AIT 515 OBJECT ORIENTED PROGRAMMING USING C++ 3(2+1)

Objective:
Understand the fundamental Object Oriented Concepts ,Solve simple and moderately complex problems using C++,Understand the implementation of various data structures and algorithms

Theory:
UNIT I
Basic concepts of object oriented Programming, Benefits of object oriented programming, C++ overview, Structure of C++ program, C++ data types, tokens, operators, conditional and looping control structure, array, user define function, Functions overloading

UNIT II
Specifying a class, Defining member, private and public member, Memory allocation for objects, Static data member, Static member functions, Arrays of objects, Objects as function arguments, Friendly functions

UNIT III
Characteristics of constructor, Parameterized constructor, Multiple constructor in a class, Constructor with default argument, Copy constructor, Destructors, Introduction to Operator overloading and Type conversation, unary and binary operator overloading using member function and friend function, type conversation from basic to user define, user define to basic and user define to other user define.

UNIT IV
Introduction to Inheritance, Defining derived classes, Types of inheritance, Constructors & destructor in derived class Introduction to Pointer, Virtual functions and Polymorphism, Pointer to Object, Pointer to derived class, this pointer, Rules for virtual function, Virtual function and pure virtual function.

UNIT V
Working with Files, File stream classes, Opening and closing a file, file modes, File pointers, Sequential I/O operations, updating a file, Command line arguments

Practical:
1. C++ programs for variables, operators, conditional and looping structure
2. C++ programs for different type of user define functions.
3. C++ programs for function overloading
4. C++ programs for Class and Objects
5. C++ programs for constructor and destructor
6. C++ programs for unary operator overloading
7. C++ programs for binary operator overloading
8. C++ programs for type conversion
9. C++ programs for different types of inheritances
10. C++ programs for file handling.

Reference Book:

1. Object Oriented Programming in C++ By E.Balagurusamy, BPB
2. Mastering C++ - By Venugopal
3. Object Oriented Programmin in C++ By Robaret Laphore
4. Let us C++ By Yashvant Kanitkar, BPB
5. Bjarne Stroustrup, Programming - Principles and Practice Using C++, Addison-Wesley, 2009.