Examination	:Block Sessional	**Seat No.**	: _____
Date	: 19/04/2016	**Day**	:Tuesday
Time	:	**Max. Marks**	: 36

INSTRUCTIONS:
1. Figures to the right indicate maximum marks for that question.
2. The symbols used carry their usual meanings.
3. Assume suitable data, if required & mention them clearly.
4. Draw neat sketches wherever necessary.

Q.1   Do as directed.   **[12]**

(a) Draw Digital Search Tree (DST) using following data: **[2]**

00001 10011 00101 10010 00011 10100

(b) The post order traversal of binary tree is DEBFCA. Find pre order traversal.   **[2]**

(c) In a circular queue the value of r will be...   **[1]**
A) r=r+1 B) r=(r+1)% [QUEUE_SIZE – 1]
 C) r=(r+1)% QUEUE_SIZE   D) r=(r-1)% QUEUE_SIZE

(d) Explain two techniques of hashing with example   **[2]**

(e) Write down real world application for the following data structure   **[2]**
1) Doubly link list 2) graph 3) heap tree 4) Binary search tree

(f) Explain different tries structure with example.   **[2]**

(g) The running time of quick sort largely depends on   **[1]**
1) number of inputs 2) selection of pivot element 3) size of elements 4) space available
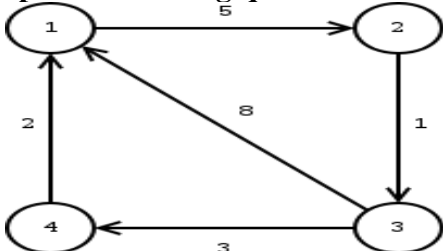
Q-2   Attempt any two from the following questions.
[a] Write down algorithm for the following problem   **[6]**
        1) Insertion 2) Deletion 3) Insert Before
[b] Write down algorithm/Code to insert right child in threaded binary tree **[6]**
[c] Write down algorithm/Code for Quick sort   **[6]**

Q.3   Attempt the following questions.   **[12]**
(a) Draw the Red black tree for the following data   **[6]**
2,1,4,5,9,3,6
 [note: show each tree during every insertion]
(b) Write down algorithm of DFS and show traversal of BFS and DFS on Graph given in   **[6]**
figure Q3(a)

OR

Q.3   Attempt the following questions.   **[12]**
(a)   **[6]**

Find all pair shortest path using dijkstra's all pair shortest path algorithm. Draw all matrixes during transition.
(b) Draw AVL tree for the following data: **[6]**
 9, 27, 50, 15, 2, 21, and 36 [note: show each tree during every insertion]