**Practical No. 6**

**Study of gather and scatter functions and analysis of MPI programs**

Q1. Study the gather and scatter functions of MPI.

Q2. Consider an implementation of the gather operation given to you (Program E) – in this implementation, each process sends its message to process 0, which gathers the message. Compare this code to the one that uses the MPI gather operation (Program F). Compare the performance for the fixed message size (1K words at each process) case with varying number of processes (1 - 16). Which implementation is better? Why?

Q3. Run the scatter operation (Program G) with varying message sizes (10K to 100K), with a fixed number of processes (8). Plot the runtime as a function of the message size. Explain the observed performance.