MAY 2011 **P/ID 17409/RBK**

Time : Three hours Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

1. (a) What do you mean by primitive and composite data types? Discuss with examples.

Or

(b) What is abstract data? Discuss with examples.

2. (a) What is ordered list? List the operations that are performed on these lists.

Or

(b) What is sparse matrices? Discuss with example.

3. (a) What is linked list? Give examples. List the advantages and disadvantages of linked list.

Or

(b) What is doubly linked lists? Discuss with examples.

4. (a) What is a binary tree? Draw a full binary tree of depth 4 and discuss.

Or

(b) What is adjacency list? Discuss.

5. (a) What do you mean by variable length record? Discuss with examples.

Or

(b) What is hashing? Discuss any one hashing techniques.

PART B — ($5 \times 10 = 50$ marks)

Answer any FIVE questions.

All questions carry equal marks.

6. What do you mean by time and space complexity? Write a short note on the time complexity of an algorithm.

7. What is an array? With examples discuss how to represent two and three dimensional arrays.

8. What is stack? List the applications of stack. Discuss with an example how expressions are evaluated using stack.

9. What is dynamic storage management? Discuss.

10. Discuss on the following :

    (a) compaction

    (b) circular linked list.

11. Discuss the different graph traversals.

12. (a) What is a spanning tree? Discuss.

    (b) With an example discuss that every tree can be represented as a binary tree.

13. Write a short note on the following :

    (a) ISAM

    (b) Multilists.

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