

# 13 Lecture - CS402

## Important Mcqs

1. Which of the following is a key feature of a Nondeterministic Finite Automaton (NFA)?

- A. It has a single transition function
- B. It can have multiple transitions from a state on the same input symbol
- C. It cannot have transitions on empty input
- D. It has a fixed number of states

Answer: B

In a NFA, when given an input string, it can enter:

- A. Only one state at a time
- B. Multiple states simultaneously
- C. Only the initial state
- D. None of the above

Answer: B

Which of the following is true about the transition function of a NFA?

- A. It maps each state to a unique input symbol
- B. It maps each state and input symbol to a unique state
- C. It maps each input symbol to a unique state
- D. It maps each input symbol to a set of states

Answer: D

In a NFA, if there exists a path through the states that leads to an accepting state, then the input string is:

- A. Rejected
- B. Accepted
- C. Ignored
- D. None of the above

Answer: B

The power of NFAs lies in the fact that they can recognize:

- A. Only regular languages
- B. Context-free languages
- C. Context-sensitive languages
- D. Turing machines

Answer: A

Which of the following is a limitation of a NFA?

- A. It cannot recognize regular languages
- B. It has a limited number of states
- C. It can only have one accepting state
- D. It requires more memory than a DFA

Answer: D

Which of the following is true about the number of accepting states in a NFA?

- A. It can have only one accepting state

- B. It can have multiple accepting states
- C. It must have an even number of accepting states
- D. It cannot have any accepting states

Answer: B

**The set of all strings that a NFA accepts is called its:**

- A. Language
- B. Alphabet
- C. State set
- D. Transition function

Answer: A

**Which of the following is true about the complement of a language recognized by a NFA?**

- A. It is always regular
- B. It is not necessarily regular
- C. It is always context-free
- D. It is not a valid concept

Answer: B

**Which of the following is true about the equivalence of NFAs and DFAs?**

- A. Every NFA can be converted to an equivalent DFA
- B. Every DFA can be converted to an equivalent NFA
- C. NFAs and DFAs are not equivalent
- D. Both NFAs and DFAs are Turing-complete

Answer: A