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PR-601 Seat No. 1756

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

April / May - 2016

BCA - 401 : Data Structure

Time : 3 Hours] [Total Marks : 70

1 (a) Answer the following. 6

(1) Define : Data Structure.

(2) What is Primitive data structure ?

(3) Define : Algorithm.

(b) Answer the following. (Any Two) 12

(1) Explain Time and Space efficiency of an algorithm with example.

(2) Explain Linear and Non-Linear data structure in detail.

(3) Explain any two string manipulation functions with syntax and example.

2 (a) Answer the following. 5

(1) Compare stack and Queue.

(2) Write short note on priority queue.

(b) Answer the following. (Any two) **12**

(1) Write an algorithm to insert and remove an element from circular queue.

(2) Write an algorithm to remove an element from Doubly linked list.

(3) Explain the concept of multi-linked structure.

3 (a) Define the following terms. **6**

(1) Weighted graph.

(2) Edge.

(3) Loop.

(4) Forest.

(5) Null graph.

(6) Isolated node.

(b) Answer the following. (Any two) **12**

(1) Differentiate BFS and OFS. Also write an algorithm of BFS.

(2) Write an algorithm to delete an element from binary search tree.

(3) Explain AUL tree. How do you insert an element into a balanced tree ?

4 (a) Explain the following. **5**

(1) Hashing.

(2) Linear search Techinque.

(b) Answer the following. (Any two) **12**

(1) What is Collision ? Explain any one method to resolve collision.

(2) What is sorting ? Write an algorithm to sort data using Radix sort.

(3) Exlain Quick sort with suitable example.
