Punjab Board

SYLLABUS

2023-2024

Computer Application (12th)

Time: 3 hours

Theory : 60 Marks
INA : 05 Marks
Practical: 35 Marks

Lesson 1: **Introduction to C ++**

Introduction to Object Orientation, Difference between Structured & Object Oriented Language, Introduction to C ++, Program Structure , Program Design & Implementation Issues, Character set of C++, C++ Basic Elements, Structure of a Program, What is meant by an object?.

Lesson 2: **Data Types Variables and Constants**

Concepts of Data Types, Data Types Modifiers, Constants, String Literals, Variables, Operators in C++, Expressions and Statements, Conditional Expression, Operators Precedence in C++.

Lesson3: **Control Statements**

Conditional Statements, Selection Statements: if and else, Nested if (Nested blocks), Another selection statements: switch,Jump statement, The break statement, The continue statement, The goto statement, Exit() Function, Iteration Statement (C++), Loop & Nested Loops, Console I/O functions, Header Files.

Lesson 4 **Functions**

Definition of function, Function Prototype, Objective of using function prototype, Accessing a function, Passing argument to a function, default values for Parameters, The const argument, C++ function call by value, C++ function call by reference, parameter pass by reference, Return statement, Passing Arrays as Function Arguments in C++, C++ Variable Scope, Local Variables.

Lesson 5 **Arrays**

Declaring Arrays, One Dimensional Array, Nature of subscript, Multidimensional Array, Two-Dimensional Arrays, Arrays of strings.

Lesson 6: **Classes and Objects**

Classes, Access specifiers and default labels, Scope of class & its members, Member functions, Data hiding & encapsulation, Inline Functions, Nesting of Member Functions, Nesting of Member Functions, Arrays within a class, static Function Members.

Lesson 7: **Constructors, Destructors and Function Overloading**

Need for Constructors, Default Constructors, parameterized Constructor, Default Copy Constructor, Dynamic Initialization Using Constructors, The Class Destructor, Function overloading in C++, Steps involved in finding the best match.

Lesson 8: **Inheritance**

Inheritance : Extending Classes, Need for Inheritance, Defining Derived Class, Different Forms of Inheritance, Visibility Modes, Inherit private members of base class.

Lesson 9: **Information Technology**

Introduction, Computer Networks, Network Topology, Advantages & Disadvantages of Network, Data Communication, Transmission Channel, Types of Networks.

PRACTICAL

Time: 2 hrs **Marks: 35**

EVALUATION SCHEME FOR PRACTICAL

1. **Programming in C++**
   There will be 5 Practical Programs will be set from which candidate has to attemptany Programs. Each Program will be of 5 marks. Marksfor the programming are to be given on the basis of program documentation /indentation, algorithm and result (output) 5 X 4=20 Marks
2. **Viva-Voce** 10 Marks
3. **Practical record file** 5 Marks
   Record of at least 20 programs in C++ (with listing and Outputs) based on programming concepts and on data base concepts

SYLLABUS: All the relevant practical exercise will be based upon the relevant chapters mentioned in the Theory Syllabus.