

**BACHELOR OF COMPUTER
APPLICATIONS (PRE-REVISED)****Term-End Examination****December, 2012****CS-62 : 'C' PROGRAMMING AND DATA
STRUCTURES***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) What do you mean by command-line arguments? Write a 'C' program to reverse a string using command line arguments. **10**
- (b) Write an algorithm for Bubble sort. Apply Bubble sort algorithm for the following list of elements : **10**
17, 36, 95, 25, 54, 72, 68
- (c) What is garbage collection? Explain Fragmentation, Compaction and Relocation with respect to garbage collection. **10**
2. (a) Write any five advantages/disadvantages of singly linked lists over arrays. **5**
- (b) Write an algorithm for the addition of two matrices. **5**

3. (a) Construct a height balanced tree for the following list of elements : 5
2, 6, 13, 8, 4, 3, 18, 7, 1, 8, 11
- (b) Write any five advantages/disadvantages of circular queue over linear queue. 5
4. (a) Construct a Binary tree using the following preorder and inorder sequences : 8
Preorder : ABCEIFJDGHLK
Inorder : EICFJBGDKHLA
- (b) Write the formula for finding the location of an element in an array in which elements are stored using row major order. 2
5. (a) Explain "Union" data type in 'C'. Also, explain "Struct" data type in 'C'. Give an example of each. 5
- (b) What are Breadth first search and Depth first search ? What are the differences between them ? 5
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