What are the GATE CSE subjects ?

There are 13 subjects:

i) Programming in C
ii) Data Structures
iii) Algorithms
iv) Compiler Design
v) Operating System
vi) Computer Organization And Architecture
vii) Digital Logic
viii) DBMS
ix) Computer Networks
x) Theory of Computation
xi) Discrete Mathematics
xii) Engineering Mathematics
xiii) General Aptitude

Why do we study these subjects ?

We study all these subjects are in combo/set:

1st set of subjects:

- Programming in C (We want to communicate something through the computer then we need a language).
- Data Structures
- Algorithms

(→ We want to solve problems efficiently.
→ Is my algorithm accurate?
→ Different ways to solve problems

E.g.: Here is a problem (sorting) which has different methods to solve

(merge,quick, bubble), and these methods are called algorithms.

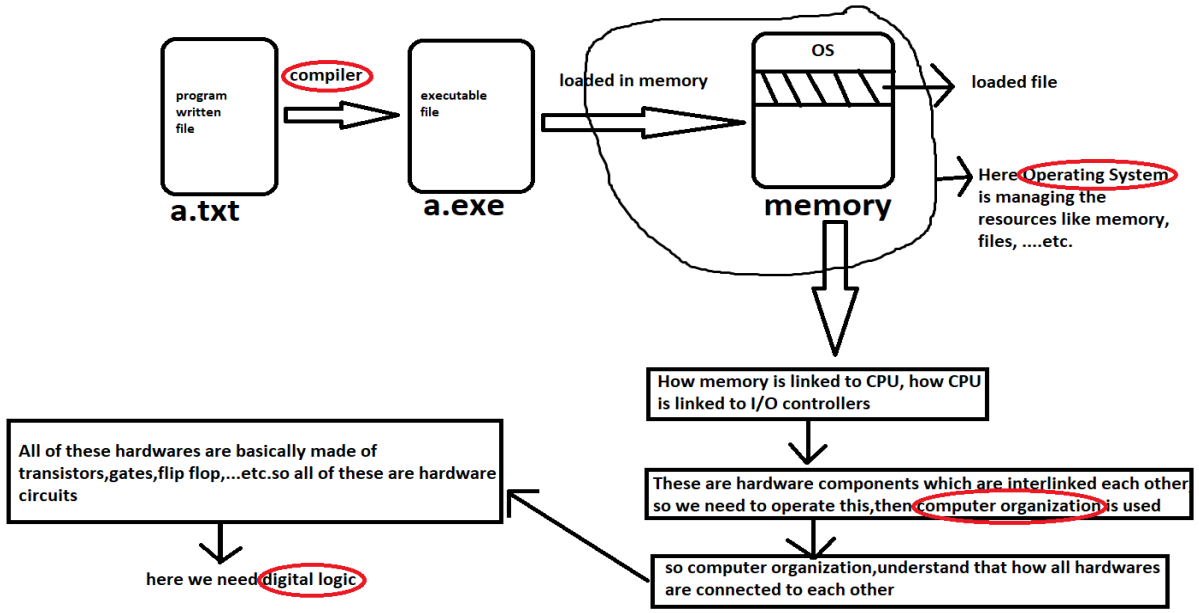
Sorting → problem

↓

(merge, quick, bubble) → Algorithms
→ We want to implement Algorithms using **Data Structures**)

2nd set of subjects:

- Compiler Design
- Operating System
- Computer Organization
- Digital Logic



3rd set of subjects:

- DBMS
  → Data are interconnected with each other.
  → We need to query our data.
  → Structured way to manage our data.
  → Transaction management.

- Computer Networks
  → To communicate the information from one computer to another computer.
  → We can communicate among multiple machines.

4th Set of Subjects:

- Theory of Computation
  → It will tell you about the limitations of computers.
  → Possibilities of computers (meaning what the computer can do, what the computer cannot do).

→ Types of problems that computers can solve and different problems that exist in the world.

- Discrete Mathematics
  → It is just like an aptitude kind of subject to understand basic logic.
  → It can communicate to someone in a mathematical way.

5th Set of Subjects:

- Engineering Mathematics
  → Engineering mathematics is very very crucial for machine learning. If we want to do any machine learning operations, it is better to know engineering mathematics.

  → If we have text, audio, video,... etc data can be converted to the matrix.

  → Data might be following some probability distribution.

  → We want to optimize something, so that's why we need the calculus here