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BCS-031

**BACHELOR OF COMPUTER
APPLICATIONS (B. C. A.) (REVISED)**

Term-End Examination

December, 2020

BCS-031 : PROGRAMMING IN C++

Time : 3 Hours

Maximum Marks : 100

Weightage : 75%

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

1. (a) What is construction ? Explain the advantages of construction with the help of an example. 5
- (b) What is function template ? Write a function template SUM to add two numbers. 5
- (c) List the merits and demerits of single inheritance over multiple inheritance. 5

- (d) How is a structure in C++ different from a class ? Explain with the help of example. 5
- (e) 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
- (f) What is friend function ? Explain its advantages with the help of an example. 7
- (g) What is an inline function ? Explain the advantages of inline function, with suitable example. 8
2. (a) What is exception ? Explain, how exception handling is done in C++, with the help of a program. Also discuss, what will happen if an exception is thrown outside of a try block. 10
- (b) What is template class ? Explain the advantages of template class. 5
- (c) Write a C++ program to find the average three given numbers. Define appropriate class and methods in the program. 5

3. (a) What is function overloading ? How is it different from function overriding ? Explain with an example program for each. 10
- (b) What is virtual function ? Write a program in C++ to create a class Doctor with a virtual function salary. Derive a class visiting Doctor and implement function salary in it. 10
4. (a) Explain, how function calls are matched in a C++ program in which functions are overloaded. Use appropriate example program for your explanation. 10
- (b) Write a C++ program to implement simple calculator to perform '+', '-', '*', '/' on two operands. Your program should have methods for reading data and for performing arithmetic operations. 10

5. Write short notes on the following : $5 \times 4 = 20$

- (i) Copy constructor
- (ii) Access control specifier
- (iii) Stream manipulators
- (iv) Message passing
- (v) Scope resolution operator

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