PACIFIC SCHOOL OF ENGINEERING

PARALLEL PROCESSING (180702)

ASSIGNMENT – V

1. Explain sending and receiving messages using MPI.
2. Discuss buffered non-blocking and non-buffered non-blocking send/receive message passing operations with neat sketches.
3. Briefly explain four different implementation of Send and Receive operations. Briefly explain Send and Receive functions of MPI.
4. Explain following MPI routines with arguments.
    a. MPI_Gather
    b. MPI_Scatter
    c. MPI_Reduce
    d. MPI_Send
    e. MPI_Recv
    f. MPI_Sendrecv
    g. MPI_Scan
    h. MPI_Reduce
    i. MPI_Init
    j. MPI_Isend
5. Briefly explain Cannon's algorithm for Matrix-Matrix multiplication. What are the advantages of this algorithm over other parallel algorithm of matrix multiplication?
6. Write a note on MPI.
7. Differentiate blocking and non-blocking message passing operations.
8. Explain the concept of Barrier with suitable example.
9. Explain sending and receiving messages using MPI.
10. Explain the blocking message passing send and receive operations.

11. What do you mean by deadlocks in blocking non-buffered message passing operations? Explain the same in brief? Is there any possibility for deadlock occurrence in the following code segments for process P1 and process P2 with blocking non-buffered send/receive message passing operations? Support your answer with proper justification.

P1	P2
1. send(&a, 1, 2)	1. send(&a, 1, 1)
2. receive(&b, 1, 2)	2. receive(&b, 1, 1)

12. Explain Blocking Non-Buffered Send/Receive and Blocking Buffered Send/Receive for message passing operation.