**Assignment 15**

**Priority Queue Sorting and SCI**

I have chosen priority queue sorting for this analysis. We can use this to sort comparable elements or other elements with sortable keys. It uses a heap-based operations for sorting the keys. The space used is *O(n),* insertItem and removeMin is *O(log n)*, accessing the minKey or minElement is *O(1)*, so the efficiency of this sorting is *O(n log n)*. It stores items (key and element) and it is much faster than other in-place sorting algorithms.

There are 16 Principles of science of creative Intelligence

1. The nature of life is to grow.  
2. Order is present everywhere.  
3. Life is found in layers.  
4. Outer depends on inner.  
5. Seek the highest first.  
6. Rest and activity are the steps of progress.  
7. Enjoy greater efficiency and accomplish more.  
8. Every action has a reaction.  
9. Purification leads to progress.  
10. The field of all possibilities is the source of all solutions.  
11. Thought leads to action, action leads to achievement, and achievement leads to fulfillment.  
12. Knowledge is gained from inside and outside.  
13. Knowledge is structured in consciousness.  
14. Harmony exists in diversity.  
15. The whole is contained in every part.  
16. The whole is greater than the sum of the parts.

Among these principles, this algorithm is related to;

2. Order is present everywhere.

Nature is naturally balanced and functions properly within individual or in a whole unless we ignore the natural laws.

Even though the inputs are in any order, the priority queue helps us to sort them in a proper order and return a sorted object.

7. Enjoy greater efficiency and accomplish more.

Nature does not need to do anything extra to return to its original full-functioning state. It does less of what gets in the way.

The efficiency of priority queue is *O(n log n)* which is the optimum efficiency in sorting and highest efficiency.