Total No. of Questions—**4**] [Total No. of Printed Pages—**3**

Seat No.	

[4966]-2001

MCA (Commerce Faculty) (Second Semester) EXAMINATION, 2016

CAC-201 : DATA STRUCTURE USING CREDIT SYSTEM

(2013 PATTERN)

Time : Three Hours **Maximum Marks : 50**

N.B. **:—** (*i*) Attempt *All* questions.

(*ii*) Figures to the right indicate full marks.

1. (A) Attempt any *three* : [12]

(*a*) Write an algorithm for insertion sort.

(*b*) Write C function to insert a node in between and to delete a node at begining of singly link list dynamically.

(*c*) Explain primitive operations performed on the stack with help of an example. Write applications of stack.

(*d*) List and explain different types of rotations in an AVC tree with suitable example.

(B) Attempt any *one* : [2]

(*a*) Write a note on flash function.

(*b*) Define Abstract data type.

2. Attempt any *three* : [12]

(*a*) Write a note on Dqueue.

P.T.O.

(*b*) Explain graph traversal methods.

(*c*) Write a non-recursive 'C' program for binary search.

(*d*) Write a 'C' function to insert a node at the begining and display all nodes of circular doubly link list.

3. Attempt any *three* : [12]

(*a*) Convert ((((A + B) / C) * D) * E) into postfix expression. Show stacks contents at each step.

(*b*) Define :

(*i*) Ancestor

(*ii*) Proper ancestor

(*iii*) Level of node

(*iv*) Descendent.

(*c*) Explain priority queue with an example.

(*d*) Define an array. Explain how an array can be represented with an example.

4. Attempt any *three* : [12]

(*a*) Construct binary search tree for the following and also traverse the tree using inorder, preorder and postorder traversals :

80, 60, 105, 70, 85, 100, 20, 10, 30.

(*b*) Define :

(*i*) Time complexity

(*ii*) Degree of vertex

(*iii*) Indegree and outdegree

(*iv*) Omega notation.

(*c*) Explain generalized link list with an example.

(*d*) Write C program to sort strings using bubble sort method.