**Jaypee University of Engineering and Technology**

**18B11CI311 – Data Structures**

**B.Tech -3rd Semester**

**Tutorial – 4**

**Searching Algorithms**

1. Find out the complexity of following algorithm
2. For I=1 to n
3. For J=1 to n
4. k = b[I]
5. F = Linear\_search(a,k)
6. Print F
7. J=J\*2

1. Write the recurrence relation of recursive binary search algorithm and solve it using backward-substitution method.
2. Write the recursive algorithm for linear search. Obtain the recurrence relation from the recursive linear search and then solve it using backward-substitution method.
3. Given an array A = {20,30,45,77,89,90,94,99,100, 150} apply all the steps of binary search when following key values are searched:
   * 1. Key=10
     2. Key=152
     3. Key=45
     4. Key=89

From above, mention the best, average and worst case situations for binary search.