

470180



DCCS201

Reg. No.

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
|--|--|--|--|--|--|--|--|

II Semester B.A./B.Sc. Degree Examination, September - 2023

COMPUTER SCIENCE

Data Structures

(NEP Scheme)



Time : 2½ Hours

Maximum Marks :60

Instructions to Candidates:

Answer **all** the parts. Answer any **FOUR** questions from **each** part.

PART - A

I Answer any **FOUR** questions. Each question carries 2 marks.

(4×2=8)

1. Define Abstract Data type.
2. What is Time Complexity?
3. What is Linked list?
4. Define the following:
 - a) Degree
 - b) Leaf
5. Explain stack and its application.
6. Define Hash Table.

PART - B

II Answer any **FOUR** questions. Each question carries 5 marks.

(4×5=20)

7. Explain the classification of Data Structures.
8. Write an algorithm to delete an element from an array.
9. What is queue? Explain different types of queues.
10. Explain Binary Search Tree with an example.
11. Explain the different ways of representing graphs.
12. Explain the tree traversal methods.

[P.T.O.]

**PART - C**

III. Answer any FOUR questions. Each question carries 8 marks. (4×8=32)

13. a) Explain asymptotic notations and give an example for each. (4)
b) Explain the different memory representation of two dimensional arrays with an example. (4)
 14. a) Write an algorithm for Push and Pop operation. (4)
b) Explain infine, prefix and postfix notations of Arithmetic expressions with examples. (4)
 15. a) Explain Bubble sort with an example. (4)
b) Define string? Explain any two string functions. (4)
 16. a) Write an algorithm to insert an element into a singly linked list. (4)
b) What is Breadth-first search? Explain with an example. (4)
 17. Write a program for tower of Hanoi problem using recursion and trace the program for three disks. (8)
 18. Write a menu driven program to search and element of an array using linear search and Binary search. (8)
-