I BCA / **I B.SC- II SEMESTER** 17UCSAM03

Object Oriented Programming

UNIT I

Introduction- C++ fundamentals - Identifier and Keywords – Data Types – Constants – Variables - Expression – Operators- Data input, output functions. **OOPS:** Basic Concepts - Benefits - Applications - Classes and Objects – Access Specifiers -Array of Objects.

UNIT II

Constructors: Definition – Types of Constructors: Default Constructors- Parameterized Constructors-Copy Constructors – Dynamic Constructors - Multiple Constructors – Destructors. Functions: Functions Overloading - Friend Function – inline Function – Static Member Function – const Member Functions.

UNIT III

Operator Overloading: Overloading Unary Operators – Overloading Binary Operators- Overloading Arithmetic Assignment Operators. Inheritance: Definition - Inheritance Types: Single Inheritance – Multiple Inheritance – Multilevel Inheritance – Hierarchical Inheritance – Hybrid Inheritance -- Virtual Base Class – Abstract Class.

UNIT IV

Polymorphism: Definition - Polymorphism Types: Compile Time Polymorphism – Run Time Polymorphism - Virtual Functions – Pure Virtual Functions – 'this' pointer – Pointers to Object. Templates: Class Templates – Function Templates – Overloading Templates Functions - Member Function Templates – Non Type Templates Arguments – Exception Handling.

UNIT V

Streams: Stream Class Hierarchy - Stream Classes - Header File - String I/O: Writing Strings - Reading Strings -Character I/O - Detecting End - of - file. Object I/O: Writing an object to Disk - Reading an object from Disk - I/O with Multiple Objects: fstream Class – open () function - File Pointers – Functions - - Error Handling - Command Line Arguments.