AMMT23 OBJECT ORIENTED PROGRAMMING IN C++

UNIT-1 OOP PARADIGM

1.1 Software crisis- Software evolution- A look at procedure oriented programming- Object oriented programming paradigm

1.2 Basic concepts of object oriented programming- Benefits of OOP- Reusability

1.3 Security- Object oriented programming fundamental- Abstraction- Encapsulation – Derivation

1.4 Object oriented languages and packages–Applications of OOP- A simple C++ program- More C++ statements – Structure of C++ Program.

UNIT-2 INTRODUCTION TO C++

2.1 Tokens- Keywords- Identifiers and constants- Basic data types- User defined data types

2.2 Derived data types- Symbolic constants- Declaration of variables- Dynamic initialization of variables- Reference variables- Operators in C++

2.3 Scope resolution operator- Manipulators- Type cast operator- Expressions and their types- Special assignment expressions- Control structures - The main function – Function prototyping

2.4 Call by reference- Return by reference- Inline functions- Default arguments – Function overloading.

UNIT-3 CLASSES AND OBJECTS

3.1 Specifying a class- Defining member functions- Private member functions

3.2 Arrays within a class- Memory allocation for objects- Static data members- Static member functions- Arrays of objects

3.3 Objects as function arguments- Friendly functions- Returning objects.

3.4 Constructors: Parameterized constructors- Multiple constructors in a class- Constructors with default arguments

3.5 Dynamic initialization of objects- Copy constructor- Dynamic constructors– Destructors.

UNIT-4 OPERATOR OVERLOADING, INHERITANCE AND POLYMORPHISM

4.1 Defining operator overloading: Overloading unary, binary operators. Manipulation of strings using operators- Rules for overloading operators- Type Conversions

4.2 Defining derived classes- Single inheritance- Multilevel inheritance- Multiple inheritance

4.3 Hierarchical inheritance- Hybrid inheritance- Virtual base classes- Abstract classes

4.4 Introduction to pointers to objects: This pointer Pointers to derived classes- Virtual functions- Pure virtual functions.

UNIT-5 CASE STUDIES

5.1 Over view of typical object oriented systems- Case studies- Applications

Reference Books:

1. Herbert Schildt,"C++ The Complete Reference", Tata Mc Graw Hill Edition, 2003
2. Bjanne Stroustrup, "The C++ Programming Language",3rd Edition, Addison Wesley, 2000