B.C.A. DEGREE EXAMINATION,NOVEMBER 2018
II Year III Semester
Core Major- Paper IV
DATA STRUCTURES AND ALGORITHMS

Time : 3 Hours **Max.marks :75**

Section A $(10 \times 2 = 20)$ Marks

Answer any **TEN** questions

1. Define Data structure.
2. What is Ordered Lists?
3. Define push and pop.
4. What is Dequeue?
5. List out the operations in Singly Linked List.
6. How will you Represent a Polynomial?
7. Define Binary Tree.
8. What is undirected graph?
9. Define space Complexity.
10. What is meant by Algorithm?
11. Define Hashing.
12. What is Circular Queue?

Section B $(5 \times 5 = 25)$ Marks

Answer any **FIVE** questions

13. Briefly explain different types of Asymptotic Notations?
14. What are the different types queue operations? Explain in detail.
15. Differentiate the insertion operation between Singly Linked list and Doubly Linked list.
16. What are the different types of Tree Traversal Explain with example?
17. Explain about Divide and conquer Algorithm.
18. Explain about Dijkstras Algorithm.
19. Briefly Discuss about Hashing Function.

Section C $(3 \times 10 = 30)$ Marks

Answer any **THREE** questions

20. Explain the various operations of Arrays.
21. Explain the application of Stack.
22. Explain polynomial addition algorithm Using Singly linked list.
23. Write a short note on DFS and BFS.
24. Explain Merge sort with algorithm and Example

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