



C++ Syllabus

1) Introduction

- a. Pop vs oops
- b. Cascading of Cout , Cin

2) OPPs properties

- a. Class
- b. Object
- c. Data encapsulation
- d. Data abstraction → ADT
- e. Inheritance
- f. Polymorphism
- g. Data hiding
- h. Message Passing System

3) Operator in C++

4) Explain Pointer

- a. Types of pointer
 - i. near
 - ii. far
- b. Memory allocation of pointer
- c. Generic Pointer

5) Memory Management Operators

- a. new
- b. delete
- c. working with array using new operator

6) Data types

- a. Primitive
- b. Non-primitive
 - i. Derived
 - ii. User-define

7) Reference variable

- a. Call by value
- b. Call by pointer
- c. Call by reference variable
- d. Return by reference



8) **Scope resolution operator** → Local & Global Variable concept

9) **Function Prototype**

10) **Explain static keyword**

11) **Inline function**

- a. Explain Macro → #define
- b. Difference between Macro & Inline Function

12) **Function with Default argument**

13) **Function Overloading**

- a. Rules for Function overloading
- b. Function Overloading with Function with Default arguments

14) **Structure , union and Enumeration**

15) **Class introduction**

16) **Define Function outside the class** → using scope resolution operator

17) **Visibility mode** → private, public protected

- a. Class Program Practice
- b. Array of objects
- c. Array within the class
- d. Containership → associability of the class

18) **Constructor**

- a. Default Constructor
- b. Parameterized Constructor
- c. Copy
- d. Dynamic

19) **Destructor**

- a. Constructor without destructor
- b. Destructor without Constructor
- c. Constructors provided by the compiler → default and copy



20) Operator Overloading

- a. *Types of the Operators*
 - i. Unary
 - ii. Binary
 - iii. Ternary
 - b. *Operator Function*
 - i. Syntax
 - ii. Requirement
 - iii. Number of args to overload Unary & Binary operators
 - c. *Overload Unary Operators*
 - i. Unary –
 - ii. Unary +
 - iii. Prefix ++
 - iv. Postfix ++
 - v. Prefix and Postfix in a single program
 1. Remove ambiguity
 - d. *Overload Binary Operator*
 - i. Arithmetic Operator
 - ii. Relational Operator
 - iii. Working with if condition
 - iv. Use overloaded arithmetic with increment and decrement operator
 - v. Overload Assignment Operator
 1. Short-hand method → arithmetic with assignment
 - vi. Logical Operator
 - vii. Special operator
 1. Sub script operator
 - e. *Friend function*
 - i. Requirement of friend function
 - ii. Overload unary operators
 - iii. Overload Binary operators
 - iv. Overload friend function
 - v. Overload >> & <<
 - vi. Working with objects of two different classes
- Apply operator overloading on string class objects

21) Type Casting

- a. Inbuilt to inbuilt
- b. Inbuilt to user-define
- c. User define to inbuilt
- d. User define to user define



- i. Using constructor
- ii. Using conversion function

22) Inheritance

- a. Use and benefits of Inheritance in C++ → reusability
- b. Types of inheritance in C++
- c. Protected Keyword
- d. Role of constructors in inheritance
- e. Overriding Base Class Methods
- f. Virtual Base class → multipath inheritance
- g. Inherit the static function
- h. HAS-A and IS-A relationship

23) Pointer, virtual Functions & Polymorphism

- a. Pointer to objects
- b. Virtual function & pure virtual functions
- c. Abstract class

24) Console I/O streams

- a. Managing console & I/O operations
- b. C++ stream & Stream Classes
- c. Unformatted I/O operation
- d. Formatted I/O operations
- e. Managing output operations

25) Working with Files

- a. File Stream Classes
- b. Opening , Closing & Error Handling with files
- c. file modes, Input/output operations
- d. Updating Files : Random access
- e. command line arguments

26) Templates & Exception Handling

- a. Class Template & Function template
- b. Exception & Errors
- c. Controls Flow in Exceptions
- d. Use try , catch , throws in Exception handling

27) Introduction to STL