

Syllabus ...

1. Introduction to C++

[Lectures 2]

- 1.1 Basic Concepts, Features, Advantages and Applications of OOP
- 1.2 Introduction, Applications and Features of C++
- 1.3 Input and Output Operator in C++
- 1.4 Simple C++ Program

2. Beginning with C++

[Lectures 6]

- 2.1 Data type and Keywords
- 2.2 Declaration of Variables, Dynamic Initialization of Variables, Reference Variable
- 2.3 Operators:
 - 2.3.1 Scope Resolution Operator
 - 2.3.2 Memory Management Operators
- 2.4 Manipulators
- 2.5 Functions:
 - 2.5.1 Function Prototyping, Call by Reference and Return by Reference
 - 2.5.2 Inline Functions
- 2.6 Default Arguments

3. Classes and Objects

[Lectures 8]

- 3.1 Structure and Class, Class, Object
- 3.2 Access Specifiers, Defining Data Member
- 3.3 Defining Member Functions Inside and Outside Class Definition
- 3.4 Simple C++ Program using Class
- 3.5 Memory Allocation for Objects
- 3.6 Static Data Members and Static Member Functions
- 3.7 Array of Objects, Objects as a Function Argument
- 3.8 Friend Function and Friend Class
- 3.9 Function Returning Objects

4. Constructors and Destructors

[Lectures 6]

- 4.1 Constructors
- 4.2 Types of Constructor: Default, Parameterized, Copy
- 4.3 Multiple Constructors in a Class
- 4.4 Constructors with Default Argument
- 4.5 Dynamic Initialization of Constructor
- 4.6 Dynamic Constructor
- 4.7 Destructor

- 5. Inheritance** [Lectures 6]
- 5.1 Introduction
 - 5.2 Defining Base Class and Derived Class
 - 5.3 Types of Inheritance
 - 5.4 Virtual Base Class
 - 5.5 Abstract Class
 - 5.6 Constructors in Derived Class
- 6. Polymorphism** [Lectures 8]
- 6.1 Compile Time Polymorphism
 - 6.1.1 Introduction, Rules for Overloading Operators
 - 6.1.2 Function Overloading
 - 6.1.3 Operator Overloading Unary and Binary
 - 6.1.4 Operator Overloading using Friend Function
 - 6.1.5 Overloading Insertion and Extraction Operators
 - 6.1.6 String Manipulation using Operator Overloading
 - 6.2 Runtime Polymorphism
 - 6.2.1 This Pointer, Pointers to Objects, Pointer to Derived Classes
 - 6.2.2 Virtual Functions and Pure Virtual Functions
- 7. Managing console I/O operations** [Lectures 3]
- 7.1 C++ Streams and C++ Stream Classes
 - 7.2 Unformatted I/O Operations
 - 7.3 Formatted Console I/O Operations
 - 7.4 Output Formatting Using Manipulators
 - 7.5 User Defined Manipulators
- 8. Working with Files** [Lectures 6]
- 8.1 Stream Classes for File Operations
 - 8.2 File Operations - Opening, Closing and Updating
 - 8.3 File Updating with Random Access
 - 8.4 Error Handling during File Operations
 - 8.5 Command Line Arguments
- 9. Templates** [Lectures 3]
- 9.1 Introduction
 - 9.2 Class Template and Class Template with Multiple Parameters
 - 9.3 Function Template and Function Template with Multiple Parameter
 - 9.4 Exception Handling Introduction

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• Solved Question Papers : Summer 2022, Winter 2022, Summer 2023	P.1 - P.8

