

00661

**ADVANCED DIPLOMA IN INFORMATION
TECHNOLOGY (ADIT)/BACHELOR IN
INFORMATION TECHNOLOGY (BIT)
(ADIT/BIT)**

**Term-End Examination
December, 2011**

**CST-103 : DATA STRUCTURE AND
ALGORITHMS**

Time : 2 hours

Maximum Marks : 50

Note : *There are two sections in this paper. All questions in Section - A are compulsory. Answer any two questions from Section - B.*

SECTION - A

5x1=5

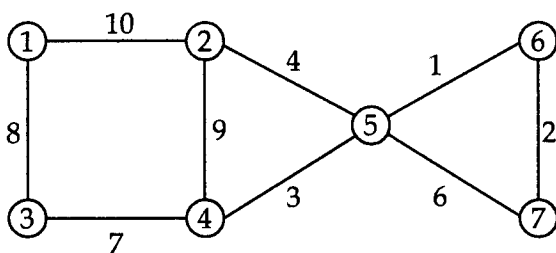
1. State True/False for the following statements :
- (a) Stacks follow LIFO principle
 - (b) In a Doubly Linked List, it is possible to navigate forward and backward.
 - (c) Arrays can be three dimensional
 - (d) The complexity of Bubble sort is $O(n^2)$
Where 'n' is the number of elements to be sorted.
 - (e) It is possible to create a Binary Tree from any given tree

2. Define Stack. Define Queue. Explain any three differences between Stack and Queue. 10
3. Explain the row major order and column major order representations of an array using an example. 11

SECTION - B

Note : Answer *any two* questions from this section :

4. Write an algorithm for preorder traversal of a Binary tree. 12
5. Draw the minimum cost spanning tree for the following graph. Also, indicate the minimum cost. 12



6. Write an alg. for the multiplication of two sparse matrices. 12
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