1. What do you mean by an algorithm? Explain the importance of an algorithm by suitable example.

Ans : Algorithm Properties

Unambiguous Output

Definitiveness

Effectiveness

Algorithm performs the arduous task in seconds whereas Human Takes a large amount of time

Example :

For Weather Forecast

Step 1 : We should have connectivity i.e. we should have data for all the districts.

Step 2 : Cluster formation should be there . For Example, Data from West zone should be collected at Mumbai, from East at Kolkata, from south at Chennai from north at Delhi.

Step 3 : Communication . For example, data from every west zone district will be collected at Mumbai and this requires Communication.

2. What is the smallest value of n such that an algorithm whose running time is 100n^2 runs faster than an algorithm whose running time is 2^n on the same machine?

Ans : So we have to find smallest value of n such that 2^n > 100\*n^2. For n>=15 this condition is satisfied.

So smallest integer value of N is 15.

3. Describe the method for analysing an algorithm. What do you mean by best case, average case and worst-case time complexity of an algorithm?

Ans : 4 methods are available for analysing an algorithm. Time complexity is defined by number of times any instruction runs in specific amount of time.

Best Case Time complexity: If an algorithm requires minimum number of operations (steps or tasks) to deliver the correct output, then that algorithm is known as best case time complexity of an algorithm.

Worst Case Time complexity: If an algorithm requires maximum number of operations (steps or tasks) to deliver the correct output , then that algorithm is known as worst case time complexity of an algorithm.

Average Case Time Complexity : If an algorithm requires desultory or arbitrary number of operations (steps or tasks) to deliver the correct output , then that algorithm is known as average case time complexity of an algorithm.

4. What is the difference between Apriori approach and Posteriori approach for solving any problem? Discuss with proper example.

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| Apriori Analysis | Posteriori Analysis |
|  |  |
| 1. Apriori Analysis is known as theoretical analysis. | 1. Posteriori Analysis is known as Empirical Analysis , also it is machine dependent then it is also known as Relative Analysis |
|  |  |

If Client want linear time and our complexity is quadratic

Irrespective of the hardware of plat used by Client Apriori Analysis cannot be outperformed by Posteriori Analysis.