12.248

EE25BTECH11026-Harsha

Question:
A square matrix **A** will be lower triangular matrix if and only if a_{MN} represents an element in the M^{th} row and N^{th} column of the matrix

1) $a_{MN} = 0, N > M$
2) $a_{MN} = 0, M > N$
3) $a_{MN} \neq 0, M > N$
4) $a_{MN} \neq 0, N > M$

Solution:
Let us solve the given question theoretically and then verify the solution computationally.

A lower triangular matrix of size $m \times n$ is defined as for any element a_{ij} in the matrix,

$$a_{ij} = 0 \ \forall \ i < j \tag{4.1}$$

By the definition, option (1) are correct.