CHHOTUBHAI GOPALBHAI PATEL INSTITUTE OF TECHNOLOGY

Lab Planning

Department Name: IT and CS dept.	**Subject Teachers:** 1. Ms. Purvi Tandel 2. Ms. Jitisha Patel
Program & Semester: B. Tech 3rd Sem IT A & B	**Subject Name: Data Structures**
Academic Year: 2022-23	**Subject Code: CE4010**

Sr. No.	Title	Contact Hours
1.	Write a menu driven program, with the help of functions to insert student information, to modify student information and to display student information like a string of 100 characters called name, a string of 200 characters called address, integer to hold enrollment number and a string of 10 characters called admission number. Prepare an array of 10 students for the above class called Second Year using the above student information.	2
2.	Implement a stack which performs the following operations: i PUSH ii POP iii PEEP iv DISPLAY	2
3.	Write a program to convert an infix operation to its prefix operation using stack.	4
4.	Implement queue operations for library window of five people.	2
	CIE - 1	2
5.	Implement a circular queue for buffering system which performs the following operations: insert, delete, get_front, get_rear, empty and full.	2
6.	Write a menu driven program to implement following	2

	operations for train coach using singly linked list. a. Insert a node at the front of the linked list b. Insert a node at the end of the linked list c. Insert a node in sorted order in linked list d. Delete a node from linked list	
7.	Write a program to implement music player system using doubly linked list and perform following operations. a. Insert a node at the front of the linked list b. Insert a node at the end of the linked list c. Delete a node from linked list	2
	CIE – 2	2
8.	Sort the elements given by the user using Insertion sort algorithm.	2
9.	Write a program to create a binary search tree and find traversal sequence of the following tree orders: a. Preorder b. Inorder c. Postorder	2
10.	Write a program to store k keys into an array of size n at the location computed using a hash function, loc = key % n, where k<=n and k takes values from [1 to m], m>n. To handle the collisions use the following collision resolution techniques: a. Linear probing b. Quadratic probing	2
11.	Implement breadth first search for a graph.	2
	CIE - 3	2

Total contact hours:	30
Name & Signature of Subject Teacher:	Ms. Purvi Tandel Ms. Jitisha Patel
Name & Signature of Subject In-Charge:	Ms. Jitisha Patel
Name & Signature of Head of Department:	Ms. Purvi Tandel