Seat No:_____ **Enrollment No:_____**

PARUL UNIVERSITY

FACULTY OF IT & COMPUTER SCIENCE

BCA Summer 2016 – 17 Examination

Semester: 2 **Date: 31/05/2017**
Subject Code: 05101152 **Time: 10.00am to 01.00 pm**
Subject Name: Data Structures **Total Marks: 60**

Instructions:
1. Attempt all questions from each section.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Write section-A, section-B on separate answer sheets.

SECTION-A

Q.1 Answer the following **(10)**

a) Explain in detail the classification of data structures

b) Explain in detail the organization and working of one dimensional arrays along with their advantages and disadvantages.

Q.2 Answer the following

a) Explain the Record oriented fixed storage of strings with example along with advantages and disadvantages. **(05)**

b) Mention and briefly explain in 1-2 lines the basic operations on a typical data structure. **(05)**

OR

b) Write a short note on: Time and Space Complexity of Algorithms. **(05)**

Q.3 Answer the following **(10)**

a) Write a short note on: 2 Dimensional Arrays with example.

b) Explain the organization, operations and working of a Queue.

OR

Q.3 Answer the following **(10)**

a) Explain the following operations for a one dimensional array for any arbitrary position:
   1) Insertion
   2) Deletion

b) Write a short note on: Doubly Linked List

SECTION-B

Q.1 Answer the following **(10)**

a) Explain the working of Bubble Sort algorithm with example.

b) Explain Binary Search algorithm with example.

Q.2 Answer the following

a) Explain different approaches for traversing through a binary tree. **(05)**

b) Explain the working of Depth First Search for a graph with example. **(05)**

OR

b) Explain the working of Breadth First Search for a graph with example. **(05)**

Q.3 Answer the following **(10)**

a) Explain Linear Search with example.

b) Write a short note on: Indexed Sequential File Organization

OR

Q.3 Answer the following **(10)**

a) Write a short note on: Heap.

b) Write a short note on: AVL Search Tree