B.Sc. DEGREE EXAMINATION,APRIL 2020
II Year III Semester
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 an array?
3. Define recursion.
4. List the operations on Queue.
5. Define doubly linked list.
6. List any two applications of linked list.
7. Define trees.
8. What is Hashing?
9. Define Algorithm.
10. What do you mean by divide and conquer.
11. How does a Binary Search differ from linear search?
12. Define ordered list.

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

Answer any **FIVE** questions

13. Discuss about ADT arrays.
14. Explain circular Queue in detail.
15. Elaborate how elements are added and deleted from doubly linked list.
16. Elucidate Hashing.
17. Write an algorithm to find maximum and minimum.
18. Illustrate infix to postfix conversion
19. Analyze the sorting technique, selection sort.

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

Answer any **THREE** questions

20. Discuss about arrays and operations on arrays with algorithm.
21. Write an algorithm to implement Stack.
22. Implement Singly linked list.
23. Write an algorithm to implement tree traversal.
24. Write a program to sort n numbers using Quick sort.

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