

**BACHELOR IN COMPUTER  
APPLICATIONS**

**Term-End Examination**

**June, 2012**

**CS-62 : 'C' PROGRAMMING AND DATA  
STRUCTURE**

*Time : 2 hours*

*Maximum Marks : 60*

---

*Note : Question number 1 is Compulsory. Answer any three questions from the rest. All algorithms should be written nearer to 'C' language.*

---

1. (a) Write an algorithm to add two polynomials using arrays. Assume that the first polynomial has M terms and the second polynomial has N terms. 10
- (b) Write any five advantages/disadvantages of Doubly Linked Lists over singly linked lists. Write a program in 'C' to merge two singly linked lists. 10
- (c) Write an algorithm for implementation of a circular queue. 10
  
2. (a) Write Kruskals algorithm for finding the minimum cost spanning tree. 5
- (b) Write an algorithm to compute the transpose of a matrix. 5

3. (a) Write an algorithm for implementation of Insertion sort. 5
- (b) Sort the following sequence of numbers by applying insertion sort : 5  
14, 18, 1, 2, 6, 9, 7, 3
4. (a) Define an AVL tree. Construct a height balanced tree for the following list of elements : 7  
3, 5, 11, 9, 4, 2, 15, 7, 2, 6, 10
- (b) Write any three differences between a tree and a binary tree. 3
5. (a) Write an algorithm to convert an infix expression to a postfix expression. 5
- (b) Explain indexed sequential file organisation. 5
-