**Experiment No. : 8**

**Title: 15 puzzle problem using Branch and bound**

**Batch: Roll No.: Experiment No.:**

**Aim:** To Implement 8/15 puzzle problem using Branch and bound.

**Algorithm of 15 puzzle problem using Branch and bound:**

**Working of 15 puzzle problem using Branch and bound:**

**Problem Statement**

Find the following 15 puzzle problem using branch and bound technique and show each steps in detail using state space tree.



**Also verify your answer by simulating steps of same question on following link.**

[**http://www.sfu.ca/~jtmulhol/math302/puzzles-15.html**](http://www.sfu.ca/~jtmulhol/math302/puzzles-15.html)

**Solution**

**Derivation of 15 puzzle problem using Branch and bound:**

Time complexity Analysis

**Program(s) of 15 puzzle problem using Branch and bound:**

**Output(o) of 15 puzzle problem using Branch and bound:**

**Post Lab Questions:-** Explain how to solve the Knapsack problem using branch and bound.

**Conclusion: (Based on the observations):**

**Outcome:**

**References:**

1. Richard E. Neapolitan, " Foundation of Algorithms ", 5th Edition 2016, Jones & Bartlett Students Edition
2. Harsh Bhasin , " Algorithms : Design & Analysis", 1st Edition 2013, Oxford Higher education, India
3. T.H. Coreman ,C.E. Leiserson,R.L. Rivest, and C. Stein, " Introduction to algorithms", 3rd Edition 2009, Prentice Hall India Publication
4. Jon Kleinberg, Eva Tardos, " Algorithm Design", 10th Edition 2013, Pearson India Education Services Pvt. Ltd.