

Day and Date: Monday, 24/01/2022

Time: 11.00 am to 12.30

Seat No :

Max. Marks- 50

Instructions:

- All Questions are compulsory.
- Figure to the right indicate full marks.
- Draw diagrams wherever required.

BT	CO's	Q. No.	Marks
		Q.1	Attempt all Questions 20 Marks
2	2	a	Discuss various types of queue and enlist applications of it. 7
3	3,4	b	Write program in C to implement insertion sort. Show pass wise execution of code on array $a[5]=\{11,15,2,13,6\}$. 7
1	1	c	Recall hashing, hash table and hash function properties. List different hash functions. 6
		Q.2	Attempt Following 15 Marks
3	1	a	Illustrate with example how linked list can be used for polynomial addition. 7
		OR	
1	2	a	Define following terms with examples: - i) Graph ii) adjacent node iii) source node iv) sink node vi) Adjacency Matrix vii) Path Matrix
3	3	b	Explain binary tree. Illustrate sequential representation of binary tree with help of example. 8
		Q.3	Attempt Following 15 Marks
1	1	a	State the linked representation of stack and write algorithm for push and pop the item from it. 7
3	1	b	What is AVL tree? Explain various methods to balance a Tree. Construct AVL tree by inserting the following elements in given order: - 64-01-14-26-13-110-98-85 8
		OR	
1	1	b	Enlist standard ways of traversing a graph. Write non-recursive algorithm for BFS and DFS traversal.
