Question 15, applying subset construction algorithm will result in the following DFA:



Selected Answer: False

Answers: True

False

Response Feedback: