PET5J007 OBJECT ORIENTED PROGRAMMING (3-1-0)

MODULE- I

1. **Introduction to object oriented programming**: user defined types, structures, unions, polymorphism, encapsulation. Getting started with C++ syntax, data-type, variables, strings, functions, default values in functions, recursion, namespaces, operators, flow control, arrays and pointers.

MODULE-II

2. **Abstraction mechanism:** Classes, private, public, constructors, destructors, member data, member functions, inline function, friend functions, static members, and references. Inheritance: Class hierarchy, derived classes, single inheritance, multiple, multilevel, hybrid inheritance, role of virtual base class, constructor and destructor execution, base initialization using derived class constructors.

3. **Polymorphism:** Binding, Static binding, Dynamic binding, Static polymorphism: Function Overloading, Ambiguity in function overloading, Dynamic polymorphism: Base class pointer, object slicing, late binding, method overriding with virtual functions, pure virtual functions, abstract classes.

Module-III

4. **Dynamic memory:** Dynamic memory management, new and delete operators, object copying, copy constructor, assignment operator, virtual destructor.
5. **Template**: template classes, template functions.

Module-IV

6. **Operator overloading:** This pointer, applications of this pointer, Operator function, member and non member operator function, operator overloading, I/O operators.
7. **Exception handling:** Try, throw, and catch, exceptions and derived classes, function exception declaration.

Additional Module (Terminal Examination-Internal)

1. **Namespaces:** user defined namespaces, namespaces provided by library.

Text Books:

1. Object Oriented Programming with C++, E. Balagurusamy, McGraw-Hill Education.
2. ANSI and Turbo C++,Ashoke N. Kamthane, Pearson Education.
3. Object Oriented Programming with C++,ReemaThareja, Oxford University Press.

Reference Books:

1. C++ the Complete Reference**,** HSchildt, McGraw-Hill Education.
2. C++ and Object Oriented Programming,DJana, PHI Learning.
3. Mastering C++, K RVenugopal, McGraw-Hill Education.
4. Object Oriented Programming with C++,Rajiv Sahay, Oxford.