

# 34 Lecture - CS402

## Important Mcqs

### 1. What does a total language tree represent?

- a) A subset of all possible strings generated by a CFG
- b) The starting symbol of a CFG
- c) All possible strings generated by a CFG
- d) The non-terminal symbols of a CFG

Answer: c

### What do the nodes in a total language tree represent?

- a) The input strings generated by a CFG
- b) The production rules of a CFG
- c) The terminal symbols of a CFG
- d) The symbols of a CFG

Answer: d

### What do the leaves of a total language tree represent?

- a) The starting symbol of a CFG
- b) The non-terminal symbols of a CFG
- c) The input strings generated by a CFG
- d) The terminal symbols of a CFG

Answer: d

### How is a total language tree constructed?

- a) By applying the production rules of the grammar to the input strings
- b) By applying the production rules of the grammar to the starting symbol
- c) By applying the production rules of the grammar to the terminal symbols
- d) By applying the production rules of the grammar recursively to the symbols in the tree

Answer: d

### What is the purpose of a total language tree?

- a) To generate input strings for a CFG
- b) To visualize the structure of a language generated by a CFG
- c) To simplify the production rules of a CFG
- d) To reduce the size of a CFG

Answer: b

### Can a total language tree have multiple leaves?

- a) Yes, if the CFG generates multiple input strings
- b) No, it can only have one leaf
- c) It depends on the size of the CFG
- d) It depends on the length of the input string

Answer: a

### What is the difference between a total language tree and a parse tree?

- a) They are the same thing

- b) A parse tree represents a single input string, while a total language tree represents all possible strings generated by a CFG
- c) A parse tree represents a subset of all possible strings generated by a CFG, while a total language tree represents all possible strings
- d) A parse tree is used for regular languages, while a total language tree is used for context-free languages

**Answer: b**

**What is the importance of the total language tree in parsing?**

- a) It helps to determine if a string is generated by a CFG
- b) It helps to simplify the production rules of a CFG
- c) It helps to reduce the size of a CFG
- d) It helps to visualize the structure of the language generated by a CFG

**Answer: d**

**Can a total language tree be infinite?**

- a) Yes, if the CFG generates an infinite number of input strings
- b) No, it is always finite
- c) It depends on the size of the CFG
- d) It depends on the length of the input string

**Answer: a**

**What is the time complexity of constructing a total language tree?**

- a)  $O(n)$
- b)  $O(\log n)$
- c)  $O(n^2)$
- d) It depends on the size of the CFG and the length of the input string

**Answer: d**