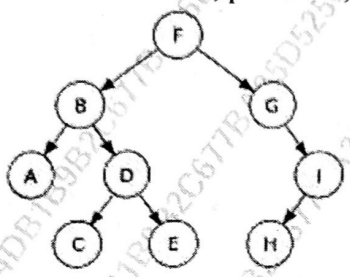
(3 Hours) Total Marks: 80

N.B: (1) Question No. 1 is compulsory
(2) Attempt any three questions out of the remaining five questions

Q.1 (a) Define ADT. Write ADT for Queue data structure. **[05]**

(b) Find the in-order, pre-order, post-order traversal **[05]**



(c) Differentiate between Linked list and Array **[05]**

(d) Explain application of Binary tree **[05]**

Q.2 (a) Apply Huffman coding for following examples. Determine the code for the following characters. "CONSTRUCTION" **[10]**

(b) Consider a hash table with size = 10. Using Linear probing, insert the keys
28, 55, 71, 67, 11, 10, 90, 44 into the table. **[10]**

Q.3 (a) Write an C program to check the well-formedness of parenthesis in an algebraic expression using the Stack data structure. **[10]**

(b) Construct AVL for the given elements 27,25,23,29,35,33,34 **[10]**

Q.4 (a) Write a program to perform the following operations on the Doubly linked list: **[10]**

i. Insert a node at the end
ii. Delete a node from the beginning
iii. Search for a given element in the list
iv. Display the list

(b) Write DFS algorithm. Show DFS traversal for the following graph with all the steps. **[10]**