

**BACHELOR OF COMPUTER APPLICATIONS  
(BCA) (Revised)**

00469 **Term-End Examination**

**December, 2016**

**BCS-031(S) : PROGRAMMING IN C++**

*Time : 3 hours*

*Maximum Marks : 100*

*(Weightage : 75%)*

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*Note : Question number 1 is compulsory and carries 40 marks. Attempt any three questions from the rest.*

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1. (a) What is object oriented programming ? Explain its advantages over structured programming. 6
  
- (b) Write a C++ program to create a class "Number" with a constructor to initialize the object of "Number" class with one integer value. Define member functions to find the square of a number and for displaying it. 10
  
- (c) What is a constructor ? Explain how constructors are overloaded in C++, with the help of an example. 6

- (d) Explain any four different data types available in C++. 8
- (e) What is a stream manipulator ? Explain the use of `setw()` and `setprecision()` as a stream manipulator. 5
- (f) Write a C++ program to check whether a given number is an even number or an odd number. 5
2. (a) Write a C++ program to overload '+' operator to find the sum of two complex numbers. 12
- (b) What is the concept of reusability ? Explain how a class is derived from a given class in C++, with the help of an example. 8
3. (a) What is an abstract class ? Explain its advantages. How is polymorphism implemented using an abstract class ? Give an example. 10
- (b) What is an exception ? How is it handled in C++ ? Write a program demonstrating exception handling in C++. 10
4. (a) What is function overloading ? Explain how it is implemented in C++. 10
- (b) What is a template class ? Explain its advantages. Create a template class for a LinkedList data structure. 10

5. (a) What is an access specifier ? Explain different types of access specifiers available in C++. 5
- (b) What is dynamic binding ? Explain with the help of an example. 5
- (c) Write a C++ program to define a class "Account". Derive a "Saving Account" class from the Account class. Define appropriate constructors for both the classes. Also define a method to display the account balance. Make necessary assumptions, if required. 10
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