1. With the aid of examples explain the rules of Big O notation in algorithm analysis (5 marks)

Big O notation is mostly used in analysis characterization schemes, since it provides an upper bound on the complexity of an algorithm. Rules of Big O notation includes sorting different algorithm complexities, comparison upon growth rate, worst-case analysis, ignorance of constants.

Sorting Different algorithm complexities whereby if one loop runs O(n) times inside another O(n) loop, the total complexity is O(n²). Comparison upon growth rate whereby different complexities impact performance significantly, In Worst-Case analysis Big O describes the worst-case performance ensuring the algorithm runs efficiently even in the hardest scenarios.