**Programming with C++**

**EDS-CS401**

**Topics: -**

**1.** Reference Variable and Call-by-reference

**2.** Inline Function

**3.** Compile-time Polymorphism using Function Overloading

**4.** Data Hiding, Encapsulation, Abstraction, Class, Object, Access specifier-public, private, protected, Data member, Member function, Defining Member Function in and outside the class, Static data member/ Class Variable and Static member function

**5.** Default Constructor, Parameterized Constructor, Default argument constructor, Empty/ Do-Nothing Constructor, Destructor, Use of Pointer Data member, Compiler supplied default constructor and Destructor, Shallow copy, Deep copy, Return-by-reference, new and delete operator, bool data type

**6.** Parameterized Constructor using Copy-Initialization and Direct-Initialization, Copy Constructor, Pass-by-value vs. Pass-by reference, Compile-time Polymorphism using Operator Overloading, Implementation through member function, Overloaded assignment (=) operator, Compiler supplied Copy Constructor and Overloaded Assignment (=) operator, Self-assignment, Chain Assignment, Return-by-value vs. Return-by-reference

**7.** Compile-time Polymorphism using Operator Overloading, Overloading arithmetic (+) operator, Concept of Friend, Implementation through Friend Function

**8.** Overloading Relational (= =, >) operators, Extraction and Insertion operators (>>, <<), Post-Increment and Pre-Increment (++, sign same for both operators yet different) Operators

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**10.** Inheritance, Type of Inheritance, Function Overriding, Virtual Base Class, Derived class constructor, Run-time Polymorphism using Virtual Function, VTable, Virtual Pointer, Pure Virtual Function, Abstract Class