

Predictions of Questions related to syllabus :

What is an algorithm?

What are the different types of algorithms?

What are the steps involved in designing and implementing an algorithm?

Give some examples of algorithms used in everyday life.

Characteristics

What are the characteristics of a good algorithm?

What are the different ways to measure the efficiency of an algorithm?

Give some examples of algorithms that are efficient and inefficient.

Analysis of algorithms

What is the time complexity of an algorithm?

What is the space complexity of an algorithm?

How do you analyze the time and space complexity of an algorithm?

Give some examples of how to analyze the time and space complexity of different algorithms.

In addition to these general questions, you may also be asked more specific questions about the different types of algorithms that you have studied. For example, you might be asked to explain the following algorithms in detail:

Sorting algorithms (e.g., merge sort, quick sort, insertion sort)

Searching algorithms (e.g., binary search, linear search)

You may also be asked to implement these algorithms in C++.

Make sure you understand the basic concepts of algorithms, characteristics, and analysis of algorithms.

Practice solving algorithm problems. There are many online resources and textbooks that have algorithm problems that you can solve.

What is the difference between time complexity and space complexity?

What is Big O notation and how is it used to describe the complexity of algorithms?

Give some examples of algorithms with different time and space complexities.

How do you choose the right algorithm for a given problem, considering its time and space complexity?

Data, data objects, data types, data structures, abstract data types (ADT), primitive and nonprimitive, linear and nonlinear, static and dynamic, persistent and ephemeral data structures

What is the difference between data, data objects, data types, and data structures?

What is an abstract data type (ADT)?

Give some examples of ADTs and their concrete implementations.

What is the difference between primitive and nonprimitive data types?

Give some examples of primitive and nonprimitive data types in C++.

What is the difference between linear and nonlinear data structures?

Give some examples of linear and nonlinear data structures.

What is the difference between static and dynamic data structures?

Give some examples of static and dynamic data structures.

What is the difference between persistent and ephemeral data structures?

Give some examples of persistent and ephemeral data structures.

In addition to these general questions, you may also be asked more specific questions about the different types of data structures that you have studied. For example, you might be asked to explain the following data structures in detail:

Arrays

Linked lists

Stacks

Queues

Hash tables

Trees

Graphs