



PES University
(Established under Karnataka Act of 2013)
100 Feet Ring Road, Banashanknari 3rd Stage, Bangalore- 560085

Department of Computer Science and Engineering
End Semester Examination – Aug-Dec 2019

Data Structures Laboratory - UE18CS207


Time: 2 Hours

Instructions to Students:

1. Students are required write only the required functions & execute the complete program.
2. Marks split up: Write up – 6 marks, Conduction – 14 marks.
3. Change of program –5 marks will be cut. Students are allowed to take change only twice.
4. Insert & Display functions should be written wherever applicable.

1. Write a program to perform the following operations using a Singly Linked List:
 - a. Search for a particular element node.
 - b. Delete from end of the list
2. Write program to perform the following operations using a Singly Linked List:
 - a. Ordered Insertion
 - b. Print the alternate elements in the list
3. Write program to perform the following operations using a Doubly Linked List
 - a. Position Insertion
 - b. Position Deletion
4. Implement Josephus problem using circular list.
- 5a. Write a program to implement convert an Infix expression to a postfix form using stack.
b. Write a program to compute the first n fabinocci series using recursion.
6. Write a program perform the following implementation using a stack
 - a. Postfix evaluation
 - b. Tower of Hanoi (Recursion)
7. Write a program implement a queue using a linked list and perform the following operations
 - a. Insert rear end
 - b. Delete at front end
8. Write a program to construct a Binary Tree using array traverse the tree using inorder & postorder traversal
9. Write a program to construct a Binary Search Tree using Linked List traverse the tree using preorder traversal. Also count the number of leaf nodes and compute the height of the tree.
10. Construct a graph and traverse using the BFS- using queues/DFS-using stack. Also count the number of components in the graph.

11. Construct a Min Heap Tree using Top Down approach
12. Construct a Max Heap using Bottom-up approach
13. Implement priority queue using heap.
14. Construct a Threaded Binary Tree and traverse using preorder traversal
15. Construct an expression tree for infix expression. Also evaluate the expression and traverse the tree using postorder traversal.
16. Implement the following using Tries:
 - a. Search a word based on prefix
 - b. Delete the word
17. Implement hashing technique to avoid collision using separate chaining.
18. Implement hashing technique to avoid collision using linear probing.


Signature of Chairperson,
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Chairperson
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