

(i) Printed Pages : 2

Roll No. ....

(ii) Questions : 9

Sub. Code : 

0	3	9	2
---	---	---	---

Exam. Code : 

0	0	0	4
---	---	---	---

**B.A./B.Sc. (General) 4<sup>th</sup> Semester**

**1059**

**COMPUTER SCIENCE**

**Paper—CS08-Data Structure**

**Time Allowed : Three Hours]**

**[Maximum Marks : 30**

**Note :—** Attempt **five** questions in all by selecting at least **one** question from each Unit i.e., I, II, III, and IV, and Unit V is compulsory.

**UNIT—I**

1. What is data structure ? Describe various operations that can be performed on a data structure with suitable example. 6
2. Write an algorithm to insert and delete an element at a given location in 2D array. 6

**UNIT—II**

3. What is doubly linked list ? Write its advantages and disadvantages over single linked list. 6
4. Write an algorithm to locate a given element from a linked list. 6

**UNIT—III**

5. What is graph ? Describe DFS algorithm to traverse a graph. 6

6. Describe Inorder and Preorder algorithms to traverse a binary tree.

6

#### UNIT—IV

7. Describe the working of Merge sort algorithm with suitable data.

6

8. Write binary search algorithm and discuss its time complexity.

6

#### UNIT—V

9. Answer the following questions in 5-6 lines only :—

(a) What is time complexity of merge sort ?

(b) Define address of an element in 2D array.

(c) What do you mean by header linked list ?

(d) What is priority queue ?

(e) Define height of a binary tree.

(f) What is binary search tree ?

6