PVP 14

Code: IT312

II B.Tech - I Semester – Regular Examinations – December 2015

CLASSIC DATA STRUCTURES
(INFORMATION TECHNOLOGY)

Duration: 3 hours Max. Marks: 70

PART – A

Answer ***all*** the questions. All questions carry equal marks

11x 2 = 22 M

1. a) Define Abstract data type.
   b) Give the best and worst time complexity of Quick sort.
   c) How do we represent sparse matrices?
   d) List the drawbacks of linked list.
   e) What are the differences between stack and queue?
   f) List the applications of stack.
   g) Differentiate linear data structures and nonlinear data structures.
   h) What is complete binary tree?
   i) What is the height of a leaf node in a binary tree?
   j) How many nodes could be there in a n- level binary tree?
   k) Define a graph.

PART – B

Answer any ***THREE*** questions. All questions carry equal marks. 3 x 16 = 48 M

2. a) Sort the following elements using Radix sort. 8 M
   23, 543, 67, 39, 8, 46, 877, 5, 10, 100.

   b) Explain briefly about Recursive algorithms. 8 M

3. a) Define double linked list. Explain its operations. 8 M

   b) Write an algorithm for operations for circular linked list. 8 M

4. a) Write a program to evaluate postfix expression. 8 M

   b) Explain queue and its operations. 8 M

5. a) Mention the properties of binary trees. 8 M

   b) Explain search strategies in a Binary search tree. 8 M

6. a) Explain Elementary Graph operations. 8 M

   b) Explain Breadth first search and Depth First search with an example. 8 M