**ASSIGNMENT 4**

1. Explain Illiac-IV configuration with the help of a neat diagram.

2. Explain masking and data-routing mechanisms with the help of matrix multiplication example.

3) Write the kernel which receives an input matrix of size m\*n. It produces an output matrix of size m\*n such that, each element of the output matrix is calculated in parallel. Each element in the output matrix is a total sum of row sum and column sum of those elements that lies in the same row and same column index of that element in the input matrix.

Example:

**1 2 3** O/p: **11** 13 15

**4** 5 6 20 22 24

4) Write the algorithm to multiply two nxn matrices with n2 PEs. Show all the figures required for the above algorithm.

5) Write an OpenCL program to manipulate the input string as given below:

Input string: Manipal

Output string : lllllllaaaaaapppppiiiinnnaaM