15093

M.Sc. DEGREE EXAMINATION, OCTOBER/NOVEMBER 2015.

FIRST SEMESTER

Computer Science

Paper III — DATA STRUCTURES

Time : Three hours Maximum : 75 mark

(No additional sheet will be supplied)

PART A — (5 × 3 = 15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should not exceed 1 page.

1. What is Time complexity?
2. What is compaction?
3. What is a forest?
4. What are the representations of graph?
5. What are the applications of sets?
6. How memory is allocated internally for a 2D array?
7. What is dynamic memory allocation?
8. What is recursion? How is it handled?

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. What is a data structure? Types? Explain.

Or

10. What is a pointer? Explain the use of array of pointers.
11. What are the operations performed on queues? Applications?

Or

12. Discuss the use of stack in converting an infix expression to post fix and its evaluation.

13. Explain the use of B+ tree in indexing.

Or

14. What is a tree? Types? Explain the operations performed on trees.

15. Explain Prims and Kruskals algorithms with examples.

Or

16. Explain breadth first search and depth first search and apply it on the given graph.