JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech II Year I Semester Examinations, March - 2017
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) What is constructor? Explain the different types of constructors with an example.
 b) Write a program to declare three classes. Declare integer array as data member in each class. Perform addition of two data member arrays into array of third class. Use friend function. [7+8]

2.a) Explain the different types of inheritances with an example.
 b) Define function overloading. Write a program to illustrate by finding the area of circle, square, rectangle and triangle. [7+8]

3.a) Convert the infix expression a/b-c+d*e-a*c into postfix expression. Write a function to evaluate that postfix expression and trace that for given data a=6, b=3, c=1, d=2, e=4.
 b) Give the limitations of ordinary queue and how it is solved in circular queue. Explain the same. Explain with suitable example how would you implement circular queue using dynamically allocated arrays. [7+8]

4.a) Explain about the operations of skip list with an example.
 b) Explain about the Hash functions in detail. [8+7]

5.a) Explain about the Multiway merge with an example.
 b) Write a function to delete an element from the heap. [8+7]

6.a) Write a function for rotations of AVL tree.
 b) Explain the deletion operation of binary search tree with an example. [8+7]

7.a) Differentiate between BFS and DFS with an example.
 b) Write a function to insert an element into the B-Tree. [7+8]

8.a) Consider the text = "ramaniikesmangores" and the pattern = "mango" by using KMP.
 b) Explain about the suffix trie with an example. [7+8]

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