

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

**Term-End Examination**

**June, 2022**

**BCS-031 : PROGRAMMING IN C++**

*Time : 3 hours*

*Maximum Marks : 100*

*(Weightage : 75%)*

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

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1. (a) What is an access specifier ? Explain different types of access specifiers available in C++. 5
- (b) What is message passing ? Explain with the help of an example. 5
- (c) What is stream manipulator ? Explain the use of setw() and setprecision() as a stream manipulator. 5
- (d) What is a constructor ? Explain how constructor is overloaded in C++, with the help of an example. 5
- (e) What is object oriented programming ? Give two advantages of object oriented programming over structured programming. 5

- (f) How does virtual function differ from a pure virtual function ? Explain with the help of an example. 5
- (g) Explain the association of dynamic binding and runtime polymorphism, with suitable example. 5
- (h) Explain the concept of Inline function in C++, with suitable example. 5
- 2.** (a) Write a program in C++ to define a class “Teacher” with a virtual function “Salary”. Derive the class “Assistant Professor” from the class “Teacher” and implement the salary function. Make necessary assumptions. 10
- (b) What is class template ? Create a class template for stack data structure. 10
- 3.** (a) What is the difference between function overloading and function overriding in C++ ? Explain the usage of these concepts, with suitable example in C++. 10
- (b) What is inheritance ? Explain different types of inheritance in C++. 10

4. (a) Write a program in C++ to open an existing file and insert the text “File program in C++” at the end of the file. Your program should have suitable comments. 10
- (b) Write a program in C++ to multiply two complex numbers. In this program you need to create a complex class and define a proper constructor for object initialization. Give suitable comments in your program. 10
5. (a) Differentiate between the following : 5
- (i) Binary file and Text file
  - (ii) get( ) and getline( )
- (b) What is stream in C++ ? Name the streams generally used for file I/O. 4
- (c) What is the difference between a keyword and an identifier ? Explain with the help of an example. 4
- (d) What is the purpose of exception handling ? Explain how exception is handled in C++, with the help of an example. 7
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