

# Data Structure Algorithm - 2012

Note- Attempt all questions.

## (Section - A: Objective Type Questions)

1. Choose the correct answer.

- (i) Representation of Data structure in Memory is known as-
  - (a) Recursive
  - (b) Abstract data type
  - (c) File structure
  - (d) Storage structure
- (ii) Queue is a form of -
  - (a) FIFO
  - (b) LIFO
  - (c) Random manner
  - (d) None of above
- (iii) The extra key inserted at end of array is called a -
  - (a) END key
  - (b) Stop key
  - (c) Sentinel
  - (d) Transposition
- (iv) Quick sort is also known as-
  - (a) Heap sort
  - (b) Bubble sort
  - (c) Merge sort
  - (d) More of above
- (v) Which one is linear Data structure-
  - (a) Graph
  - (b) Tree
  - (c) Linked list
  - (d) MST

## (Section - B: Short Answer Type Questions)

- 2. What are the various classification of Data structure.
- Or Define Priority Queue and its applications.
- 3. What is Header linked list. How it is differ from linked list.
- Or Define chaining and its applications.
- 4. How a multi diversional Array is represented in Memory.
- Or Explain advantages and disadvantage of Linked list over an array.

- 5. Define Binary search procedure.
- Or Explain  $B^-$ ,  $B^+$  and AVL Tree.
- 6. Define Minimum spanning tree.
- Or List the complexity of Quick sort, Merge sort, Bubble sort.

## (Section-C: Long Answer type Questions)

- 7. Write a program to reverse the array element.
- Or Write an algorithm to calculate multiplication of two matrix. Also discusses complexity of IT.
- 8. Transform the following expression to prefix and postfix form  $A - B / (C * D ^ E)$ .
- Or Evaluate the following postfix expression using stack. 5, 4, 6, +, \*, 4, 9, 3, /, +, \*.
- 9. Write an algorithm to add two polynomial using Linked List.
- Or Explain In order and post order tree traversal using good example.
- 10. Write procedure for various left thread binary tree traversal operation.
- Or Perform Bubble sort on following item list and sort the list- 55, 44, 33, 1, 2, 3, 99.
- 11. What is Graph. Discuss graph representation method in memory using Multi List and adjacency Matrix.
- Or Write procedure to add a Node in binary search tree.