**PART 1  
Marks: 10 (2 marks each )**

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
   * T (n) = **Θ**(nlog2 3) 🡺 T(n) = **Θ**(n1.585)
   * Case 1
2. T (n) = 64T (n/8) − n^2(log n)
   * NA
   * Negative f(n)
3. T (n) = 2nT (n/2) + nn
   * NA
   * a is not constant
4. T (n) = 3T (n/3) + n/2
   * T (n) = **Θ**(n log n)
   * Case 2
5. T(n)=7T(n/3)+n^2
   * T (n) = **Θ**(n2)
   * Case 3

**Note**: You don’t have to submit the full solution, the final time complexity in form of **Θ** is perfectly acceptable.  
Time Complexity in **any other** asymptomatic notation will lead to **zero** marks.  
You need to submit a text file (MS word, Notepad etc) in GitHub, name it as **YourName\_masterTheoremSolution**