

Step-1

In the expansion of 5×5 matrix, we have $5! = 120$ terms. When $a_{21} = 0$, the terms which are sure to be zero will correspond to those permutations of 1, 2, 3, 4, 5 in which 1 occupies the 2nd place. So, the number of three terms is equal to $4! = 24$