**Code : MC1.3**

**MCA I Semester Supplementary Examinations, August 2010**
**DATA STRUCTURES**
**(For students admitted in 2004 & 2005 only)**

**Time: 3 hours** **Max Marks: 60**

**Answer any FIVE questions**
**All questions carry equal marks**

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1. (a) Write a function in C to calculate GCD of given two integers.
   (b) Write a program in C for multiplying two matrices using arrays.
2. (a) What is a circular linked list? Write routines for inserting and deleting elements in single circular linked list.
   (b) Explain how the polynomials can be represented using single linked list with an example.
3. (a) Write a function in that returns the factorial of a give number using recursion.
   (b) How do you represent stacks using linked lists ? Write routines for adding and deleting elements in a stacked represented using linked list.
4. (a) What are priority queues? Explain in detail with example.
   (b) Write any four applications of queues.
5. Write a routine for sorting given elements using quick sort method. Explain the working of the routing with an example.
6. Explain about different hashing techniques in detail.
7. (a) What is a binary search tree? How do you insert an element into a binany search tree? Explain with an example.
   (b) Write the non recursive in order traversal in a binary tree.
8. (a) What are threaded binary trees? Explain with example.
   (b) Explain about heaps.



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