**For Language Basics :** Index (1, 2, 3, 4, 5, 6, 7) | 10-15 Days

| **TOPIC** | **No. of Days** | **Minimum Qs** | **Video Index in C++ Placement Course** |
| --- | --- | --- | --- |
| Time & Space Complexity | 1 | 15 | 7.1 |
| Arrays (with Searching)  Sorting | 8 | 40 | 8.1 to 8.6  9.1 to 9.2  10.1 |
| String (Basics) | 1 | 4 | 13.1 to 13.2 |
| Recursion & Backtracking | 2 | 10 | 16.1 to 16.4  18.1 to 18.3 |
| Sorting  (Quick & Merge) | 1 | 4-6 | 19.1 to 19.2  20.1 (count sort)\* |
| Linked List | 2 | 10 | 22.1 to 22.11 |
| Stacks & Queues | 2 | 8 | 23.1 to 23.9  24.1 to 24.5 |
| Binary Trees  Binary Search Trees | 6 | 30 | 27.1 to 27.16  28.1 to 28.11 |
| Heaps & Priority Queue | 2 | 10 | 31.1 to 31.6 |
| Hashing | 2 | 10 | 32.1 to 32.8 |
| Greedy Algorithm | 2 | 10 | 33.1 to 33.7 |
| DP Algorithm | 5 | 25 | 35.1 to 35.20 |
| Graphs | 5 | 25 | 34.1 to 34.19 |
| String (Advanced) | 1 | 4 | 39.1 to 39.4 |
| Tries\* | 1 | 4 | 36.1 to 36.4 |
| Segment Trees\* | 2 | 5-7 | 40.1 to 40.7 |
| Fenwick Trees\* | 1 | 3 | 41.1 to 41.3 |

**\*Do these topics at the end, as you must complete the important ones first.**

**\*\*Additional Topics : Bit Manipulation, 2-Pointer Approach**

**C++ Placement Course :** [**https://www.youtube.com/playlist?list=PLfqMhTWNBTe0b2nM6JHVCnAkhQRGiZMSJ**](https://www.youtube.com/playlist?list=PLfqMhTWNBTe0b2nM6JHVCnAkhQRGiZMSJ)

**Practice Questions for Time & Space Complexity :** Cracking The Coding Interview by G. L. McDowell

**Theory Topics**

1. **OOPS (21.1 to 21.4 of C++ Placement Course)**

* Objects & Classes
* Abstraction
* Inheritance
* Polymorphism
* Encapsulation

1. **Database Management Systems (DBMS)**

* SQL
* ACID Properties (Atomicity, Consistency, Isolation, Durability)
* Use of B & B+ Trees
* Concurrency Control

1. **Operating Systems**

* What is an OS?
* CPU Scheduling algos
* Compiler, Interpreter, Loader, Linker
* Paging, Segmentation
* Process Synchronization
* Threads
* Deadlocks

1. **Computer Networks**

* OSI Model (Layers in Detail)
* TCP/IP Model
* Devices (Router, Switch, Hub, Repeater, Bridge, Gateways)
* TCP vs UDP
* Network Topologies