No. of Printed Pages : 03 **Roll No. .....**

C-214

B.C.A. EXAMINATION, Dec. 2017

(Third Semester)

(B. Scheme) (Main & Re-appear)

(BCA)

BCA-207-B

DATA STRUCTURES

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. Define Data Structures. Explain complexity of algorithm and time-space tradeoff with example.

2. Describe the following :

(a) Data Structure Operations

(b) Applications of Data Structures.

Unit II

3. Write the algorithm for traversing, searching and deleting item from circular header list.

4. Explain bubble sort algorithm with example.

Unit III

5. Write the steps for converting following infix expression into equivalent postfix expression :

Q : ((A + B) *D) ↑ (E – F)

6. Explain insertion and deletion of an item from Queue.

Unit IV

7. Explain the following :

(a) Binary tree and complete binary tree

(b) Traversing binary tree

(c) Threads.

8. Explain sequential representation of graphs, adjacency matrix and path matrix.