**Part 1**

Find the time complexity of the below functions in **Θ** form. Write NA if the function does not apply to any case.

1. T (n) = 3T (n/2) + n
2. T (n) = 64T (n/8) − n^2(log n)
3. T (n) = 2nT (n/2) + n^n
4. T (n) = 3T (n/3) + n/2
5. T (n) = 7T (n/3) + n^2

Solution:-

1. T (n) = O (n log2 3)
2. NA
3. NA
4. T(n) = O (n log n)
5. T (n) = O(n2)