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 ?-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)