**ASSIGNMENT-1**

1. Implement the following set of equations sequentially and in parallel, where A0, A1, A2…. AN, are numbers and P0, P1, P2…. PN are sum of numbers.

P0🡨 A0

P1🡨 A0+ A1

P2🡨 A0+ A1+ A2

.

.

PN🡨 A0+ A1+……+ AN

1. Compare different blocking Send and Receive functions in MPI with the help of examples.
2. Explain how increase in clock rate will increase the speed of computer.
3. Define and derive the following performance metrics:
4. CPI ii) CPU throughput iii) MIPS Rate iv) Utilization
5. Explain the need for Parallel computing.
6. Explain and compare message passing programming with shared memory programming.
7. An instruction is 2byte wide and there are 32 such instructions. How many clock cycles does it take to execute it on

i) WSBS system ii) WSBP [1, 8]

iii) WPBS[32, 1] iv) WPBP[32, 8]

Explain each step in detail.