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BCS-031

Bachelor of Computer Applications (BCA) (Revised)

Term-End Examination

June, 2019

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) What is object oriented programming paradigm ? Explain advantages of object oriented programming paradigm over structured programming paradigm. 5

   (b) What is the need of memory management in C++ ? Explain the process of memory management in C++. 5

   (c) What is a virtual function ? How does virtual function differ from function in C++ ? Explain with example. 5

(d) What is operator overloading ? Briefly explain general rules of operator overloading. 5

(e) What is stream manipulator ? Explain the use of setw( ) and setprecision( ) as stream manipulator. 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

(g) What is scope resolution operator ? Explain the use of scope resolution operator with the help of a C++ program. 5

(h) Explain any *five* relational operators in C++ with the help of examples. 5

2. (a) What do you understand by friend function ? Write a C++ program, to find out the sum of n given numbers using friend function. 7

(b) Explain the difference between public, private and protected, access specifiers with respect to classes in C++. 6

(c) Differentiate between default constructor and parameterized constructor with the help of an example program in C++. 7

3. (a) What do you mean by operator-overloading in C++ ? List the operators which cannot be overloaded. Write a program in C++, to overload unary minus (–) operator. 10

(b) What is exception handling ? What are the keywords, used to handle the exception in C++ ? Write a C++ program to handle divide by zero exception. 6

(c) How is structure different from a class ? Explain with example. 4

4. (a) What is static member ? Explain the use of static data member and static member function, with the help of an example program in C++. 7

(b) Explain the use of the following standard stream objects with the help of examples : 8

(i) cin

(ii) cout

(iii) cerr

(iv) clog

(c) What is function template ? Explain this concept, with the help of an example. 5

5. Write short notes on the following (give example code in C++ for each) : 5 each

   (a) Overriding concept in C++

   (b) Message passing

   (c) Encapsulation

   (d) Object initialization and its need