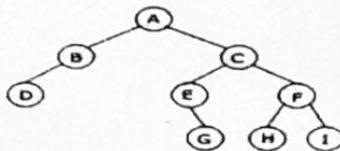


Duration: 2 Hours

[Max Marks: 60]

- N.B.: (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any THREE [15]
- a Explain ADT. List the linear and non-linear data structures with examples. [5]
 - b Explain the expression tree with an example. [5]
 - c List the applications of the stack. [5]
 - d Differentiate between array and Linked List. [5]
- 2 a Write an algorithm to convert infix expression to postfix expression. [8]
- b Write an algorithm to implement operations on queue. (Enqueue(), Dequeue(), Delete()) [7]
- 3 a What is a Linked List? Write an algorithm to:
(i) Insert a node at the end of the list [8]
(ii) Deleting a particular element
(iii) Display the linked list
- b List and explain the operations on data structures. [7]
- 4 a Write the preorder, inorder and postorder tree traversal sequences for a given tree: [8]



- b Design a Huffman tree for the word "MALAYALAM". Also write the Huffman code to represent each symbol. [7]
- 5 a What is a Binary Search Tree? Design a Binary Search Tree for the following elements: 50, 40, 60, 70, 80, 90, 20, 30 [8]
- b Write an algorithm to implement stack using Linked List. [7]
- 6 a Explain Double Ended queue with an example. [8]
- b Evaluate the following postfix expression: $7\ 4\ -\ 3\ * \ 1\ 5\ + \ / \ *$ [7]
