

NOVEMBER 2023

51332/SZ23A

Time : Three hours

Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer any TEN questions.

1. Write the benefits of List ADT.
2. Show that diagrammatic representation of circular linked list.
3. Convert the given infix $(A + B) * (D / E) - F$ into postfix expression.
4. What is dequeue?
5. What are the applications of queue?
6. Define Threaded Binary Tree.
7. List out the advantages of expression tree.
8. Give an example to represent a B+ Tree.
9. Define directed graph.
10. What is Bi-connectivity?
11. Compare searching and sorting.
12. What is hashing?

II BCA \rightarrow Data Structures

PART B — ($5 \times 5 = 25$ marks)

Answer any FIVE questions.

13. Write the procedure to insert an element in a singly linked list.
14. How do you perform traversal in linear list?
15. Explain the operations of circular queue.
16. Describe the applications of stack.
17. Brief about the operations of a threaded binary tree.
18. Outline the various representations of a graph with examples.
19. Write note on Rehashing.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

20. Explain the procedure for basic operations of double linked list.
21. Discuss the operations of stack and queue.
22. Analyze the basic operations of binary search tree with its procedure.

23. Develop an algorithm for Depth First search. Compare it with Breadth First search with their complexity.
24. (a) Write an algorithm for Bubble sort. (5)
(b) Sort the given numbers 77, 55, 44, 22, 11, 66, 88, 99 using shell sort. (5)