

BACHELOR OF COMPUTER APPLICATIONS
(Revised)

00074

Term-End Examination
December, 2014

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) Why did people change over from structured programming to object-oriented programming ? Explain it in brief with the help of an example. 6
- (b) Write C++ program to find factorial of a given number using copy constructor. 8
- (c) What do you mean by *inline* function ? What is its importance in object-oriented programming languages. Write C++ program to clarify the concept of inline function. 8
- (d) Differentiate class template and function template with the help of an example. 8
- (e) Write C++ program to implement multilevel inheritance. Provide the necessary comments to clarify the availability of data members and member functions in different classes. 5

- (f) What is an object in C++ ? Explain how an object can be passed as an argument to a function with the help of an example. 5
2. (a) What do you mean by constructors ? Write the characteristics of constructors. Write a program to illustrate the use of constructor in C++ programming. 10
- (b) What happens if we don't use the virtual function in the inheritance ? Explain the importance of virtual function in the reference of the above, with the help of an example. 10
3. (a) What are the needs of operator overloading in the program ? Why can't some operators be overloaded ? Write C++ program to add two complex numbers using plus (+) operator overloading. 10
- (b) Why does abstract class play an important role in object-oriented programming ? Write C++ program of abstract class which uses the concept of pure virtual function. 10
4. (a) What do you mean by polymorphism ? How is run time polymorphism different from compile time polymorphism ? Give example(s) to support the above differentiation. 10

- (b) What do you mean by the file stream operations ? Write C++ program to demonstrate the reading from disk file and writing the result to the disk file. 7
- (c) What is friend function ? Explain its concept with the help of a suitable example. 3
5. (a) Describe all types of containers that are available in C++ with their importance, in detail. 10
- (b) Explain a situation when you will use multiple *catch* statements in a C++ program for exception handling. 5
- (c) Write a C++ program to find the area of a circle. 5
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