

Roll No.

Total Pages : 02

GSM/D-23
DATA STRUCTURES
BCA-232

1128

Time : Three Hours]

[Maximum Marks : 80

Note : Attempt *Five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

Compulsory Question

1. (a) Define data structure and its applications. 4
- (b) Explain Linear Array. 4
- (c) Differentiate between Stack and Queue. 4
- (d) Define complete binary tree. 4

Unit I

2. What do you mean by data structure ? Explain various categories of data structure. Also explain various operations of data structure. 16
3. Define string. Explain various string operations by taking suitable example. 16

(7-07/6) L-1128

P.T.O.

Unit II

4. What is circular linked list ? Write an algorithm to insert a node at the beginning of circular linked list. 16
5. (a) Write down the algorithm for searching in a linked list. 8
- (b) State the difference between array and linked list. 8

Unit III

6. Convert infix to postfix using stack : 16
- $$A + (B * C - (D / E^F) * G) * H$$
7. Write an algorithm to insert an element in Circular queue. 16

Unit IV

8. What is binary tree ? Explain the representation of binary tree. Explain the different operations on a binary tree. 16
9. Define graph. Explain two methods of storing graph in computer memory by giving suitable example. 16