B.Sc. DEGREE EXAMINATION,NOVEMBER 2018
II Year III Semester
Core Major – Paper III
DATA STRUCTURES AND ALGORITHMS

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

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

Answer any **TEN** questions

1. What is an array?
2. What do you mean by Time Complexity of an algorithm?
3. What is Queue?
4. What is recursion?
5. What do you mean by Singly linked list?
6. Give the structures of Doubly linked list.
7. Define the term Hashing.
8. Write the Post order traversal of a Binary tree with three nodes,whereas A is in the root, B and C as the left and right branch respectively.
9. What is Divide - Conquer strategy?
10. Write an algorithm for subtraction of two positive numbers.
11. Define cyclic graph.
12. List Tree traversal techniques.

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

Answer any **FIVE** questions

13. Explain Ordered lists.
14. How add operation can be performed on Circular Queue? Explain.
15. How Polynomials are represented? Explain.
16. Explain the characteristics of Binary Trees.
17. Brief about selection sort algorithm.
18. Explain the operations of stack.
19. How divide and conquer technique solves Binary Search problem? Explain.

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

Answer any **THREE** questions

20. Discuss Primitive and Composite data types with suitable example.

21. Explain the steps involved in conversion of Infix of an expression to Postfix.

22. Explain add and delete operations on Doubly linked list.

23. Discuss the procedure for any one Graph traversal technique.

24. How Quick sort technique is derived with Divide and Conquer strategy / Discuss.

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