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|---|---|
| **Started on** | Monday, 10 February 2025, 10:38 AM |
| **State** | Finished |
| **Completed on** | Monday, 10 February 2025, 10:43 AM |
| **Time taken** | 4 mins 57 secs |
| **Marks** | 6.33/9.00 |
| **Grade** | **7.04** out of 10.00 (**70.37%**) |

**Question 1**

Partially correct

Mark 0.67 out of 2.00

Which of the following strings can be generated from the regular expression $(b|ab)^+(a|ba)^*$?

Select one or more:

- a. baab
- b. abbaa ✔
- c. bb
- d. abbb
- e. aaabaa
- f. Λ

**Question 2**

Correct

Mark 3.00 out of 3.00

Consider the following regular expressions:

1. r = a(b | a)*
2. s = a(a | b)$^+$
3. t = aa*b

Which of the following indicates the correct relationships among the languages **L(r)**, **L(s)** and **L(t)** that correspond to the regular expressions **r**, **s** and **t**, respectively?

Select one:

- a. L(s) ⊇ L(r) ⊇ L(t)
- b. L(r) ⊇ L(s) ⊇ L(t) ✔
- c. L(r) ⊇ L(t) ⊇ L(s)
- d. L(s) ⊇ L(t) ⊇ L(r)

**Question 3**

Correct

Mark 1.00 out of 1.00

Which of the following statements is/are **correct** about Finite Automata? (Select all that apply)

Select one or more:

- a. For a given regular expression, there exists a Finite Automaton that accepts any string in the corresponding regular language. ✔
- b. From an accepting state of a Finite Automaton, the next state for any input must be another accepting state.
- c. For a particular Finite Automaton, there must be only one initial state. ✔
- d. Any state of a Finite Automaton can be reached from only one other state.

**Question 4**

Partially correct

Mark 1.00 out of 2.00

Consider the finite automaton with the following transition table. q0 is the start state and q3 is the accepting state.

| Current State | Input | |
|---|---|---|
| | 0 | 1 |
| q0 | q1 | q2 |
| q1 | q1 | q3 |
| q2 | q0 | q3 |
| q3 | q2 | q3 |

Which strings are accepted by this finite automaton?

Select one or more:

- a. 100100
- b. 01001 ✖
- c. 1011 ✔
- d. 001 ✔

**Question 5**

Partially correct

Mark 0.67 out of 1.00

Select the regular expression/s representing strings over {1, 0} that do not end with '1'.

Select one or more:

- a. (1|0)*(10)*
- b. (1|0)*(10)$^+$ ✔
- c. (1|0)$^+$(10*)$^+$
- d. (1|0)$^+$(10)* ✖