

Paper - 3 Data Structures

Time: 3 hours

Max. Marks: 80

SECTION -A

Answer All Questions.

4X15=60

- 1) a) Explain the concept of Deterministic and Non-Deterministic and Random algorithms.
(Or)
b) Explain about the principles of programming methodology and the salient features of recursion and iteration.
- 2) a) What is Data Structure? Explain about different categories of data structures with advantages and disadvantages of each.
(Or)
b) Write and explain an algorithm to insert an element into a linked list at front, at end and at any place.
- 3) a) Explain Tree traversing algorithms. Give example.
(Or)
b) Explain about binary search tree and give an example.
- 4) a) Explain about DFS algorithm and give an example.
(Or)
b) Explain about merge sort and give an example.

SECTION –B

Answer any FOUR questions.

4 x 5=20

- 5) Explain the structured programming concepts.
- 6) What is Queue? Explain about the queue operations.
- 7) Explain conversion of a general tree to binary tree.
- 8) What are the advantages of linked lists over arrays?
- 9) Differentiate between Trees and Graphs.
- 10) Explain about the Floyd algorithm.
- 11) Explain hashing and Collision resolution methods.
- 12) Write and explain the algorithm of bubble sort.