**Modern Education Society’s**

**College of Engineering, Pune**

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| **NAME OF STUDENT: CLASS:** |
| **SEMESTER/YEAR: ROLL NO:** |
| **DATE OF PERFORMANCE: DATE OF SUBMISSION:** |
| **EXAMINED BY: EXPERIMENT NO: HPC-02** |

###### TITLE : **Vector and Matrix Operations.**

**PROBLEM STATEMENT :**  Design parallel algorithm to

1. Add two large vectors

2. Multiply Vector and Matrix

3. Multiply two N × N arrays using n2 processors.

### **OBJECTIVES:**

1. To use openmp to perform vector matrix operations.
2. To analyze the performance of parallel algorithm.

**PRE-REQUISITES:**

*Knowledge of* dividing a large problem into sub-problems. Identify data dependency among them. Knowledge of basic matrix and vector operations.

**QUESTIONS:**

1. How to parallelize addition of two large vectors?
2. Comment on data dependency in matrix and vector multiplication.
3. How to allocate processors for different sub-problems?
4. Explain the concept of multithreading in OpenMP with an example.