(01/13-II)

2212

M.C.A. (2nd Year)/M.Sc. (Comp. Sc.)

(Second Year) EXAMINATION

(New Scheme)

DATA STRUCTURE

MCA/M.SC.-DE-22

Time : Three Hours *Maximum Marks : 70*

Note : Attempt any *Five* questions.

1. Explain various operations on linear arrays. 7

2. Describe various ways for implementing graphs in memory. 7

3. (a) Explain various applications of queues. 2

   (b) Write algorithm for converting arithmetic expression from infix notation to polish notation. 5

4. Compare all the sorting algorithm with respect to their complexity and justify your answer which sorting algorithm is best suited for which type of data. 7

5. What do you mean by hashing ? Explain linear probing and double hashing. 7

6. Define Heap. Write an algorithm to implement heat sort. 7

7. Write a recursive function that prints the keys of a linear singly linked list on reverse order. 7

8. Write algorithm for implementing parathesis checker application of stacks. 7

9. Define the following terms related to graphs :

   (a) Outdegree and Indegree

   (b) Source and Sink

   (c) Hamiltonian path. 7

10. Explain the algorithm for post order traversal algorithm of a binary tree. Also execute the algorithm with an example. 7