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 :   5×4=20

    (i)   Copy constructor

    (ii)   Access control specifier

    (iii) Stream manipulators

    (iv) Message passing

    (v)   Scope resolution operator