**EC-444: PARALLEL AND DISTRIBUTED COMPUTING**

**ASSIGNMENT-2**

**Last date: 20/05/2025**

Instructions:

1. No assignment will be acceptable after due date and time.
2. Assignment MUST be neat, clean, and properly formatted otherwise the assignment will be rejected.
3. Any resource can be used as a helping material (including ChatGPT) but remember that
   1. Detailed viva exam will be conducted against the written assignment.

Question:

1. Write a detailed hand-written note on n-body solver (at least 05 pages) and its importance in Physics and chemistry etc.
2. Develop a serial and parallel version of a C/C++ program for n-body solver using OpenMP/P-thread.
3. What type of parallelization problems were faced during development of a parallel program for n-body solver (hand-written note).

**NOTE: Help is available in Ch-6 Sec 6.1**

**Table 1**

|  |  |
| --- | --- |
| **Execution time (Serial Program)** |  |
| **Execution time (Parallel Program)** |  |

1. Submit the source code file of your program along with compilation information for verification purpose.
2. The program should be properly indented and commented.
3. Moreover, please also provide following information about your system (i.e., processor, # of cores, memory etc.). You may use CPU-Z tool available at the following link.

<https://www.cpuid.com/softwares/cpu-z.html>