T. Y. B. C. A.
BCA -301 Object Oriented Programming

Teaching Scheme (per week)		Examination Scheme					
		Internal		External		Total	
Th. (hours)	Pr. (hours)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
3	-	30	-	70	-	100	-

Unit 1. Fundamentals of Programming.   **(17 Marks)**
- Concept of Procedural, structured and object oriented programming.
- Concept of Encapsulation, Data hiding, Inheritance and Polymorphism.
- Classes and objects.
- Data types, variable and constants, Expression and operators.
- Simple I/O statements- reading and writing.
- Reference variable.
- Control statements, Looping statement, Array.
- History of C++ its OOP over Procedural Languages.
- Advantages of OOP over Procedural Languages parts of C++ Programs.

Unit 2. Functions, Class, Object, Constructor and Destructor :   **(18 Marks)**
- <u>Functions</u> : Call by reference, call by value, return by reference, inline function, constant argument, function overloading, static member function, static data member.
- <u>Classes</u> : Implementing class, Classes and members, Accessing class members, implementing class methods, array of object, friend function.
- <u>Constructor & Distracters</u> : Parameterized constructor, multiple constructor, constructor with default argument, copy constructor,   destructor.

Unit 3. Operator Overloading & Type Casting :   **(17 Marks)**
- 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 4. Inheritance, Virtual Function and Files :   **(18 Marks)**
- 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.
- File : opening and close file, detecting end of the file.

MAIN REFERENCE BOOKS :
1. E. Blagurusamy : Object Oriented Programming with c++, 2nd Ed.. 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   (17 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long Questions.
Q -2 - Unit - II   (18 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long Questions.
Q -3 - Unit - III   (17 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long Questions.
Q -4 - Unit - IV   (17 Marks)
    A. Objective/ Short Questions.
    B. Descriptive/ Long Questions.

Note : Options should be given in all questions.