JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- Oct 2017

B.Tech (BI) V Semester

COURSE CODE: 10B11CI411

COURSE NAME: Fundamentals of Algorithms

MAX. MARKS:25

COURSE CREDITS: 4

MAX. TIME: One Hour Thirty Minutes

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

1. What is linear time sorting? Explain counting sort algorithm and its complexity.

    [2+4] co3

2. Write the properties of red black tree? Construct a red black tree for following numbers:
    13,8, 20, 9, 17, 4, 15, 10, 7, 22, 3, 12

    [2 + 6]co4

3. Write down the methods for insertion and searching in a skip list.   [2+2]co4

4. Compute a Breadth-First Search Tree and a Depth-First Search Tree beginning at A for the given graph (show intermediate steps also). Is that the only BFS Tree and only DFS Tree rooted at A for this graph?

    [3+3+1]co5