

[Time:2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. Figures to the right indicate full marks

Q.1	<p>Attempt any three of the following:</p> <ol style="list-style-type: none"> a. Write an algorithm for performing traversing array elements operations on an array. b. What is an algorithm? What are the characteristics of an algorithm? b. Write the difference between Algorithm and Pseudocode. c. What is sparse matrix? Explain different ways of representing sparse matrix into memory. d. Differentiate between Linear and Non Linear Data Structure. e. Differentiate between Algorithm and Pseudocode f. Explain how to insert an element in an array with example 	15
Q.2	<p>Attempt any three of the following:</p> <ol style="list-style-type: none"> a. Describe the applications of linked list on polynomial Expressions. b. Differentiate between Array and Linked List c. What is Circular Linked List? State the advantages and disadvantages of Circular Link List Over Doubly Linked List and Singly Linked List d. Explain One-Way Linked List with its operation and implementation. e. Write a C program to merging of two Singly Linked List f. How to traverse a two way linked list? Give its algorithm. 	15
Q.3	<p>Attempt any three of the following:</p> <ol style="list-style-type: none"> a. What is circular queue ? How to implement it? b. Explain Applications of Queue and Dequeue c. Evaluate: 7, 5, +, 4, *, 8, 11, 9, -, +, -, - d. Explain different types of Queue. e. Explain different applications of Stack. f. Write short notes on : Memory Representation of QUEUE 	15
Q.4	<p>Attempt any three of the following:</p> <ol style="list-style-type: none"> a. Explain Linear and Binary Search b. Explain Max Heap with example. c. State and explain Huffman algorithm d. Write an algorithm to insert an element in binary search tree e. Explain the linear search technique with appropriate example. f. Explain the following terms: <ol style="list-style-type: none"> i) Path ii) Height iii) Leaf iv) Siblings v) Root 	15
Q.5	<p>Attempt any three of the following:</p> <ol style="list-style-type: none"> a. Explain Different Hashing Techniques. b. Explain the directed graph and undirected graph with example c. What do you mean by Collision? How to avoid? d. Write steps for Kruskal's Algorithm for Minimum Spanning Tree 	15

		e. Explain Quadratic Probing collision resolution technique f. Write a short note on Folding Hashing Method	
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