DATA STRUCTURES

Duration: 2 Hrs   **Marks: 50**

Instructions: 1. All Questions are compulsory.

2. Figures to the right indicate marks.

Q.1. Define the following.   (5*2=10)

      a. Circular Queue.
      b. Strictly Binary tree.
      c. Circular linked List .
      d. Descendant of a node.
      e. Directed graph.

Q.2.A. Why stack is called a LIFO list?   (2)
Q.2.B. Write C implementation for circular queues.   (3)
Q.2.C. Write a C program to evaluate postfix expression using stacks.   (5)

Q.3.A. What is an available list?   (2)
Q.3.B. Explain various tree traversal techniques.   (3)
Q.3.C. Write C program to concatenate 2 linear linked list.   (5)

Q.4.A. What is the efficiency of mergesort?   (2)
Q.4.B. Explain B-trees.   (3)
Q.4.C. Explain shellsort.   (5)

Q.5.A. Write C implementation for getnode() and freenode().   (2)

Q.5.B. What is a multiway search tree?   (3)

Q.5.C. Discuss the shortest path algorithm.   (5)

XXXXXXXXXXXX