(Please write your Exam Roll No.) *Exam Roll No. .....*

END TERM EXAMINATION

THIRD SEMESTER [BCA] NOVEMBER-DECEMBER 2018

Paper Code: BCA-209 Subject: Object Oriented Programming Using C++

Time: 3 Hours ***Maximum Marks: 75***

Note: Attempt any five questions including Q.No1 which is compulsory. Select one question from each unit.

Q1 Answer the following:- **(10x2.5=25)**

(a) Explain data hiding and encapsulation with an example.
(b) Compare the features of C and C++.
(c) Explain the features of macros and inline functions.
(d) Give the syntax of defining a class.
(e) Explain various types of inheritance.
(f) Compare the features of early binding and late binding.
(g) Explain virtual base class with an illustration.
(h) Explain the features of generic programming.
(i) Explain namespace. Give an example.
(j) Explain various types of exceptions.

UNIT-I

Q2 (a) Compare the feature of structured programming language and object oriented programming language. **(4)**

(b) Explain the features of inheritance and exception handling used in object oriented programming languages. **(4.5)**

(c) Explain the features of C++ environment: **(4)**

i. C++ Compilers
ii. Testing a C++ program

OR

Q3 (a) Write a C++ program to illustrate the use of new () and delete () operators. **(4.5)**

(b) Explain various types of polymorphism. **(4)**

(c) Mention any four standard libraries used in C++. **(4)**

UNIT-II

Q4 (a) Write a C++ program to illustrate the default constructor, parametric constructor and copy constructor. **(4.5)**

(b) Explain the role of friend functions in C++. **(3.5)**

(c) Explain the following:- **(4.5)**

i. Abstract class and meta class
ii. Data members and member functions
iii. This pointer

OR

Q5 (a) Explain function overloading with an example. **(4)**

(b) Explain the role of constructors and destructors in C++. **(3.5)**

(c) Write a C++ program to illustrate the following:- **(5)**

i. Call by value
ii. Call by reference

UNIT-III

Q6 (a) Write a C++ program to illustrate the following: (i) overloading of member functions and (ii) overriding of member functions. **(6)**

(b) Write a C++ program to illustrate virtual functions. **(4.5)**

(c) Give an example to illustrate aggregation and composition. **(4)**

OR

P.T.O.

Q7 (a) Explain the access mechanism of public, private and protected related to inheritance. **(4.5)**

(b) Explain how to resolve ambiguity in multiple inheritances with an example. **(3)**

(c) Write a C++ program to illustrate the following:- **(5)**

i. Overload binary operator

ii. Overload unary operator

UNIT-IV

Q8 (a) Write a C++ program to illustrate the following stream functions: is_open (), get() and put(). **(5)**

(b) Write a C++ program to illustrate overloading of template functions. **(4)**

(c) Explain the features of persistent objects. Give an example. **(3.5)**

OR

Q9 (a) Give the syntax of write () and read () functions using in file streams. **(4)**

(b) Explain the template functions with an example. **(4)**

(c) Write a C++ program to illustrate try, throw and catch statements. **(4.5)**

****