

Roll No. ....

# BCA-301(N)

## B. C. A. (Third Semester) EXAMINATION, Dec., 2014

(New Course)

Paper First

OBJECT ORIENTED PROGRAMMING USING C++

Time : *Three Hours* ] [ *Maximum Marks* : 75

**Note :** Section A is compulsory. Attempt any *seven* questions from Section B and only *one* question from Section C.

Section—A 3 each

1. (i) Define friend function with example.
- (ii) What is meant by copy constructor ?
- (iii) What is the need for virtual function in C++ ?
- (iv) What is scope resolution operator ? Write its uses.
- (v) What is exception handling ? Explain with suitable example.
- (vi) List different types of container classes.
- (vii) What are the restrictions that must be observed when using C++ unions ?

## Section—B

6 each

2. Write a C++ program to find the largest of three numbers using inline function. Test the program using a main program.
3. Discuss different types of inheritance with suitable example.
4. What is data hiding ? What are the different mechanisms for protecting data from the external users of a class objects ?
5. Write a program using a try block to detect and throw an exception if the conditions "divide-by-zero" occurs.
6. Write a C++ program for the following specification :

Class : AddressBook

Data Members : Name, Address, Phone No., E-mail, Relationship

Member functions : InsertData(), DisplayData () Search PhNo.()

7. Write a C++ program to add two complex numbers using friend functions.
8. What are various types of constructor ? Whether constructor could be overloaded ? Justify your answer through an example.
9. What is meant by dynamic or late binding ? How is it implemented in C++ ? Distinguish between early binding and late binding ?
10. (i) Differentiate between a class and an object. Describe giving an example.  
(ii) List the characteristic of static member variable with an example.

11. Write an generic C++ program to sort any  $n$  given numbers using template.

## Section—C

12. (i) Explain the static member function and non-static member function with an example. 6  
(ii) What will happen when a derived class object invoke a function which is in the base class also ? 6
13. Write short notes on any *three* of the following : 4 each
  - (i) Function overloading
  - (ii) Overloading constructors
  - (iii) Default arguments
  - (iv) Pure virtual function
  - (v) Polymorphism