

II Semester M.C.A. Examination, June 2016
(CBCS)
COMPUTER SCIENCE
MCA – 201 T : Data Structures

Time : 3 Hours

Max. Marks : 70

PART - A

Answer **any five** questions.

(5×6=30)

1. What are Asymptotic notations ? Explain.
2. Define data structure and explain various operations on data structures.
3. Explain with an algorithm traversal of linear arrays.
4. Sort the given elements using bubble sort : 99, 88, 77, 66, 55, 44, 33, 22.
5. Explain the insertion and deletion operations in a Singly linked list.
6. Convert the given infix expression into its postfix form : $A/(B + C) + D + E - A \wedge C$.
7. Write a recursive function to calculate Fibonacci series.
8. Give the algorithm for DFS.

PART - B

Answer **any four** questions.

(4×10=40)

9. a) Explain Boyer-Moore string pattern matching algorithm. 6
b) What are Abstract data types ? 4
10. a) Explain Binary search technique with the algorithm. 6
b) Explain sparse matrices. 4

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| 11. Explain types of Linked lists with examples | 10 |
| 12. a) Differentiate between circular queue and double ended queue | 4 |
| b) Explain push and pop operations on stack | 6 |
| 13. With relevant functions explain tree traversal techniques. | 10 |
| 14. Write short notes on | |
| a) Heap Sort. | 6 |
| b) Applications of Stacks. | 4 |
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