

Code No: 09A30502

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD**B.Tech II Year I Semester Examinations, June/July-2014****DATA STRUCTURES THROUGH C++****(Common to CSE, IT)****Time: 3 hours****Max. Marks: 75**

Answer any five questions
All questions carry equal marks

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- 1.a) Define destructor. Can constructor and destructor can be called explicitly.
- b) Define this pointer. Illustrate its use using a sample program.
- 2.a) Define function overloading. Write a program to illustrate by finding the area of circle, square, rectangle, and triangle.
- b) What is a pure virtual function? Write a program to illustrate it.
3. Define Queue ADT. Write a c++ program to implement Queue ADT using class templates.
- 4.a) Define hashing. Explain any three hash functions.
- b) The following elements are inserted into an initially empty hash table of size 13 using hash function $H(x) = (3*x + 2)\%13$ and linear probing. Give the hash table?
100, 12, 65, 234, 68, 93, 87 and 74.
5. What is an external sorting? Explain in detail about poly phase merge.
- 6.a) Preorder traversal of a binary search tree is 14, 2, 1, 3, 6, 5, 7 draw the tree and give its post order.
- b) Give the array representation of the binary tree of the above question.
- 7.a) Write an algorithm to traverse a graph using BFS. Explain with an example.
- b) Explain about array representation of a graph with an example.
8. Write short notes on:
 - a) Standard tries
 - b) Compressed tries
 - c) Suffix tries.

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