SECTION-5

Q2 Ans

Transpose of a matrix is obtained by changing rows to colocumns and columns to rows in other words, transpose of A[][] is obtaned by changing A[i][j] to A[j][i]

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix} \qquad \begin{bmatrix} 1 & 4 & 7 \\ 2 & 5 & 8 \\ 3 & 6 & 9 \end{bmatrix}$$

Input Output

For square Matrix :-

```
# The below Python 3 Programing to find.
# transpose of a matrix
    N = 4
# This function stores
# Transpose of A[][] in B [][]
    def transpose [A, B]:
    for j in range [N]
    for i in range [N]
    B [ i ] [ j ] = A [ j ] [ i ]

# driver code
  A = [[1, 1, 1, 1 ],
       [ 2, 2, 2, 2 ],
       [ 3 , 3, 3, 3 ]
       [ 4, 4, 4, 4 ]
```

B = A[:][:] # To store result
transPose(A, B).

For Parameter Matrix :-

The below program finds transpose of A[][] and stores the result in B[][].

```
# Python3 program to find
# transpose of a Matrix.
M = 3
N = 4
# This function stores
# transpose of A[][] in B[][]
def transPose(A, B):
    for i in range(N):
        for j in range(M):
            B[i][j] = A[j][i]
# driver code
A = [[1, 1, 1, 1]]
    [2, 2, 2, 2].
    [3, 3, 3, 3]]
# To store result.
B = [[0 for x in range(M)] for y in
     range(N)].
TransPose(A, B).
```

Output

Result Matrix is $\begin{bmatrix} 1 & 2 & 3 \\ 1 & 2 & 3 \\ 1 & 2 & 3 \\ 1 & 2 & 3 \end{bmatrix}$.