MCA–643 MCA-03/ PGDCA-02

M.C.A./P.G.D.C.A. DEGREE/DIPLOMA EXAMINATION – JUNE 2008.

First Year/First Semester

DATA STRUCTURES THROUGH C

Time : 3 hours Maximum marks : 60/75

Answer for 5 marks questions should not exceed 2 pages.

Answer for 10/15 marks questions should not exceed 5 pages.

PART A — $(4 \times 5 = 20)/(5 \times 5 = 25)$

Candidates with Enrolment Number starting with A4 MCA and C5 MCA have to answer any FOUR from the Questions 1 to 6, all other candidates have to answer any FIVE from questions 1 to 7 in Part A.

1. List the various types of constants available in 'C'. Explain with examples.

2. Explain the syntax and use of do-while loop with an example.

3. What is a Queue? How will you check whether the Queue is full or empty? Discuss.

4. Define Sorting? What are the factors to be considered while choosing a sorting technique?

5. Explain storage classes in 'C' with examples.

6. What is meant by binary tree traversal? Explain any two traversals with suitable examples.

7. State the advantages, disadvantages and applications of linked list.

PART B — (4 × 10 = 40)/(5 × 10 = 50)

Candidates with Enrolment Number starting with A4 MCA and C5 MCA should answer any FOUR from the questions 8 to 13 and all other candidates should answer any FIVE from the questions 8 to 14 in Part B.

8. List out the logical operators and relational operators available in C and explain their use with suitable examples.

9. Describe in detail the various operations performed on a stack with algorithm.

10. Develop an algorithm for Binary Search.

11. What is meant by traversing a graph? Write the algorithm for Depth-first search and explain.

12. What are the standard files that are accessed when a program begins its execution? List out the important file handling functions available in 'C'.

13. With relevant example discuss call by value and call by reference.

14. Explain by giving suitable examples Balanced binary Trees and B-Trees.

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