

19 Lecture - CS402

Important Mcqs

1. Which of the following statements is true about the memory required to recognize a language?

- A. The memory required depends only on the size of the input string.
- B. The memory required is always finite for all languages.
- C. The memory required depends on the complexity of the language and the recognition algorithm used.
- D. The memory required is independent of the input size.

Answer: C

Which of the following languages requires an infinite amount of memory to recognize?

- A. The empty language
- B. The language of all binary strings
- C. The language of all palindromes
- D. The language of all prime numbers

Answer: B

Which of the following is an example of a language that can be recognized with very little memory?

- A. The language of all palindromes
- B. The language of all context-free grammars
- C. The language of all regular expressions
- D. The language of all Turing machines

Answer: C

Which of the following algorithms requires the least amount of memory to recognize a language?

- A. Deterministic finite automata
- B. Non-deterministic finite automata
- C. Pushdown automata
- D. Turing machines

Answer: A

Which of the following is an example of a language that cannot be recognized with any amount of memory?

- A. The language of all regular expressions
- B. The language of all context-free grammars
- C. The language of all Turing machines
- D. The language of all halting Turing machines

Answer: C

Which of the following is true about the memory required to recognize a regular language?

- A. The memory required is always finite.

- B. The memory required depends on the input size.
- C. The memory required depends on the recognition algorithm used.
- D. The memory required is independent of the input size.

Answer: A

Which of the following is an example of a language that can be recognized with a finite amount of memory but not with a constant amount of memory?

- A. The language of all palindromes
- B. The language of all context-free grammars
- C. The language of all regular expressions
- D. The language of all Turing machines

Answer: A

Which of the following is an example of a language that can be recognized with a polynomial amount of memory?

- A. The language of all context-free grammars
- B. The language of all regular expressions
- C. The language of all Turing machines
- D. The language of all binary strings with an equal number of 0s and 1s

Answer: A

Which of the following algorithms requires an exponential amount of memory to recognize a context-free language?

- A. Deterministic finite automata
- B. Non-deterministic finite automata
- C. Pushdown automata
- D. Turing machines

Answer: C

Which of the following is true about the memory required to recognize an infinite language?

- A. The memory required is always finite.
- B. The memory required is always infinite.
- C. The memory required can be either finite or infinite, depending on the language and the recognition algorithm used.
- D. The memory required is independent of the recognition algorithm used.

Answer: C