29394

Subject: I.T   **Paper: Data Structures and Algorithm (CMPC-203)**

Time Allowed: 02:30 Hours   Maximum Marks: 60

Note: Objective part is compulsory. Attempt any three questions from subjective part.

Objective Part   (Compulsory)

Q.1.   Write short answers of the following in 2-3 lines each on your answer sheet.   (2*12)
  - i.   Write the name of two non-linear data structure.
  - ii.   Which principles are used in stack and queue data structure?
  - iii.   Write the name of two sorting algorithms that use recursion.
  - iv.   What is meant by asymptotic notations?
  - v.   Write the name of two graph traversing algorithms.
  - vi.   What do you mean by ADT?
  - vii.   Why parenthesis is not used in postfix notation?
  - viii.   Write name of non-linear data structure that uses priority queue.
  - ix.   Write the name of data structure that has no null pointer.
  - x.   Declare the structure of node in doubly linked list.
  - xi.   Define Hashing.
  - xii.   What is necessary for binary search?

Subjective Part   (3*12)

Q.2.   a) What is benefit of using linked implementation of nodes over an array?
  b) Write a function in java that searches an element from an array using binary search iteratively.

Q.3.   Write a function in JAVA that is passed the reference of first node of doubly linked list and adds a node as last node in doubly linked list.

Q.4.   What is hashing? Describe any two collision Resolution techniques.

Q.5.   Make a BST using following sequence of numbers and traverse it by using all types of traversal algorithms.

          45, 32, 90, 21, 78, 77, 81, 132, 90, 96, 25, 110, 36

Q.6.   Write a program to add and delete an element from circular queue.