(i) Printed Pages : 3 Roll No. .....

(ii) Questions : 9 Sub. Code : 0 8 8 4

Exam. Code : 0 0 2 1

B.C.A. 3rd Semester

1125

IMPLEMENTATION OF OBJECT ORIENTED CONCEPT THROUGH C++

Paper–BCA-303

Time Allowed : Three Hours] [Maximum Marks : 90

Note : Students are required to attempt **one** question each from Sections A, B, C and D and Section E is compulsory.

SECTION–A

1. (a) What are the main characteristics of an object oriented programming language ? Compare them with the procedural programming. 10

   (b) Explain the use of inline and static functions. Give at least one example in each case. 8

2. (a) Can we use the same function name for a member function of a class and outside function in the same program file ? If yes how are they distinguished ? If no, give reasons. 10

   (b) What is a class ? Give an advantage of having classes in a program. How does it accomplish data hiding ? 8

SECTION–B

3. (a) What are Constructors ? How to declare a constructor ? What are various types of constructors ? List the rules while writing a constructor function. Explain with the help of an example. 10

   (b) Write a program to overload the + operator to concatenate two strings. 8

4. (a) Briefly write on the following :

   (i) Destructor

   (ii) Pointers to objects

   (iii) Scope resolution operator

   (iv) Function overloading. 10

   (b) Explain the differences between passing arguments "by reference" and "by addresses" to functions. 8

SECTION–C

5. (a) Explain the usage of public, private and protected access modifiers for members in inheritance. Give example to explain. 10

   (b) What is multiple inheritance ? How is it realized in C++ ? Give suitable example. 8

6. (a) What is the difference between Early binding and Late binding ? Explain with a suitable C++ code. 10

   (b) Explain the use of virtual functions. How are pure virtual functions different ? Give at least one example to explain each case. 8

SECTION–D

7. (a) Write a C++ program that prompts the user to enter the name of two files, and copies the contents of the first file into the second file. Your program should be able to handle any kind of error that occurs during the course of program execution. 10

   (b) What are templates ? Create a function template for a stack. 8

8. (a) How exception handling is done in C++ ? Explain with suitable example. 10

   (b) Write a program to explain various file operations in C++. 8

SECTION–E (Compulsosry)

9. Attempt all parts :

   (i) What is polymorphism ?

   (ii) What are friend functions ?

   (iii) Explain the role of file iostrearn.h in C++.

   (iv) Differentiate between class and object.

   (v) How the end of file can be detected ?

   (vi) Define the use of structure in file operations.

   (vii) Can I overload the destructor for my class ? Support your answer.

   (viii) What is the significance of access specifiers in a class ?

   (ix) What are class templates ? Give an example. $2 \times 9 = 18$