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KAL-1411 Seat No._____

B. C. A. (Sem. IV) Examination

April / May – 2013

BCA - 401 : Data Structure

(New Course)

Time : **3** Hours] [Total Marks : **70**

1 (a) Do as directed : **6**

(1) Define string, array.

(2) Difference between primitive and non primitive data structure.

(3) Define Algorithm and Data structure.

(b) Attempt any two : **12**

(1) Explain Linear Data structure in detail.

(2) Write an algorithm to find length and compare two string.

(3) Explain time and space efficiency Algo. with example.

2 (a) Do as directed : **5**

(1) Define priority queue.

(2) List out application of Link-list.

(3) Define polish notation.

(4) Write : Disadvantage of stack.

(5) Difference : IRD Vs. ORD.

(b) Attempt any three : **12**

(1) Write algo. of PUSH( ) and PEEP( ) operation of STACK.

(2) Write an algo. to INSERT element in circular Queue.

(3) Explain various types of link-list.

(4) Write an algo. to DELETE element from doubly link list.

3 (a) Define following term : **6**

(1) Loop
(2) Leaf Node
(3) Forest
(4) Weighted Graph
(5) Complete Binary Tree
(6) Degree of Node.

(b) Attempt any two : **12**

(1) Write an algo. of insertion in BST.
(2) Explain BFS with example and an algo.
(3) Explain AVL and Threaded Binary Tree.

4 (a) Do as directed : **5**

(1) Define : Collision.
(2) Difference : In selection sort Vs. Bubble sort
(3) What is sequential file ?
(4) List out Hashing techniques.
(5) Which sorting method is best ? Why ?

(b) Attempt any three : **12**

(1) Write an algo. of Binary search.
(2) Short the following data using Radix sort :
972, 414, 826, 7981, 4511, 7188, 53, 49, 4775.
(3) Explain index file.
(4) Write an algo. shell sort.
