

FE sem II (NER) | Bannur - CSEC (20T), (IT) Computer | Nov-25 | Set -

Duration: 2 Hours

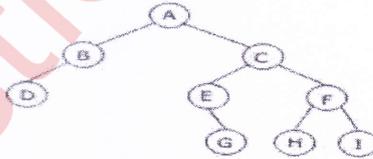
[Max Marks: 60]

05/12/202

1/1

- 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: [8]
    - (i) Insert a node at the end of the list
    - (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]

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