25 Lecture - CS301

Important Mcqs

1. What is an expression tree?

- a) A binary tree with nodes representing operands
- b) A binary tree with nodes representing operators
- c) A binary tree with nodes representing both operands and operators
- d) A binary tree with nodes representing numbers

Answer: c

2. What is the purpose of an expression tree?

- a) To represent a mathematical expression
- b) To store data in a tree structure
- c) To sort data in a binary tree
- d) To perform search operations on data in a binary tree

Answer: a

3. Which traversal of an expression tree is used to evaluate the expression?

- a) Preorder
- b) Inorder
- c) Postorder
- d) Level order

Answer: c

4. What is the time complexity of evaluating an expression tree?

- a) O(n)
- b) O(log n)
- c) O(n^2)
- d) O(2^n)

Answer: a

5. How is an expression tree created from an infix expression?

- a) Using the preorder traversal
- b) Using the inorder traversal
- c) Using the postorder traversal
- d) Using a stack

Answer: d

6. What is the maximum number of children a node in an expression tree can have?

- a) 0
- b) 1

c) 2

d) 3

Answer: c

7. Which of the following operations can be performed on an expression tree?

- a) Insertion of a node
- b) Deletion of a node
- c) Rotation of a node
- d) All of the above

Answer: d

8. What is the purpose of a leaf node in an expression tree?

- a) To represent an operator
- b) To represent an operand
- c) To represent a binary operation
- d) To represent a unary operation

<mark>Answer: b</mark>

9. Can an expression tree have duplicate nodes?

- a) Yes
- b) No

<mark>Answer: b</mark>

10. What is the advantage of using an expression tree over a postfix expression?

- a) Faster evaluation
- b) Easier to read
- c) Takes less space
- d) All of the above

Answer: d