

# 31 Lecture - CS402

## Important Mcqs

1. **Which of the following symbols can be rewritten by production rules in a Context-Free Grammar?**

- A. Non-terminal symbols only
- B. Terminal symbols only
- C. Both non-terminal and terminal symbols
- D. None of the above

**Answer: A**

**What is the start symbol in a Context-Free Grammar?**

- A. The first non-terminal symbol in the grammar
- B. The last non-terminal symbol in the grammar
- C. A special non-terminal symbol that represents the entire language generated by the grammar
- D. A special terminal symbol that represents the empty string

**Answer: C**

**Which of the following is not a part of a production rule in a Context-Free Grammar?**

- A. Non-terminal symbol on the left-hand side
- B. Terminal symbol on the right-hand side
- C. Non-terminal symbol on the right-hand side
- D. None of the above

**Answer: B**

**What is a leftmost derivation in a Context-Free Grammar?**

- A. A derivation in which the leftmost non-terminal symbol is always replaced in each step
- B. A derivation in which the leftmost terminal symbol is always replaced in each step
- C. A derivation in which the rightmost non-terminal symbol is always replaced in each step
- D. A derivation in which the rightmost terminal symbol is always replaced in each step

**Answer: A**

**What is a parse tree in the context of Context-Free Grammar?**

- A. A tree structure that represents the syntactic structure of a string derived from the grammar
- B. A tree structure that represents the semantic structure of a string derived from the grammar
- C. A tree structure that represents the alphabet of the grammar
- D. None of the above

**Answer: A**

**What is ambiguity in a Context-Free Grammar?**

- A. A situation where a string can be derived by more than one parse tree
- B. A situation where a string cannot be derived by any parse tree
- C. A situation where a string has more than one non-terminal symbol
- D. None of the above

**Answer: A**

**What is Chomsky normal form for a Context-Free Grammar?**

- A. A form in which all production rules have exactly one non-terminal symbol on the right-hand

side

- B. A form in which all production rules have exactly one terminal symbol on the right-hand side
- C. A form in which all production rules have exactly two non-terminal symbols on the right-hand side
- D. None of the above

**Answer: A**

**What is the purpose of a terminal symbol in a Context-Free Grammar?**

- A. To represent basic elements of the language
- B. To represent non-terminal symbols
- C. To specify production rules
- D. None of the above

**Answer: A**

**What is a rightmost derivation in a Context-Free Grammar?**

- A. A derivation in which the rightmost non-terminal symbol is always replaced in each step
- B. A derivation in which the rightmost terminal symbol is always replaced in each step
- C. A derivation in which the leftmost non-terminal symbol is always replaced in each step
- D. A derivation in which the leftmost terminal symbol is always replaced in each step

**Answer: A**

**What is the difference between a leftmost and rightmost derivation in a Context-Free Grammar?**

- A. The order in which the non-terminal symbols are replaced in each step
- B. The order in which the terminal symbols are replaced in each step
- C. The type of grammar being used
- D. None of the above

**Answer: A**