|BCS-031|

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

June, 2015

05723

BCS-031 : PROGRAMMING IN C++

Time : 3 hours   *Maximum Marks : 100*

(Weightage 75%)

Note :   *Question no. 1 is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

1. (a)   Explain object oriented concepts. How is object oriented language different from structured programming language ?   *8*

    (b)   What is inheritance ? Explain different types of inheritance supported by C++.   *6*

    (c)   Differentiate between default constructor and parameterized constructor with the help of an example.   *8*

    (d)   What is an abstract class ? How do you create an abstract class ? What is the purpose of creating an abstract class in object oriented programming paradigm ? Explain with the help of an example.   *8*

    (e)   Write a C++ program to add two complex numbers. In this program you need to create complex class and define proper constructor for object initialization.   *10*

2. (a) What do you understand by friend function ? Write a C++ program to find out the sum of n given numbers using friend function. *10*

(b) Explain the difference between private, protected and public access specifier with respect to class and its object. Write a program in this support. *10*

3. (a) What do you mean by operator-overloading ? List the operators which cannot be overloaded. Write a C++ program for unary minus (–) operator overloading. *10*

(b) Explain the concept of virtual function with its important characteristics. Write a C++ program to illustrate the importance of pure virtual function. *10*

4. (a) What do you mean by *this* pointer ? Explain the use of *this* pointer with the help of an example. *5*

(b) Write a C++ program to display the price-list of five vegetables. Use precision( ) function to set precision 2 for display price. *5*

(c) What is function template ? Write a function template to swap two given numbers. *10*

5. **(a)** What is containership ? Write the important containers available in C++ with their importance. *10*

(b) What do you mean by exception handling ? Write the syntax of *try*, *throw* and *catch* expressions. Write a program to catch all the exceptions in C++ programs. *10*