**Gujarat Technological University**

**Silver Oak College of Engineering and Technology**

**Department of Information Technology/Computer Engineering**

**Bachelor of Engineering (Odd Sem 2017-18)**

Subject Name: Data Structure Semester: III

Subject Code: 2130702 Academic Year: 2017-2018

Lab cum Module Test Planning

Instructions:

1. All Practical must be performed individually.
2. All Practical must be signed regularly in the laboratory by concern lab Teacher.
3. Write practical in following order- Aim, Program, Input/output..

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| **Sr. No.** | **Name of Practical** | **Planned Date** | **Actual date** | **Module Test Question Numbers** |
| 1 | Write a program to illustrate the concept of Structure and Union. |  |  |  |
| 2 | Write a program to illustrate the concept of Pointers and Dynamic Memory Allocation. |  |  |
| 3 | Implement a program for Stack that performs following operations using array.  (a) PUSH (b) POP (c) CHANGE (d) DISPLAY |  |  |  |
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| 4 | Write a program to implement Queue using arrays that performs following operations (a) INSERT (b) DELETE (c) DISPLAY |  |  |  |
| 5 | Implement a program to convert infix notation to postfix notation using stack. |  |  |  |
|  |  |  |
| 6\* | Write a program to implement Circular Queue using arrays that performs following operations. (a) INSERT (b) DELETE (c) DISPLAY |  |  |  |
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| 7 | Implement Tower of Hanoi using recursive method. |  |  |  |
| 8 | Write a menu driven program to implement following operations on the singly linked list.   1. Insert a node at the front of the linked list. 2. Insert a node at the end of the linked list. 3. Delete a first node of the linked list. 4. Delete a node after specified position. |  |  |  |
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| 9\* | Write a menu driven program to implement following operations on the doubly linked list.   1. Insert a node at the front of the linked list. 2. Insert a node at the end of the linked list. 3. Delete a last node of the linked list. |  |  |  |
| 10 | Write a program to implement stack using linked list. |  |  |  |
| 11\* | Write a program to implement queue using linked list. |  |  |  |
| 12 | Implement recursive tree traversing methods inorder, preorder and postorder traversal. |  |  |  |
| 13 | Write a program which create binary search tree. |  |  |  |
| 14\* | Write a program to implement BFS algorithm. |  |  |  |
| 15 | Write the program for following sorting algorithms   1. Quick Sort 2. Merge Sort |  |  |  |
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| 16 | Viva/Submission |  |  |  |