

## Data Structures

Con. 2835-07.

[REVISED COURSE]

ND-428

(3 Hours)

[Total Marks : 100]

N.B. (1) Question No.1 is compulsory.

(2) Attempt any **four** questions from question Nos. 2 to 7.(3) **All** questions carry **equal** marks.(4) Assume **suitable** data if required.

1.A) Write a program to create a STACK ADT using linked list implementation which support:

a) Create Stack      b) Push Stack    c) Pop Stack    d) Destroy Stack.      10

B) Discuss the Huffman algorithm & apply encoding method to sentence 'AURANGABAD'      10

2.A) Write a program to convert PREFIX expression to POSTFIX expression.    10

B) Discuss circular & priority queues.      10

3.A) What are the different ways of traversing a binary tree? Give routines for the same.      10

B) Write a program to create DOUBLY LINKED LIST which performs the operations like:

a) Insert into list      b) Delete from a list    c) Search item in list.      10

4.A) Write a program to implement QUEUE using linked list representation. Give functions to carry out different queue operations.      10

B) Discuss

a) Functions & Macros in C    b) Structures in C.      10

5.A) Discuss file I/O in C language with different library functions.      10

B) Write a C function to delete a node from binary search tree. Explain with examples by considering all cases.      10

6.A) How do represent arithmetic expression using binary tree? Write a C function to that accepts a pointer to such tree & returns value of the expression represented by the tree.      10

B) Discuss inorder, preorder & postorder.      10

7. Write short notes :      20

a) Game tree    b) Threaded binary tree

c) Dynamic memory & pointers in C language.