

Automata Theory Objective Questions Answers

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Questions

1 The recognizing capability of NDFSM and DFSM

A must be the same

B may be different

C must be different

D none of the above

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| Answer: Option [A]

The recognizing capability of NDFSM and DFSM both are same. Because it is possible to generate equivalent DFSM from NDFSM and Vice versa.

2 Pumping lemma is generally used for proving

A a given grammar is regular

B a given language is not regular

C whether two given regular expressions are equivalent

D none of the above

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| Answer: Option [B]

3 Why Palindromes can't be recognized by any FSM ?

A an FSM can't deterministically fix the mid-point

B an FSM can't remember arbitrarily large amount of information

C even if the mid-point is known, an FSM can't find whether the second half of the string matches the first half

D all of the above

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| Answer: Option [D]

4 $L = \{a^n b^n a^n \mid n = 1, 2, 3, \dots\}$ is an example of a language that is

A not context free but whose complement is CF

B not context free

C only [A]

D both (B) and (C)

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| Answer: Option [D]

5 Any given Transition graph has an equivalent

A DFSA

B NDFSA

C regular expression

D all of the above

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| Answer: Option [D]

6 The lexical analysis for a modern computer language such as Java needs the power of which one of the following machine models in a necessary and sufficient sense?

A Finite state automata

B Deterministic pushdown automata

C Non-Deterministic pushdown automata

D Turing machine

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| Answer: Option [A]

7 Context-free grammar is not closed under

A complementation

B union

C concatenation

D kleene star

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| Answer: Option [A]

8 A PDM behaves like an FSM when the number of auxiliary memory it has is

A 0

B 1

C 2

D none of the above

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| Answer: Option [A]

9 A PDM behaves like a TM when number of auxiliary memory it has is

A 0

B 1

C 2 or more

D none of the above

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| Answer: Option [C]

10 Which of the following statements is/are true?

A DFSM and NDFSM both are equivalent.

B An FSM with 2 stacks is as powerful as a TM.

C A DFSM with 2 stacks and an NDFSM with 2 stacks have the same power.

D All of the above

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| Answer: Option [D]