

Q1.  $T(n) = \sum_{i=1}^n \sum_{j=1}^n 1$

$$= \sum_{i=1}^n n = n \sum_{i=1}^n 1 = n \cdot n = n^2$$

$$\therefore T(n) = O(n^2)$$

Q3. Big-O (upper bound) =  $O(n^2)$

Big- $\Omega$  (lower bound) =  $\Omega(n^2)$

Big- $\Theta$  =  $\Theta(n^2)$

Q5. No, it will not effect the overall time complexity and it will still be  $O(n^2)$  but function will take slightly longer to run due to extra operation.