

**Computer Science and Engineering & Information
Technology (2nd Year B.Tech.)
IIIT Kalyani, West Bengal**

Operating System Lab (CS 411): (Spring: 2019-2020)

Assignment - 5

Marks: 10

Assignment Out: 14th February, 2020

Write a C++ program that does the following:

1. It reads a positive integer n .
2. Creates a System V shared memory to store n data of type `int`.
3. Reads n data in the shared memory (as 1-D array).
4. Creates two child processes c_1 and c_2 . The child process c_1 sorts the first half of the array using *insertion sort* and the child process c_2 sorts the other half.
5. After the sorting is over, the parent process merges both the half to get the final sorted array and prints it.
6. Write your own sorting function.
7. Data can be generated using `int rand(void)` and `void srand(int)` functions.

Input/Output:

```
$ a.out
Enter data count: 10
Enter 10 integer data
1 10 2 9 3 8 4 7 5 6
1 2 3 4 5 6 7 8 9 10
```

```
$ a.out
Enter data count: 1
Enter 1 integer data
5
5
```