

17 Lecture - CS402

Important Mcqs

1. **Which of the following is true about nondeterministic finite automata (NFA)?**

- a) They can only recognize regular languages
- b) They have a single unique transition for each input symbol
- c) They are equivalent to deterministic finite automata (DFA)
- d) They allow multiple transitions from a given state on a given input symbol

Answer: d)

Which theorem states that any language recognized by an NFA can also be recognized by a regular expression?

- a) Pumping Lemma
- b) Myhill-Nerode Theorem
- c) Kleene's Theorem
- d) Turing's Theorem

Answer: c)

Which of the following is not a part of an NFA?

- a) A set of states
- b) An input alphabet
- c) A set of final states
- d) A stack

Answer: d)

Which of the following is not true about an NFA?

- a) It can have multiple transitions on the same input symbol from a state
- b) It can recognize non-regular languages
- c) It can have ϵ -transitions
- d) It can be converted to a DFA

Answer: b)

Which of the following is not true about Kleene's Theorem?

- a) It states that any regular language can be recognized by an NFA
- b) It states that any language recognized by an NFA can also be recognized by a regular expression
- c) It is an important result in theoretical computer science
- d) It has applications in fields such as compiler construction and pattern recognition

Answer: a)

Which of the following is true about the conversion of an NFA to a DFA?

- a) The resulting DFA always has the same number of states as the original NFA
- b) The resulting DFA may have more states than the original NFA
- c) The resulting DFA always has fewer states than the original NFA
- d) The conversion is not possible

Answer: b)

Which of the following is true about the intersection of two regular languages?

- a) It is always a regular language

- b) It is always a context-free language
- c) It is always a non-regular language
- d) It depends on the languages being intersected

Answer: a)

Which of the following is true about the union of two regular languages?

- a) It is always a regular language
- b) It is always a context-free language
- c) It is always a non-regular language
- d) It depends on the languages being unionized

Answer: a)

Which of the following is not a closure property of regular languages?

- a) Union
- b) Concatenation
- c) Complementation
- d) Kleene star

Answer: c)

Which of the following is true about the complement of a regular language?

- a) It is always a regular language
- b) It is always a context-free language
- c) It is always a non-regular language
- d) It depends on the language being complemented

Answer: a)