

FACULTY OF SCIENCE
B.Sc. (CBCS) III - Semester Examination, November/December 2024

Subject: Computer Science
Paper – III : Data Structure using C++

Time: 3 Hours

Max. Marks: 80

PART – A

Note : Answer any Eight questions.**(8x4=32 Marks)**

1. What is data structure? Give examples.
2. Write about analysis of algorithms.
3. Write the applications of stack.
4. Write about Recurrence.
5. What is a circular queue?
6. What is a linked stack?
7. Write ADT for Binary Tree.
8. Write short notes on linear search.
9. Write about symbol table.
10. Write short notes on Depth First Search.
11. Write about Hash table overflow.
12. Write the applications of Heap.

PART – B

Note : Answer all the questions.**(4x12=48 Marks)**

13. a) Explain the different types of data structures with suitable examples.

OR

- b) Write a program to evaluate an expression by using stack data structure.

14. a) Compare Iteration and Recursion. Explain the use of stack in Recurrence with implementation.

OR

- b) Explain the linked list variants with suitable examples.

15. a) Explain the different types of trees with an example for each and write the applications of binary trees.

OR

- b) Compare the various sorting algorithms with advantages and disadvantages for each sorting technique.

16. a) Explain Spanning tree using Prim's algorithm.

OR

- b) Explain the implementation of heaps with an example and write its applications.
