

2PGDCA3 - OOPS AND PROGRAMMING IN C++**UNIT - I**

Object-Oriented Programming Paradigm, Basic Concepts of Object-Oriented Programming, Benefits of OOPs, Object-Oriented Languages, Applications of OOP, C++ Statements, Class, Structure of C++ Program, Creating the Source File, Compiling and Linking.

UNIT-II

Introduction, Tokens, Keywords, Identifiers, Basic Data types, User Defined Data Types, Derived Data Types, Symbolic Constants, Type Compatibility, Declaration of Variables, Dynamic Initialisation of Variables, Reference Variables, Operators in C++, Scope Resolution Operator, Member Dereferencing Operators, Manipulators, Type Cast Operator, Expressions and Implicit Conversions, Operator Precedence, Control Structures.

UNIT-III

Specifying a Class, Defining Member Functions, Making an Outside Function Inline, Nesting of Member Functions, Private Member Function, Arrays within a Class, Memory Allocation for Objects, Static Data Member, Static Member Functions, Arrays of Objects, Object as Function Arguments.

Constructors and destructors : Introduction, Constructors, Parameterized Constructors, Multiple Constructors with Default Arguments, Dynamic Initialisation of Objects, Copy Constructors, Dynamic Constructors, Constructing Two-Dimensional Arrays, Destructor.

Functions in C++: The Main Function, Function Prototyping, Call by reference, Return by Reference, Inline Functions, Default Argument, Const. Arguments, Function Overloading, Friend and Virtual Function.

UNIT - IV

Operator overloading and type conversions: Introduction, Defining Operator Overloading, Overloading Unary Operators, Overloading Binary Operators Using Friends, Manipulation of strings using Operators, Rules for Overloading Operators, Type conversions.

UNIT-V

Inheritance: extending class - Introduction, Defining Derived Classes, Single Inheritance, Making a Private Member

Inheritable, Multilevel Inheritance, Multiple Inheritance, Hierarchical Inheritance, Hybrid

Inheritance.

Pointers, virtual functions and polymorphism

Compile time Polymorphism, run time polymorphism, Pointers to Objects, This Pointer, Pointers to Derived Classes, Virtual Functions, Pure Virtual Functions.

TEXT & REFERENCE BOOKS :

- *Object Oriented Programming with C++* by E.Balaguruswami, TMH Publications
- *Object Oriented Programming in C++* by Nabajyoti Barakati SAMS PHI Pvt. Ltd

