PG/IS/COS-191/19(Pr.)

M.Sc. 1st Semester Examination, 2019

COMPUTER SCIENCE

(Data Structure Lab.)

(Practical)

PAPER – COS-191

Full Marks : 50

Time : 2 hours

The figures in the right hand margin indicate marks

Answer any one question by Lottery basis 35×1

1. Write a program to merge two sorted arrays.

2. Write a program to implement stack using array. You may use switch case to implement different operations.

3. Write a program to implement binary search technique.

4. Write a menu driven program to implement different operations of linear queue using single linked list.

(Turn Over)

5. Write a program to implement following operations over single linked list :

   (*i*) Find the largest and smallest element.

   (*ii*) Insert an element at any position.

   (*iii*) Delete a particular element.

6. Write a menu driven program for tree traversal in pre-order, In-order and Post-order.

7. Apply Insertion sort to arrange the half of total elements of an array and let other elements as unchanged.

8. Write a menu driven program to implement different operations of linear queue using array.

9. Write a program to implement a single linked list of containing only integers. Divide the list to produce a linked list of even number nodes and another odd number nodes.

10. Write a program to implement a binary search tree.

(*Continued*)

11. Write a program to implement quick sort algorithm.

12. Write to program to implement a sparse matrix.

13. Write a menu driven program for a doubly linked list to delete a node at beginning, at a given position and at the end of the linked list.

14. Write a program to evaluate a postfix expression. Mention time complexity to evaluate an expression using your approach.

15. Write a program to implement quick sort.

16. What is balancing factor ? Write a program to inset an element to a AVL tree. (You need to implement AVL first).

$$\begin{bmatrix} \text{Viva - voce} & -10 \\ \text{PNB} & -05 \end{bmatrix}$$