Time allowed: 3 Hours   Max. Marks: 50

NOTE: *Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I.   Explain the following:-

    a)   Data Structures

    b)   Difference between arrays, Stacks and queues?

    c)   What is postfix notation?

    d)   Concept of Heap

    e)   Advantages of B-Tree   (5x2)

UNIT - I

II.   Explain the concept, basic operations and sorting of data in data structures.   (10)

III. Explain transverse, insert, delete, searching and sorting of data in list. How storage allocation and garbage collection is possible.   (10)

IV.   Explain the concept of sparse matrix representation by considering a suitable example.   (10)

UNIT - II

V.   With the help of suitable diagrams, explain Binary Tree Transversal and Height Balance Tree.   (10)

VI.   With the help of diagrams, explain Depth and Breadth first search. How linked representations of graphs is possible.   (10)

VII. Explain Radix sort and merge sort with the help of suitable examples.   (10)

x-x-x