

**BACHELOR OF COMPUTER APPLICATIONS  
(BCA) (Revised)**

**00254**

**Term-End Examination**

**December, 2017**

**BCS-031(S) : PROGRAMMING IN C++**

*Time : 3 hours*

*Maximum Marks : 100*

*(Weightage : 75%)*

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

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1. (a) What is the difference between a keyword and an identifier ? Write a simple program in C++ to show these two concepts. 4
- (b) What are data modifiers ? How do they affect the base data type ? Give suitable example. 4
- (c) Given the following code fragment :
- ```
int ch = 20;
cout << ++ch << "\n"
    << ch << "\n";
```
- (i) What output does the above code fragment produce ?
- (ii) What is the effect of replacing ++ch with ch + 1 ? 4

- (d) Identify the problem with the following code. Suggest the way to correct the problem. 4

```
void large (int &a, int &b);  
int main()  
{ large (5, 7); }  
void large (int &a, int &b)  
{ if (a > b)  
    a = -1;  
  else  
    b = -1; }
```

- (e) What are inline functions ? Give the advantages and disadvantages of an inline function. 4
- (f) How is the working of a member function different from a friend function and a non-member function ? 4
- (g) What is a Copy Constructor ? Discuss the situations when a copy constructor is automatically invoked. 4
- (h) Explain any four benefits of object oriented programming. 4
- (i) What is an Object ? Explain with an example, how an object is instantiated. 4
- (j) Can a derived class get access privilege for a private member of the base class ? If yes, how ? 4

2. (a) What is Abstract Class ? Explain the use of abstract class in C++, with the help of an example program. 10
- (b) What is an Exception ? Explain briefly about the exception handling process while executing constructors and destructors. Also explain with an example, how exception types are specified in a C++ program. 10
3. (a) Differentiate between any *two* of the following : 5
- (i) ios :: ate and ios :: app
  - (ii) Binary file and Text file
  - (iii) get() and getline()
- (b) What is a Pure Virtual Function ? Explain the characteristics of a pure virtual function with the help of an example. 8
- (c) What is a stream in C++ ? Name the streams generally used for file I/O. Give their utility in a C++ program. 7
4. (a) What is a Template Class ? Give the advantages of a template class. Create a template class for linked-list data structure. 10
- (b) How are function calls matched with overloaded functions in C++ ? Explain with the help of a program in C++. 10

5. (a) Write a program in C++ to open an existing file and insert the text “File program in C++” at the end of it. Your program should have suitable comments for each line of code. 10
- (b) Write a program in C++ to multiply two complex numbers. In this program you need to create a complex class and define a proper constructor for object initialization. 10
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