Set A

Quiz 1

CSE 2217/CSI 227 (D): Algorithms/Data Structure and Algorithms II

Total marks: 15 **Time: 25 mins**

Rules:

- Late submission not allowed
- Zero marks for copying scripts or any unfair means
- You know the other rules.

Answer all 3 questions. 2 + 5 + 8

1. Write the formal definition of *Big omega (Ω)*. Your definition should contain ∃ and ∀.
2. Mathematically prove how the **worst-case** running time of insertion sort is $O(n^2)$.
3. Prove "For any two functions f(n) and g(n), we have f(n)=Θ(g(n)) if and only f(n)=O(g(n)) and f(n)=Ω(g(n))."