Shri Vile Parle Kelavani Mandal's
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

Academic year 2022-23

Assignment No.1

Direct Second Year-All Branches

Subject: Data structures and algorithms **Max Marks:25**

Subject Incharge: Deepali Patil **Date: 20/12/2022**

Question No.	Questions	Max Marks	CO	RBT Level
Q.1 (a)	Justify Why we need Asymptotic notations. Explain Asymptotic notations with examples.	[4]	CO1	Evaluate Understand
Q.1 (b)	Define data structure and Compare Linear and nonlinear data structure. **OR** Define Algorithm and State its various properties.	[3] [3]	CO1 CO2 CO5	Remember Analyze
Q.2(a)	Explain how infix expressions can be converted to pretfix expressions with an example.	[5]	CO2 CO5	Understand Apply
Q.2 (b)	Define Linked List. Also explain different types of linked lists with examples and write applications of linked lists. **OR** Write an algorithm for circular linked lists for Insertion (Consider all cases).	[3] [3]	CO2 CO5	Remember Understand Apply
Q.3 (a)	Construct a binary tree for inorder and postorder traversal sequence given below: Inorder: INFORMATION postorder:INOFMAINOTR	[5]	CO2 CO5	Remember Apply
Q.3 (b)	Define ADT for a queue and write a program to implement the queue using an array. **OR** Define ADT for a stack and write a program to implement the stack using an array.	[5] [5]	CO2 CO5	Remember Apply