

Roll No.

Total No. of Pages : 02

Total No. of Questions : 07

**BCA (Sem.-2)**  
**DATA STRUCTURES**  
Subject Code : BC-204  
Paper ID : [B0208]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **SIX** questions carrying **TEN** marks each and students have to attempt any **FOUR** questions.

**SECTION-A**

**1. Answer briefly :**

- a) Define problem analysis.
- b) What are Circular Queue and Priority Queue?
- c) Write the definition of Big O notation?
- d) What are applications of double Linked List?
- e) Discuss garbage collection.
- f) What is Binary tree and its properties?
- g) Write any two applications of Tree?
- h) Why heap sort is used?
- i) What are advantages of insertion sort?
- j) What is complexity of Binary Search?

## SECTION-B

- Q2 What is Data Structure? Explain various types of Data Structure in detail.
- Q3 What do you mean by Link list? Write an algorithm to insert and delete a node in Singly Linked List.
- Q4 List the applications of Stack? Explain Recursion to find a factorial of number.
- Q5 Why is threaded binary tree required? Give the brief introduction to threaded Binary trees.
- Q6 Explain the process of traversing a binary tree using non- recursive procedures.
- Q7 Write an algorithm to sort an array of integers in the descending order using selection sort.