HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

B.C.A. Semester – III
BCA-301 : Object Oriented Programming using C++

Teaching Scheme (Per week)		Teaching Scheme (Per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit - I [18 Marks]

Fundamentals of Programming

Concept of Procedural, structured and objects oriented programming .Concept of Encapsulation, Data hiding, Inheritance and Polymorphism. Classes and objects. Data types, variable and constants, Expression and operator. Simple I/O statements- reading and writing. Reference variable. Control statements, Looping statements, Array.

Unit - II [17 Marks]

Functions, Class, Object, Constructor and Destructor

Functions: Call by reference, call by value, return by reference, inline function, constant argument, function overloading, static member function, static data member**. Classes:** Implementing class, Classes and members, Accessing class members, implements class methods, array of object, friend function**. Constructor & Distracters:** Parameterized constructor, multiple constructor, constructor with default argument, copy constructor, destructor.

Unit - III [18 Marks]

Operator Overloading & Type Casting

Operator overloading, unary operator overloading, binary operator overloading, manipulates string using operator overloading. type conversions : basic to class, class to basic, class to class.

Unit - IV [17 Marks]

Inheritance, Virtual Function

Inheritance: single Inheritance, multilevel Inheritance, multiple Inheritance, hybrid Inheritance, hierarchical Inheritance, virtual base class, abstract class. **Pointers:** pointer to object, this pointer, virtual function and pure virtual function.

Text Book:

1. E. Blagurusamy: **Object Oriented Programming with C++,** Tata McGraw Hill.
2. V. Rajaraman: **Object Oriented Programming with C++,** New age International Publishers.

Question Paper Scheme:

University Examination Duration: 3 Hours.

Q.1 - Unit-I   (18 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.

Q.2 - Unit-II   (17 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.

Q.3 - Unit-III   (18 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.

Q.4 - Unit-IV   (17 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long questions.

Note: All Objective/ Short Questions are compulsory, no option will be given.