

M.C.A.(Sem-II)

April-2023

[3 Hours]

[Total Marks: 80]

- N.B. (1) Question No.1 is compulsory
 (2) Attempt any four out of remaining six questions
 (3) Figures to the right indicate marks

Q1. A) Write an algorithm for Selection sort. Consider the set of 8 numbers as 10

10 8 2 5 -1 0 17 9

Show the steps to sort the elements using Selection sort.

B) Write a recursive algorithm to search an elements of an array in ascending order 10
 using Binary search.

Q2. A) Write an algorithm to rotate AVL tree Left and illustrate with the help of example. 10

B) What is heap? Give the algorithm for Reheap Up. 05

Q3. A) What is a doubly linked list ? Write an algorithm for adding a node in double link list. 10

B) Explain Threaded binary tree. 05

Q4. A) Define M- Way tree. Construct B tree of order 4 for the following data 10

10 20 30 5 6 12 40 50

B) Explain the Warshall algorithm 05

Q5. A) Define almost complete binary tree. Write an algorithm to traverse binary tree in Post order traversal. 10

B) Write the difference between Linear and Binary search 05

Q6 A) Write following algorithm for Singly linked list 10

i) Analysis of an algorithm

ii) Backtracking Divide and Conquer Techniques

B) What is multiway tree? Explain with example. 05

Q7 Define the following term 15

a) Graph Storage Structure

b) Clustering

c) Doubly linked list