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BCS-031

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

June, 2017

04991

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 are object oriented programming languages more popular than structured programming languages ? Differentiate between structured and object oriented programming languages. *6*

(b) Explain ambiguity resolution in multiple inheritance. What happens if we don't use a virtual function in the inheritance ? *6*

(c) Write a C++ program to create a matrix class. Define constructor and destructor for this class. Also define a method to find the sum of two matrices. *10*

(d) Define the Standard Template Library. How is the class template different from the function template ? Explain. 6

(e) Differentiate between private, protected and public access modifiers with the help of an example for each. 6

(f) How is constructor different from the 'constructor with argument' ? Explain by using an example. 6

2. (a) Write a program to demonstrate the catching of all exceptions. What happens when a raised exception is not caught by catch-block (in the absence of catching all exception blocks) ? 10

(b) Write a program to implement the overloading of << operator. 10

3. (a) How do we declare static class data ? Explain the syntax and rules to define static class data. 5

(b) Write a short program to implement the concept of passing object as argument. 5

(c) Write the general form of the user-defined manipulators. Design a single manipulator format to provide the following output specifications for printing float values : *10*

(i) 10 column width

(ii) Right Justified

(iii) Two-digit precision

(iv) Filling of unused places with *

(v) Trailing zeroes shown

4. (a) What is the importance of Abstract Class ? Write a program to implement the concept of abstract class in C++. Also explain why an abstract class cannot be instantiated. *10*

(b) Write a program to calculate the factorial of a given number by using copy constructor. Also write comments in your program wherever required. *10*

5. Write short notes on the following : *4×5=20*

(a) Destructor

(b) Pure Virtual Function

(c) Friend Function

(d) Multiple Inheritance
