

Roll No. 822382300071

Total No. of Questions : 6]

[Total No. of Printed Pages : 4

EY-226

B.Tech. IIIrd Semester (New Scheme) CSE

Examination, 2023-24

Data Structure and Algorithms

Paper - CS-303

Time : 3 Hours]

[Maximum Marks : 60

Note :- Attempt all question. All questions carry equal marks.

question 1 is compulsory. There are Internal Choices

between ques. 2 to ques. 6.

1. Explain Briefly.

EY-226

(1)

P.T.O.

- (a) Linked List
- (b) Insertion
- (c) DFS
- (d) 3-Trees
- (e) Algorithm

UNIT-I

2. (a) What are Techniques of Sparse Matrices ? Explain.
- (b) Explain the algorithm of creations and its features ?

OR

- (a) Define Operation of Ordered List its features ?
- (b) Explain Various Operations in an Ordered List ?

UNIT-II

3. (a) What is the term Disjoint set structure ? Explain.

EY-226

(2)

- (b) Explain Heap and heap Sort in Details ?

OR

- (a) What are techniques of Divide and Conquer ? Explain.
(b) What do you mean by Quick Sort and its Algorithm ?

UNIT-III

4. (a) Explain the term Shortest Path and its Algorithm ?
(b) What are Applications of Circular Queue ? Explain.

OR

- (a) Explain Concepts of Graphs and its theory ?
(b) Define Simple Application on Tree with its example ?

UNIT-IV

5. (a) What is the Optimal Merge Pattern ? Explain.
(b) What is Backtracking Concepts with its 8 Queens Problem ?

OR

- (a) Explain Knapsack Problem and its method ?
- (b) Explain the Travel Salesperson problem and its characteristics.

UNIT-V

6. (a) What is AVL Tree ? Explain its advantages.
- (b) Explain Concepts of Lower Bound Theory ?

OR

- (a) Explain B-Trees and its features ?
- (b) What do you mean NP-Complete Problem ? Explain.

AJEET SONI