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BCS-031

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

June, 2021

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) Compare Structured programming with Object-oriented programming. Give two advantages of both. *5*

(b) What are Inline Functions ? How does the execution of inline functions differ from normal functions ? Give the advantages of inline functions. *5*

(c) Explain passing of objects as argument to a function with the help of an example. *5*

(d) What is a Friend Function ? Briefly discuss the properties of a friend function. *5*

(e) How does Constructor differ from Automatic Initialization ? Briefly discuss the term Copy Constructor. *5*

(f) What is Function Overloading ? How are function calls matched with overloaded functions ? Explain with the help of an example. 5

(g) Compare Early Binding and Late Binding. Explain when to use which type of binding. 5

(h) What are Exceptions in C++ ? How is exception handling done in C++ ? Briefly discuss the functioning of Try, Throw and Catch expressions with suitable block diagram. 5

2. (a) Briefly discuss the term Message Passing. How does message passing support the concept of interfaces in C++ ? 5

(b) Differentiate between C and C++, give at least five differences. 5

(c) What is Type Conversion ? What is the advantage of Type Conversion ? Briefly discuss Type Casting and Automatic Type Conversion. 5

(d) Compare Break and Continue statement. Exhibit the usage of break and continue statement with suitable code in C++. 5

3. (a) What is a Static Member Function ? Write a program in C++ to illustrate the concept of the static member function. *5*

(b) What is a Destructor in C++ ? Discuss the naming conventions of destructor. Do constructors and destructors have return type ? *5*

(c) What is Access Specifier ? Explain different access specifiers in C++. *5*

(d) Explain the use of '&&' and '!' operators in C++ with the help of an example. *5*

4. (a) What is Inheritance ? What are the advantages of inheritance ? Explain with the help of example. *5*

(b) Compare Multi-level and Multiple inheritance in C++ with the help of an example. *5*

(c) What are the limitations of Operator overloading and Function overloading. *5*

(d) Compare Compile-time Polymorphism with Run-time Polymorphism. *5*

5. (a) What are Stream Manipulators ? Briefly discuss the purpose of various stream manipulators. *5*

(b) Compare Class templates and Function templates with the help of example code. *5*

(c) Write short notes on the following : *10*

(i) Default and Parameterized Constructor

(ii) Virtual Functions and their limitations